Hunt Institute for Botanical Documentation
5th Floor, Hunt Library
Carnegie Mellon University
4909 Frew Street
Pittsburgh, PA 15213-3890
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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.

REPORT ON

NSF Grant 1309 - Dr. David J. Rogers

As of May 1, 1956

Ref. No.	Salaries and Wages	Equipment (Permanent)	Supplies, Materials, and Exp. Equip.	Travel	Other (Student Help)	Total Direct Costs
4-479(4/30/55				1000 00		
JV208 (5/31/5)			15 00			
6-208(6/30/5)			27 32			
5-67 (5/31/55)	800 00					
9-65 (9/30/56)					35 00	
10-164 (10/31/56)					35 00	
11-115 (11/30/56)					35 00	
11-405 (12/31/56)					35 00	
1-83 (1/31/56)					35 00	
2-58 (2/28/56)			4 64			
2-173 (2/29/56)			26 00			
3-50 (3/20/56)			1 05			
3-156 (3/31/56)					3 00	
Totals	800 00	- o -	74 01	1000 —	178 00	20 52 01
Plus Adm & O H Allowance on Total Grant						315 00
Total Charges to Grant						$ 2367 01
Amount of Grant						$ 2500 00
Total Charges Listed Above						2367 01
Balance in Account 1187-A						$ 132 99

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National Science Foundation Grant No. 1309

Account No. 1187A - Dr. David J. Rogers
As of August 8, 1955

Grant received				$2500.00
Expenditures 1955:				
May 18	(4-479)	Transportation $494.62 Per Deim Allowance 503.75 Stamps 1.63	$1000.00	
May 31	(5-67)	D. J. Roger's grant	800.00	
May 31	(JV-208)	500 Keeport cards	15.00	
June 30	(6-208)	Film from Wolff's	27.32	1842.32
				657.68
Less Administrative and Overhead Costs				315.00
Balance Remaining in Account				$ 342.68

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National Science Foundation
NSF Form 612, October 1952

Form Approved
Budget Bureau No. 99-R013

sent to Dr. Rogers

NATIONAL SCIENCE FOUNDATION

GRANT FISCAL REPORT

From: ALLEGHENY COLLEGE (Dr. David J. Rodgers)
(Grantee)
MEADVILLE, PENNSYLVANIA
(Address)

To: Chief Grants Administrator
NATIONAL SCIENCE FOUNDATION
Washington 25, D. C.

Date: 8 / 31 / 57

Report of obligations from NSF funds for grant number: G - 2327 (NSF No.)

Reporting period: 3 / 15 / 56 (Date) to 8 / 15 / 57 (Date) (inclusive)

Type report: Interim [ ], Number ___; final [X] (check one)

	Item	Amount Expended
1.	Salaries and wages	$ 909.75
2.	Equipment (permanent)	-0-
3.	Supplies, materials, and expendable equipment	.75
4.	Travel	360.06
5.	Publication costs (Total - page costs, reprints, direct labor, etc.)	
	(a) Page costs only, if available	
	(b) Reprints, direct labor, and any other publication costs	
6.	Other (specify):	120.65
7.	Total direct costs - Add lines 1 through 6	1,391.21
8.	Allowance for indirect costs - 15 % of line 7	208.68
9.	Total obligations for above period - Add lines 7 & 8	1,599.89
10.	Total obligations for prior periods	-0-
11.	Total obligations to date - Add lines 9 & 10	1,599.89

COMMENTS: (Continue on reverse side if necessary)

SIGNED: Allen B Edwards TITLE: TREASURER

TYPE NAME: ALLEN B. EDWARDS

Two copies of an interim fiscal report are due approximately six months from award date of a grant and at six-month intervals thereafter. Firm outstanding commitments should be considered as obligations for the purposes of interim reports. Two copies of a final fiscal report are due as soon as possible after all costs chargeable to the grant are known. The following certification, in the case of final reports, should be inserted above, immediately preceding the signature of the official authorized to sign for the grantee institution: "I certify that this final fiscal report is correct and that the expenditures included herein are deemed properly chargeable to the grant." Unused funds are to be returned by check payable to the National Science Foundation.

GPO 83:44886

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OTHER

(1) Student Medical Attention

(2) Passport

(3) Photos

(4) Mailing Specimen

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ALLEGHENY COLLEGE
MEADVILLE, PENNSYLVANIA

October 4, 1957

Dr. David J. Rogers
New York Botanical Gardens
Bronx Park
New York 58, New York

Dear Dave,

Enclosed please find a copy of the final report on your National Science Foundation Grant #G-2327, which has been forwarded to the foundation along with the remaining balance of $3200.11.

I hope you will find it in the proper order.

Very truly yours,

Kenneth N. Stewart

Auditor

KN/ph

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FINAL REPORT ON ACTIVITIES UNDER GRANT G-2327

The activities made possible through NSF funds are as follows:

1. The collection of a working herbarium for studies in the systematics of the varieties of Manihot esculenta. Existing herbaria in this country and abroad contained so few collections that it was impossible to begin study of the variation within the species. Specimens were collected through cooperative endeavors between myself and the Department of Agriculture in Jamaica and the Inter-American Institute of Agricultural Sciences at Turrialba, Costa Rica. Additional collections have been made in Colombia, S.A., and in Nicaragua.

These specimens are not, in a sense, a "typical" herbarium specimen. They are in fact actual population samples, and one specimen is representative of many plants of one variety. In other words, we have a collection, which if taken by normal techniques would have been in the neighborhood of 5,000 specimens, but by the technique employed actually numbers only 305 separate sheets.

2. A preliminary framework for the classification of the varieties has been established. The word preliminary is intentional, in that the collections so far made are only from areas in and around the Caribbean Sea and may not represent the final framework for classification. Much more field work is needed, particularly in the dryer areas of north and eastern Brazil.

3. The material so far collected has provided the background for preliminary reports to two meetings of societies: (a) The National Academy of Sciences, November 17, 1957, and (b) AIBS, August 25, 1958.

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National Science Foundation
NSF Form 612, October 1952

Form Approved
Budget Bureau No. 99-R013

NATIONAL SCIENCE FOUNDATION

GRANT FISCAL REPORT

From: Allegheny College (Dr. David J. Rogers)
(Grantee)
Meadville, Pa.
(Address)

To: Chief Grants Administrator
NATIONAL SCIENCE FOUNDATION
Washington 25, D. C.

Date: 3/15/57

Report of obligations from NSF funds for grant number: G-2327 (NSF No.)

Reporting period: March 15, 1956 (Date) to March 15, 1957 (Date) (inclusive)

Type report: Interim ☐, Number ___; final ☐ (check one)

	Item	Amount Expended
1.	Salaries and wages	$ 680.00
2.	Equipment (permanent)	- 0 -
3.	Supplies, materials, and expendable equipment	.75
4.	Travel	360.06
5.	Publication costs (Total - page costs, reprints, direct labor, etc.)	
	(a) Page costs only, if available	
	(b) Reprints, direct labor, and any other publication costs	
6.	Other (specify): Miscellaneous	20.65
7.	Total direct costs - Add lines 1 through 6	981.46
8.	Allowance for indirect costs - ____ % of line 7	147.22
9.	Total obligations for above period - Add lines 7 & 8	1,128.68
10.	Total obligations for prior periods	- 0 -
11.	Total obligations to date - Add lines 9 & 10	1,128.68

COMMENTS: (Continue on reverse side if necessary)

SIGNED: _____ TITLE: Treasurer

TYPE NAME: Allen B. Edwards

Two copies of an interim fiscal report are due approximately six months from award date of a grant and at six-month intervals thereafter. Firm outstanding commitments should be considered as obligations for the purposes of interim reports. Two copies of a final fiscal report are due as soon as possible after all costs chargeable to the grant are known. The following certification, in the case of final reports, should be inserted above, immediately preceding the signature of the official authorized to sign for the grantee institution: "I certify that this final fiscal report is correct and that the expenditures included herein are deemed properly chargeable to the grant." Unused funds are to be returned by check payable to the National Science Foundation.

GPO 900100

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National Science Foundation
NSF Form 612, October 1952

Form Approved
Budget Bureau No. 99-R013

NATIONAL SCIENCE FOUNDATION

GRANT FISCAL REPORT

From: ALLEGHENY COLLEGE (Dr. David J. Rogers)
(Grantee)
Meadville, Pennsylvania
(Address)

To: Chief Grants Administrator
NATIONAL SCIENCE FOUNDATION
Washington 25, D. C.

Date: 2/12/57

Report of obligations from NSF funds for grant number: G-1309
(NSF No.)

Reporting period: Jan. 11, 1955 (Date) to July 31, 1956 (Date) (inclusive)

Type report: Interim [ ], Number ___; final [X] (check one)

	Item	Amount Expended
1.	Salaries and wages	$ 800.00
2.	Equipment (permanent)	
3.	Supplies, materials, and expendable equipment	98.35
4.	Travel	1,040.00
5.	Publication costs (Total - page costs, reprints, direct labor, etc.)	
	(a) Page costs only, if available	
	(b) Reprints, direct labor, and any other publication costs	
6.	Other (specify): Student Help	246.65
7.	Total direct costs - Add lines 1 through 6	2,185.00
8.	Allowance for indirect costs - 15% of line 7	315.00
9.	Total obligations for above period - Add lines 7 & 8	2,500.00
10.	Total obligations for prior periods	- 0 -
11.	Total obligations to date - Add lines 9 & 10	2,500.00

COMMENTS: (Continue on reverse side if necessary)

SIGNED: Allen B. Edwards TITLE: Treasurer
TYPE NAME: Allen B. Edwards

Two copies of an interim fiscal report are due approximately six months from award date of a grant and at six-month intervals thereafter. Firm outstanding commitments should be considered as obligations for the purposes of interim reports. Two copies of a final fiscal report are due as soon as possible after all costs chargeable to the grant are known. The following certification, in the case of final reports, should be inserted above, immediately preceding the signature of the official authorized to sign for the grantee institution: "I certify that this final fiscal report is correct and that the expenditures included herein are deemed properly chargeable to the grant." Unused funds are to be returned by check payable to the National Science Foundation.

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Mr. Rogers

March 30, 1956

Dr. Alan T. Waterman, Director
National Science Foundation
Washington 25, D. C.

Dear Dr. Waterman:

President Louis T. Benezet, who is now president of Colorado College, has forwarded to me your letter regarding the grant by the National Science Foundation to Allegheny College, for the support of research entitled "Variation in Manihot Utillissima", under the direction of David J. Rogers, Department o f Biology, for a period of approximately two years. This grant is to be paid as follows: $4,800 on or about two weeks after March 15, 1956; $2,000 on or about May 15, 1957; and $1,200 on or about November 15, 1957.

Allegheny College accepts this grant subject to the conditions as to termination, application for patent rights, and administration stipulated in your letter of March 15, 1956.

On behalf of the College I wish to express our deep appreciation for your decision to continue the support of the research being carried on by Professor David J. Rogers.

Sincerely yours,

Lawrence L. Pelletier

LLP/ba

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NATIONAL SCIENCE FOUNDATION
WASHINGTON 25, D. C.

March 20, 1956

Dr. David J. Rogers
Department of Biology
Allegheny College
Meadville, Pennsylvania

Dear Dr. Rogers:

The Division of Biological and Medical Sciences is pleased to inform you that your research proposal, entitled "Variation in Manihot utilissima", has been approved by the National Science Foundation for the sum of $8,000 for a period of approximately two years. A copy of the grant statement is enclosed in order that you may acquaint yourself with the conditions.

Our policy with regard to reports on research supported by the Foundation is to keep them as simple as possible. We should like to have a short informal annual report (in duplicate) at the end of each calendar year and, at the expiration of the grant, a more comprehensive final report (in duplicate) of the progress of the research. These reports should contain, in addition to a description of the accomplishments achieved during the tenure of the grant, a chronological bibliography of all articles published under the grant. It is also desirable that the final report should include a listing of personnel, i.e., whether graduate student, technical assistant, professional associate, etc. If, in the course of the research, any unusually significant results are obtained, we should like to know about them as they occur.

We also request that six reprints of each publication resulting from work done under the grant be provided as soon as such reprints become available. An appropriate acknowledgment should be made in each publication; usually a simple footnote is adequate.

If you have any questions about these or other matters, please do not hesitate to write. We wish you continued success in your research program.

Sincerely yours,

Roz

Rogers McVaugh
Program Director for
Systematic Biology

Enclosures

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MAR 1 5 1956

Dr. Louis T. Benezet, President
Allegheny College
Meadville, Pennsylvania

Research Grant NSF-02327

Dear Dr. Benezet:

I am pleased to inform you that the sum of $8,000 is hereby granted by the National Science Foundation to Allegheny College, for the support of research entitled "Variation in Manihot Utilissima," under the direction of David J. Rogers, Department of Biology, for a period of approximately two years. Until further notice this grant will be paid as follows: $4,800 on or about two weeks from date of this letter; $2,000 on or about May 15, 1957; and $1,200 on or about November 15, 1957.

It is a condition of this grant that it may be revoked in whole or in part by the Foundation after consultation with the principal investigator and the grantee, except that a revocation shall not affect any commitment which, in the judgment of the Foundation and the grantee, had become firm prior to the effective date of the revocation; and that funds not committed by the grantee prior to the conclusion of the work contemplated under this grant shall be returned to the Foundation.

It is a further condition of this grant that disposition of domestic patent and other rights in any inventions or discoveries made or conceived during the research shall be the responsibility of the grantee; that disposition of foreign patent and other rights to any such invention or discovery shall be determined by the United States Government; that the grantee shall give the Foundation reasonable notice of application by the grantee or other person or institution for a foreign or domestic patent on any such invention or discovery; and that upon issue of a domestic patent on any such invention or discovery, the patentee shall grant the Government an irrevocable, royalty-free, nonexclusive license for use of such invention or discovery for governmental purposes.

The Foundation desires that this grant be administered in general accordance with the Foundation's policies for research grants as stated in "Grants for Scientific Research," April 1955, and in conformity with the other understandings reached between the Foundation and the grantee relating to this grant.

Please acknowledge receipt at your earliest convenience.

Sincerely yours,

Alan T. Waterman
Director

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NATIONAL SCIENCE FOUNDATION
WASHINGTON 25, D. C.

January 17, 1955

Dr. David J. Rogers
Allegheny College
Meadville, Pennsylvania

Dear Doctor Rogers:

The Division of Biological and Medical Sciences is pleased to inform you that your research proposal entitled "Variation in Manihot Utilissima" has been approved by the National Science Foundation for the sum of $2,500 for a period of approximately one year. A copy of the grant statement is enclosed in order that you may acquaint yourself with the conditions.

Our policy with regard to reports on research supported by the Foundation is to keep them as simple as possible. We should like to have a short informal annual report (in duplicate) at the end of each calendar year and, at the expiration of the grant, a more comprehensive final report (in duplicate) of the progress of the research. These reports should contain, in addition to a description of the accomplishments achieved during the tenure of the grant, a chronological bibliography of all articles published under the grant. It is also desirable that the final report should include a listing of personnel, i.e., whether graduate student, technical assistant, professional associate, etc. If, in the course of the research, any unusually significant results are obtained, we would like to know about them as they occur.

We also request that six reprints of each publication resulting from work done under the grant be provided as soon as such reprints become available. An appropriate acknowledgment should be made in each publication; usually a simple footnote is adequate.

Should you have any questions about these or other matters, please do not hesitate to write.

May I wish you success on your research program.

Sincerely yours,

William C. Steere
Program Director for
Systematic Biology

Enclosure

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Dr. Louis T. Benezet, President
Allegheny College
Meadville, Pennsylvania

JAN 11 1955

Research Grant NSF-G1309

Dear Dr. Benezet:

I am pleased to inform you that the sum of $2,500 is hereby granted by the National Science Foundation to Allegheny College, for the support of research entitled "Variation in Manihot Utilissima," under the direction of David J. Rogers, Department of Biology, for a period of approximately one year. This grant will be paid on or about January 15, 1955, in full.

It is a condition of this grant that it may be revoked in whole or in part by the Foundation after consultation with the principal investigator and the grantee, except that a revocation shall not affect any commitment which, in the judgment of the Foundation and the grantee, had become firm prior to the effective date of the revocation; and that funds not committed by the grantee prior to the conclusion of the work contemplated under this grant shall be returned to the Foundation.

It is a further condition of this grant that disposition of domestic patent and other rights in any inventions or discoveries made or conceived during the research shall be the responsibility of the grantee; that disposition of foreign patent and other rights to any such invention or discovery shall be determined by the United States Government; that the grantee shall give the Foundation reasonable notice of application by the grantee or other person or institution for a foreign or domestic patent on any such invention or discovery; and that upon issue of a domestic patent on any such invention or discovery, the patentee shall grant the Government an irrevocable, royalty-free, nonexclusive license for use of such invention or discovery for governmental purposes.

The Foundation desires that this grant be administered in general accordance with the Foundation's policies for research grants as stated in "Grants for Scientific Research," December 1951, and in conformity with the other understandings reached between the Foundation and the grantee relating to this grant.

Please acknowledge receipt at your earliest convenience.

Sincerely yours,

Sgd. Alan T. Waterman

Alan T. Waterman
Director

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NATIONAL SCIENCE FOUNDATION
WASHINGTON 25, D. C.

January 17, 1955

Dr. David J. Rogers
Allegheny College
Meadville, Pennsylvania

Dear Doctor Rogers:

I am sorry to be so late in answering your letter of December 9 but I have been interrupted in my work by attending the AAAS meetings in Berkeley and by a long visit to the University of Illinois.

In response to your specific questions, I can say that an allowance for 15% overhead was included in the grant and that blanks for reporting expenditures have already been sent to your Treasurer.

Please let us know the outcome of your request for help from the Lalor Foundation -- not that this will make any difference with our grant to you, but simply for purposes of information.

If you move to another institution, your grant cannot be transferred automatically, but funds have to be returned to the National Science Foundation and a new application submitted. Although, of course, we can make no promises or commitments on a hypothetical situation; nevertheless, it would seem that proposals that had once been found meritorious should not suffer too much in a new consideration.

Sincerely yours,

William C. Steere
Program Director for
Systematic Biology

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MEMORANDUM

DATE Jan. 15, 1955

TO: Dr. Bugbee cc. Dr. Rogers

FROM: Allen Edwards

I have received a note from the National Science Foundation, answering our question with regard to overhead charges. Under the arrangement, Dr. Bugbee holds a grant of $2,000, of which $255 has been allocated by the Foundation for overhead costs. The grant of Dr. Rogers is for $2,500, of which $315 is the allowance for overhead costs.

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Dr Rogers

January 17, 1955

Dr. Alan T. Waterman, Director
The National Science Foundation
Washington 25, D. C.

Dear Dr. Waterman:

Acknowledging your notification of January 11, it is a pleasure for me to accept the grant of $2,500 from the National Science Foundation to Allegheny College for the support of research under the direction of Dr. David J. Rogers.

We are happy, as in the case of Dr. Bugbee of the same department, to accept the terms of the grant.

Sincerely yours,

Louis T. Benezet

LTB/ba

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for this additional application is that the Department of Agriculture in

December 9, 1954

Dr. W. C. Speere
National Science Foundation
Washington 25, D.C.

Dear Dr. Speere:

Thank you for the telephone call of December 7, with notification of approval of my grant.

The amount of the grant as stated by you, $2500.00, is acceptable to me and to Allegheny College. We are not sure, and I don't remember whether that sum is inclusive or exclusive of the 15% overhead. If you could enlighten us on that subject, I will appreciate it.

From the form of the contract (copy of which was attached to application blanks) I could see no place for reporting expenditures to the Foundation. Is any report from our treasurer desired by the Foundation? One other point is not quite clear to me. In event of my transfer to another job, does the contract remain at the same institution, or is it transferable to the new institution?

At the moment, I have not made application for any other grant. However, now that I have assurance that my work can proceed this coming year, I intend to apply for a grant from the Lalor Foundation in order to provide travel and maintenance money for one of my students. The reason for this additional application is that the Department of Agriculture in Jamaica cannot release any of its agricultural chemistry staff for work on comparative analyses of carbohydrate, protein, and HCN content of different clones growing there. I received notification of this difficulty just two weeks ago, too late to make application to you for additional help.

As far as time of commencement of this grant, I think that April 1, 1955 will be a satisfactory date.

I trust that I have answered all questions which you asked me in our telephone conversation. Meadville's phone system is rather weak, and I may have missed part. Thanks again for the notification.

Sincerely yours,

David J. Rogers
Assistant Prof. of Biology

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December 8, 1954

Dr. W. C. Speere
National Science Foundation
Washington 25, D.C.

Dear Dr. Speere:

Thank you for your telephone call yesterday with notification of approval of my grant.

The amount of the grant as stated by you, $2500.00, is acceptable to me and to Allegheny College.

At the moment, I have not made application for any other grant. However, now that I have assurance that my work can proceed this coming year, I intend to apply for a grant from the Lalor Foundation in order to provide travel money and maintenance funds for one of my students. The reason for this additional application is that the Department of Agriculture in Jamaica cannot release any of its agricultural chemistry staff for work on comparative analyses of carbohydrate, protein, and HCN content of different clones growing there. I received notification of this difficulty just two weeks ago, too late to make application to you for additional help.

I think that the Department of Agriculture in Jamaica will be able to provide equipment and materials for these tests, and it is only a question of a person competent to carry out the work. One of my students, a combined chemistry-biology major, Mr. Charles Wells, is well qualified to do the work.

As far a time of commencement of this grant, I think that April 1, 1955 will be a satisfactory date.

I trust that I have answered all questions which you asked me in our telephone conversation. Meadville's phone system is rather weak, and I may have missed part. Thanks again for the notification.

Sincerely yours,

David J. Rogers
Assistant Prof. of Biology

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MISSOURI BOTANICAL GARDEN
"SHAW'S GARDEN"
2315 TOWER GROVE AVENUE
ST. LOUIS 10, MISSOURI
PROSPECT 6-5567

June 4, 1954

Dr. Dave Rogers
Botany Department
Allegheny College
Meadville, Pennsylvania

Dear Dr. Rogers:

Enclosed is Dr. Anderson's personal check for $250.

Will you please send Dr. Anderson an official receipt for this money since it is a personal check and he will need something to show the tax men.

Yours truly,

Mollie Ahlemeyer
Secretary to
Edgar Anderson
Director

Encl.

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November 17, 1953

Public Relations Office
Kaiser Aluminum Chemical Corporation
Kaiser Building
1924 Broadway
Oakland 12, California

Gentlemen:

I was quite pleased as a result of my visit to Jamaica last summer to see that Kaiser, as well as Reynolds and Canadian Aluminia had contracts which provided for restoration of lands after mining the bauxite ore. This is, I think, one of the basic requirements of modern day companies to aid in the betterment of life for those people who might suffer from exploitation.

My visit to Jamaica was prompted by reasearch program which has similar interests in mind -- to aid in the betterment of the living conditions for the natives of not only Jamaica, but many other tropical people as well. You may know that the very land in Jamaica which has the best bauxite ore is also one of the best places for the growth of the basic foodstuff of the native Jamaican, Namely cassava. Cassava is one of the world's great food plants, but one which has received only the most cursory attention from the world's agriculturists. Since cassava grows readily where nearly all other food crops fail, due to it's adaptation to exist on marginal lands, it seems to me that one area for research in restoration of lands should very definitely include the study of the plants which produce cassava.

Since this coincidence exists, that you are involved in land restoration, and I in a program of research of this basic food crop; would you be interested in support of some of the expenses of such research? The type of research which I carry on with these plants, and with which I have been involved for better than a year, is not an expensive program. It requires that I have some means of getting to Jamaica, living while there, and a few additional expenditures for minor items -- film supplies, etc.

That there is significance to my study is demonstrated best by the fact that my work last summer was given very good cooperation by the Jamaican Department of Agriculture. Their interest and activity have furthered this work in providing workers and land in their experiment stations to collect, cultivate and keep records of

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experimental plants in my absence. Further evidence is shown by the fact that I was supported in part by a grant from the American Philosophical Society.

Before I include a great amount of detailed references as to my capacities for such research and my integrity in making this inquiry, I thought it well to make this preliminary address to you. If you think such a plan feasible, I shall furnish you with detailed plans of my study, how it dovetails with your program, competent references to people who have intimate knowledge of the value of my study and of my capacity to carry out the work, and any other data which you should like to have.

If this letter has been addressed to the wrong department of your organization, I trust that you will direct it to authorities to whom this enquiry is more pertinent.

Yours very truly,

David J. Rogers
Assistant Professor of Biology

DJR/amp

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Report to the American Philosophical Society on Grant No. 1565, Penrose Fund

Title: Studies on variation in Manihot utilissima and related species

Grant was made to assist in collection of materials and to establish further experimental work in two areas, Jamaica and Costa Rica. With some changes, this plan was followed.

Upon arrival in Jamaica, I was notified the Department of Agriculture had ruled against importation of any varieties from any other area. Since the original plan was set up for the study of the varieties from all areas of the tropical world under uniform conditions, there had to be a complete revision of the experimental work to be done in Jamaica. A Sufficient number of varieties occur in Jamaica, however, to make possible another aspect of the same study.

Two general types of "cassava" are known, the so-called "bitter" varieties, with a lethal amount of HCN in the roots, and the "sweet" : either without HCN, or a low enough concentration of the poisonous principle to make the sweet varieties edible without any previous treatment. One of the problems in my study is to determine whether there is some genetic difference between the bitter and sweet varieties, or whether the concentration of HCN is governed by environment. That this does not seem to be the case is shown by the fact that both bitter and sweet varieties are usually found inter-mingled. However, to fully determine the extent of control of this factor, two experimental plots were established in widely different habitats: one in a low coastal zone in the parish of St. Catherine, on the Bodles Experimental Farm of the Department of Agriculture, The other at an elevation of about 3000 feet in the parish of Manchester on the Grove Place Experiment Station of the Department of Agriculture. The first plot is in an area of heavy marine

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clay, pH about 7.8, low rainfall, high average temperatures, farmed by irrigation methods; the second has lighter lateritic soils, pH about 6, moderate to heavy rainfall, and moderate, average temperature.

Upon establishment of these plans, efforts were made to collect as many of the local variants of Manihot utilissima as possible. The wide variety of habitats on the island proved to produce a surprisingly large number of variations, both of the bitter and of the sweet types. Trips were made with agricultural extension agents or by hired car to all of the southern parishes exclusive of Westmoreland, and to St. Ann and St. Mary perishes on the northern side. On these trips, the agents were instructed to sample cassava plantings at frequent intervals in order to secure as much of the variation as possible. At the same time, samples (dried herbarium specimens) were made of each variant found. Each agent was asked to have six cuttings of each variant sent to the two experimental plots, in order to provide duplicate studies of environmental variations.

Although it is certain that some of the variants which occur in Jamaica have escaped my attention, a large enough proportion of those existing have been brought together to make the studies of environmental variation significant. At the same time, the systematic studies of the varieties will be more significant.

Altogether, 48 named varieties were collected throughout Jamaica. Without doubt, many of these names are synonymous, but until comparisons of characteristics have been made on the herbarium material and on the specimens in the "museum" plots, no accurate figures of the numbers existing can be presented. In addition, the plants at maturity are about eight to twelve feet tall, making it impossible to make entirely adequate herbarium specimens. One of the most stable characteristics of the varieties is the

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branching pattern. This characteristic is not reflected in the dried specimen, although a large number of photographs were taken to accompany the dried material.

The second phase of the summer's activities proved more successful in terms of the original plans. With the cooperation of the staff of the Inter-American Institute of Agricultural Sciences at Turrialba, Costa Rica, museum plots for varieties of Manihot utilissima and allied species from all over the tropical world were established. That is, the plots where these varieties are to be raised were established. At the moment, requests have been sent to most of the important centers for propagating materials, and some of the requests have been filled. Fortunately, Costa Rica had no ban upon importation of varieties which might be carriers of diseases. In addition, through the cooperation of Dr. Frederick Wellman, Regional Plant Pathologist of the Foreign Agruculture Department of the United States Department of Agriculture stationed at Turrialba, I have been assured of a close check against introduction of diseases which might cause serious damage to an important crop in Costa Rica.

At the Institute at Turrialba, Dr. Jorge Leon, collaborator in this study, had previously established plots of most of the varieties grown in Costa Rica. Through his cooperation, it was possible to make a large number of population studies to determine differences amongst local varieties. This provided a basis for future studies when the large introduction plantings become sufficiently mature for further study.

Several trips were made in Costa Rica to areas of largest concentration of production of tapioca or yuca. The amount of variation found in Costa Rica was considerably less than that of Jamaica. The methods of planting was usually different from Jamaican methods in that the Costa Rican

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plantings were uniformly of one type per field whereas the Jamaican plantings were frequently mixtures of several varieties. The advantage or disadvantage of either has not been examined. Another significant difference between the Jamaican and Costa Rican plants was the fact that about 3/4 of the plants in Jamaica consisted of bitter varieties, and only 1/4 of the sweet type whereas in Costa Rica the sweet varieties have been selected almost to the exclusion of the bitter ones. There was no opportunity to check a report that bitter varieties were raised by the native Indian population in the remote areas of southern Costa Rica.

In Costa Rica, the largest plantings of Manihot utilissima occur on the Atlantic side, mostly at elevations lower than 2000 feet, but many areas of higher elevation had a few plantings. The Pacific slope of Costa Rica and Nicaragua were uniformly less variable as to numbers of varieties, and only six to eight different ones were added to the plots at Turrialba after a week's expedition to areas of production in Nicaragua and western Costa Rica.

This summer's activities were obviously of an introductory nature. It is impossible to make any systematic studies with so small a population sample as that which was made. In all, not more than 200 specimens were taken, but these include many duplicated in order to study variability within a so-called variety. It is hoped that through cooperation with Brazilian and other South American botanists and agriculturists, a broader spectrum of the variation will be obtained. It was indeed encouraging to achieve such fine cooperation from agriculturists for a problem whose basic aspects are somewhat removed from an immediate practical return. Both Jamaican and Costa Rican officials were most helpful in establishing this work.

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Title: Studies on variation in Manihot utilissima and related species

Grant was made to assist in collection of materials and to establish further experimental work in two areas, Jamaica and Costa Rica. With some changes, this plan was followed.

Upon arrival in Jamaica, I was notified the Department of Agriculture had ruled against importation of any varieties from any other area. Since the original plan was set up for the study of the varieties from all areas of the tropical world under uniform conditions, there had to be a complete revision of the experimental work to be done in Jamaica. A sufficient number of varieties occur in Jamaica, however, to make possible another aspect of the same study.

Two general types of "cassava" are known, the so-called "bitter" varieties with a lethal amount of HCN in the roots, and the "sweet" either without HCN, or a low enough concentration of the poisonous principle to make the sweet varieties edible without any previous treatment. One of the problems in my study is to determine whether there is some genetic difference between the bitter and sweet varieties, or whether the concentration of HCN is governed by environment. That this does not seem to be the case is shown by the fact that both bitter and sweet varieties are usually found inter-mingled. However, to fully determine the extent of control of this factor, two experimental plots were established in widely different habitats: one in a low coastal zone in the parish of St. Catherine, on the Bodles Experimental Farm of the Department of Agriculture, the other at an elevation of about 2000 feet in the parish of Manchester on the Grove Place Experiment Station of the Department of Agriculture. The first plot is in an area of heavy marine clay, pH about 7.8, low rainfall, high average temperatures, farmed by irrigation methods; the second has lighter lateritic soils, pH about 6, moderat to heavy rainfall, and moderate, average temperatures.

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Several trips were made in Costa Rica to areas of largest concentration of production of tapioca or yuca. The amount of variation found in Costa Rica was considerably less than that of Jamaica. The method of planting was usually different from Jamaican methods in that the Costa Rican plantings were uniformly of one type per field whereas the Jamaican plantings were frequently mixtures of several varieties. The advantage or disadvantage of either has not been examined. Another significant difference between the Jamaican and Costa Rican plants was the fact that about 3/4 of the plantings in Jamaica consisted of bitter varieties, and only 1/4 of the sweet type whereas in Costa Rica the sweet varieties have been selected almost to the exclusion of the bitter ones. There was not opportunity to check a report

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AMERICAN PHILOSOPHICAL SOCIETY
held at Philadelphia
for Promoting Useful Knowledge

104 South Fifth Street
Philadelphia 6, Pa.

Professor David J. Rogers
Allegheny College
Meadville, Penna.

June 19, 1953

Grant No. 1565

Dear Sir:

If the project for which you received a grant from the Society is complete, please submit promptly and not later than October 1, for publication in the YEAR BOOK for this year, a report giving a summary of the results in a form informative for scholars in general, not intelligible only to specialists, and not merely a description of work done.

If the grant was made for collection of material, which remains to be studied and a report of results prepared in due course for publication, the report for the YEAR BOOK should state what trips were taken to secure the material, a list of all or the more important material collected, and plans for the completion of the project.

In order that the report be ready for publication it should be typewritten in double space and be not more than two thousand words if adequate. It should include at the end a bibliography of titles, places of publication, volume, inclusive pages, and dates of all articles resulting from the grant; in the form:

Brown, J. B. 1929. Title of article. Proc. Amer. Philos. Soc. 78 (3): 45-46

_ _ _ 1930. Title of a book. Philadelphia, Lippincott.

Any references to other publications should be in foot-notes.

If the part of your program for which the grant was made is not completed, a progress report should be in this office for our records by November first.

Very truly yours,

L. P. Eisenhart

Executive Officer.

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AMERICAN PHILOSOPHICAL SOCIETY
held at Philadelphia
for Promoting Useful Knowledge

104 South Fifth Street
Philadelphia 6, Pa.

April 15, 1953

Dr. David J. Rogers
Allegheny College
Meadville, Penna.

Dear Dr. Rogers:

The Committee on Research of the American Philosophical Society at its recent meeting voted to make you a grant of $750. to enable you to carry on your proposed investigation.

Enclosed find two Agreement forms which we will ask you to sign and return to this office; one copy duly signed will be returned to you.

We note that payment is to be made to the Treasurer, Allegheny College, on or about June 1.

Sincerely yours,

L.P. Eisenhart

L.P.Eisenhart
Executive Officer.

E/N

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April 17, 1953

Dr. L. P. Eisenhart
American Philosophical Society
Philadelphia 6, Pa.

Dear Dr. Eisenhart:

Enclosed find two Agreement forms with my signature for the grant of $750.00.

Thank you kindly for your consideration.

Sincerely yours,

David J. Rogers
Assistant Prof. of Biology

Encl.: 2

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American Philosophical Society

held at Philadelphia
for Promoting Useful Knowledge

104 South Fifth Street
Philadelphia 6, Pa.

Agreement between the AMERICAN PHILOSOPHICAL SOCIETY and the undersigned recipient of a grant from the PENROSE Fund:

It is understood and agreed that the relation of the Grantee to the American Philosophical Society is that of an individual contractor and is not and at no time shall be that of an employee.

The Grantee agrees to submit to the Society a semi-annual account of his disbursement of the amount granted to him, and a report of the result of his work when it is completed. If not completed within a year a progress report should be submitted.

The Grantee agrees that apparatus or materials of lasting value purchased by a grant from this Society shall be marked with a label to be furnished: "Property of the American Philosophical Society, Philadelphia," and shall be returned to the Society when the research for which it was purchased is completed.

The Grantee agrees that in the event of his death or disability the Society shall have the right to take over any results of his unfinished work including manuscripts, unless other provision satisfactory to the Society is made.

The Grantee agrees that any publication of the results of the work supported in whole or in part by a grant from the Society shall state in the publication that the work was supported by a grant from that particular fund of the American Philosophical Society from which the grant was made. He further agrees that a report of the work shall be submitted to the Society for publication in its YEAR BOOK.

In the event that the recipient of a grant shall fail to commence in a reasonable time and thereafter to continue work on the project for which the grant was made, the Society shall be under no obligation to make any payment, or, if any has been made, to make any further payments.

Grant No. 1565 Penrose Fund David J. Rogers (Grantee)

Date April 20, 1953

THE AMERICAN PHILOSOPHICAL SOCIETY

By L. P. Eisenhart
Executive Officer.

$750.00

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Institution: Allegheny College, Meadville, Pennsylvania

Principal investigator: David J. Rogers

Title of Proposed Research: A Study of the Varieties of Manihot utilissima

Description of proposed research: An attempt will be made to classify the varieties of the species Manihot utilissima, family Euphorbiaceae, commonly known as cassava, tapioca, mandioc, etc., using three methods as follows: (1) classical taxonomic methods, (2) genetics and (3) microbiological assays of the starchy products of the roots. In an effort to classify the varieties, and to give them correct nomenclatorial standing, the method of study will be that of an herbarium taxonomist, but with the added data available from studies of chromosome morphology and possibly from data as to the variation in production of vitamins utilizing the methods of microbiologists in assays of vitamins.

According to Pax and Hoffman (Pflanzenreich IV, 147, 1912) more than 97 varieties of the species M. utilissima have been named. These authors have made no attempt on the systematics of this complex since adequate material and data were not available to them at the time of their publication. The present status of work in the field is a complete absence of work in the field. There is no single published account of the varieties of Manihot utilissima, either using purely morphological methods, or those including genetic data, and none which have reported the vitamin content of the species. The methods of taxonomy, combining morphology and genetics for other plant groups are legion, the most outstanding work being that of Babcock on the genus Crepis. Several efforts

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have been made to correlate biochemical data with morphological data particularly employing electrophoretic techniques with proteins, these having some significance. The most closely associated work to the above proposal was made by Moyer (Am. Jour. Bot., 1934), using electrophoretic studies of the latex of several species of the genus Euphorbia. He made no effort, however, to correlate other data than had already been accumulated, nor to reclassify on the basis of his findings.

The objectives of this work are as follows (1) to classify the varieties of the species, (2) to provide a new tool for taxonomists in their efforts to be more exact in establishment of relationships, the tool being that of the microbiological assay which is relatively simple, and strikes at a point of fundamental significance in plant biochemistry--proteins and their basic role, (3) to establish the correct chromosome constitution of a group of plants which have been variously reported (counts ranging from n=4 to n=106, these two extremes have been questioned, but not thoroughly checked).

A further objective of this work is one of far-reaching possibilities, although beyond the immediate efforts named above. In view of the fact that there is an ever-increasing need for food supplies for the world's population, new food producing plants, capable of growing in regions not already in constant cultivation, must be found. Although Manihot utilissima is not new as a starch producing plant, it has never been subjected to modern methods of cultivation,

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except possibly in a few areas of Tropical America, and only a few times has it been tried in this country (see Fla. Dept. of Agric. ~~Expt~~ Quar. Bull. No. 167, ~~1930?~~ 1917) That it contains a useful product may be seen in the fact that it constitutes the chief form of starch for many natives of lowland tropical areas, and has found its way into the diet of many citizens of the United States as the commercial product "tapioca". Which varieties produce the most starch? Which have in addition satisfactory vitamin content? For that matter, what vitamin content do the varieties have? Can the varieties be grown in regions not already occupied with plants of proven value? The answers to such questions are a byproduct of the above experiment, if it be successful.

Procedure: As presently outlined, the work cannot be completed in less than 5-10 years, if all the aspects are properly correlated. The first year's work will be of an exploratory nature: literature search for all available data, particularly as to taxonomic status of the varieties; acquisition and construction of necessary equipment; an exploration in the field (South America, and particularly Brazil, is the center of distribution of the varieties, but the major emphasis of such field work will be primarily to contact workers in the countries visited in order to make possible new and continuing shipments of necessary stock for greenhouse cultivation); establishment of plants, learning their patterns of growth, their periods of growth and

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dormancy; search for technique of staining of chromosomes; establishing technique of microbiological assay, and determination of which assays will be most informative for taxonomic purposes. After the above correlations are made, it is anticipated that the routine analyses may be started.

The taxonomic methods of comparative morphology, utilizing specimens now maintained in the world's herbaria, integrating the data of distribution and ecology. With such slight differences as may occur between varieties, biometric studies may be necessary, but such is not contemplated at this time. Since both the genetic studies and the microbiological assays require a readily available supply of growing plants, as many varieties as possible will be brought into cultivation under optimum conditions in the greenhouse. In the genetic studies, the chromosome numbers of the somatic cells will be relied upon largely, although it is not expected that the chromosomes at meiosis will be ignored. With the reported variation in chromosome number, it is obvious that polyploidy is one of the factors involved in the complex, and an effort will be made here in understanding the evolutionary sequences.

Facilities: At present there are no major facilities available for the undertaking of such an experiment as outlined above. As for the strictly classical methods of taxonomy, little extra equipment is needed other than that presently on hand. A straight morphological attack, using only dried herbarium specimens requires little more space than can be

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found in most laboratories. The inadequacies of this material is evident, however, by even a casual glance through the collections of the country's most outstanding herbaria. Equipment is on hand, or can be constructed, for most of the microbiological assays. However, a first class research microscope for the genetic studies does not exist on the campus of Allegheny College. The highest powers available are the 900x of the student oil immersion lenses.

Personnel: At present, the only investigator involved is the principal, Rogers. Born in 1918 at De Funiak Springs, Florida, of native white citizens of the US, educated in the public school system in Florida through BS in botany at the University of Florida. Four and one half years of war service as artillery officer in combat division, plus other army odd jobs; master's and doctor's (PhD, 1951) at Washington University, majoring in systematics under Dr. R. E. Woodson, Jr., specializing for research in the Euphorbiaceae. Title of doctoral thesis: "A Revision of Stillingia in the New World", published in the Ann. Mo. Bot. Gard., 1951. Published also a short paper on a small genus of Phytolaccaceae: "Stegnosperma: A New Species and Generic Commentary", ibid, 1949. Worked as student assistant since under-graduate days as general botany lab. assistant and later in graduate school as herbarium assistant, greenhouse flunky and general handy-man in the Henry Shaw School of Botany of Washington University and at the Missouri Botanical Garden. The last year of Graduate

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school (1950-51), held University Fellowship. Spent three months in 1948 collecting general flora of small region in northeastern Mexico with F. G. Meyer. These specimens (600 numbers, 4000 plants) have been well received throughout the country and abroad. Studied under Dr. Edgar Anderson (genetics), Dr. Barry Commoner (physiology), Dr. Gustav Melqhuist (horticulture), Dr. Hampton Carson (cytology) and others. Worked for one summer at the herbarium of the Arnold Arboretum with Dr. Ivan Johnston and Dr. C. E. Kobuski. Present position--assistant professor of biology at Allegheny College, teaching general botany, bacteriology, a general education course, lab. methods for hospital technicians, histology, etc.

Head of Department, Dr. R. E. Bugbee, whose encouragement makes this application a reality. Valuable advice and assistance is expect from W. E. Curtis, PhD in physiology from Cornell University, 1952. His background of fundamental physiology, chemistry, and interest in the program are essential to its success. As yet, no permanent assistants have been approached. It is hoped, however, that an adequate salary might be made available as the research program progresses, for an assistant with at least an M. A. degree, particularly with matters of microbiological assays, as the principal investigator does not have this aspect as his primary training, although capable of instituting the program and following it through.

The whole program of research has been talored so that

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it dovetails with the requirements and program of a small, liberal arts college. It is anticipated that much assistance will be derived from undergraduate students whose interest in fundamental problems may lead them into some aspect or other of the program. An active research program is a great stimulus to these students, and beginning students can provide much of the necessary detailed analyses required in the above outlined program.

Budget:

(a) Salaries: one permanent assistant, starting the second year. The salary, $3500.00 if 3/4 time; $4000.00 if full time, per year.

3-5 undergraduate assistants, on same basis as other helpers, each $25.00-30.00 per month for school year, summer months included, if possible.

Total for average of 4 assistants, $1080.00 per year.

No extra salary for primary investigator.

(b) Permanent equipment:

Greenhouse, complete, $20,000.

Research microscope and light, $600.00.

Turbidimeter $50.00.

(c) Expendable equipment and supplies:

Soil, fertilizers, sprays, tubs, media, stains, and reagents, pencils, paper, slides, cover-glasses, etc., $1000.00.

(d) Travel:

$3000.00-5000.00 for exploration trip in South America

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(d) (Cont.)

(3-5 months).

(e) Other direct costs:

Express and parcel post for specimens: $500.00.

Gas for heat, water and lights $500.00.

Payment for collection of specimens in the field--$200.00.

(f) Indirect costs:

Estimated 10%, $3900.00.

At this moment, no other funds or contributions toward this work have been received. However, if any part of the above expenditures cannot be met by the National Sciences Foundation, it is expected that other organizations, both public and private will be approached.

David J. Rogers

David J. Rogers, Principal Investigator

Louis T. Benezet

Louis T. Benezet, President
Allegheny College

Robert E. Bugbee

Robert E. Bugbee, Chairman
Department of Biology

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1)

PROPOSED EXPENDITURES FOR PROJECT

PLANT + EQUIPMENT — £4000

Microscope	£700
Slides	300
Greenhouse Constr.	2000
Greenhouse Eqpt	1000
~~Pot~~	500
Fertilizer	200
Shovel	300

SALARIES — £20000

Assist Lab. Tech	15000
Student Assist	5000

FIELD TRIPS + TRAVEL — £10000

So. America	~~8~~000
U.S.A.	2000

~~OVERHEAD~~ — £500

Publishing

TOTAL — 70,000

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2)

ANNUAL EXPENDITURES FOR PROJECTS

1st year
~~1952-53~~

$27,000

Field Trip	$7000
Greenhouse	20 000

2d year
~~1953-54~~

6,250

Material Greenhouse	1000
LAB. ASSST	4000
Student Assist	1000
Overhead	100
Travel	125

3d year
~~1954-55~~

etc.

4th year
~~1955-56~~

etc.

5th year
~~1956-~~

etc.

$5000

Annual exp.
necess. to keep NSB [illegible]
project [illegible]

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QUESTIONS

① HOW DID YOU ARRIVE AT FIGURES? BY CHECKING AGAINST SPECIFIC EXPERIENCES OF OTHERS?

For eg, AIR TRAVEL TO S.A.

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Nelson Rockefeller + Point Four

Washington –
Bennett – Tech. Coop. admins., Mut Sec. Adm
State Dept.

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AMERICAN PHILOSOPHICAL SOCIETY
held at Philadelphia
for Promoting Useful Knowledge

104 South Fifth Street
Philadelphia 6, Pa.

February 10, 1953

Professor David J. Rogers
Allegheny College
Meadville, Pa.

Dear Professor Rogers:

We are in receipt of your application and will see that it is brought to the attention of the Committee on Research at its April meeting.

Very truly yours,

J. A. Hoonan

Assistant Secretary.

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The importance of Manihot utilissima Pohl, commonly known as tapioca, yuca, manioc, mandioca, etc., as a plant of basic agricultural value in tropical agriculture and temperate economy is becoming more and more evident. This plant, known to have been an important source of starch in tropical American before the coming of the Spaniard has long been cultivated, but never fully classified. Today, the condition of the study of manioc, with respect to knowledge of its varieties, occupies the same position as that of corn some forty to fifty years ago. Before much more progress can be achieved in raising the starch producing qualities, as well as improvement of the nutritional value of the foliage, a basic understanding of the variation must be obtained.

The objective of this investigation is primarily to establish a sound classification of the variation existing within the species Manihot utilissima. M.xutilissima and M.xesculenta The nomenclature is not definitely established even for the specific epithet, M. utilissima and M. esculenta being the most frequently used names for the same species. Some confusion exists concerning the specific limits, and many names have been proposed which may or may not be valid. No comprehensive study of this extremely variable species exists; local populations have been studied in some detail, but largely from the standpoint of agronomy, without thought of inter-relationships, evolution, or center(s) of origin. It is the purpose of this investigation to consider these factors, utilizing data from whatever source obtainable, but the fundamental investigation will be that of comparative morphology and standard herbarium methods.

Preliminary studies of existing herbarium specimens demonstrates the basic need of field studies and collection of material suitable to begin an intensive study of the variation. A three months collecting trip to Jamaica and Costa Rica, where some studies of local varieties have already been made will materially advance this project, although these two areas do not represent what is considered the center of origin of the species. Time limits prevent planning an exploration trip to Brazil, but it is hoped that collaborating scientists in Brazil will furnish some specimens from the more important areas. Collaboration has already been promised from several scientists in Brazil.

Budget.

Perdiem:	$6.00 per day, 100 days, June 7-Sept. 15, 1953	$600.00
Travel:	1. by auto to Miami, Florida and return, 6¢ a mile, 2400 miles, (from Meadville, Pa.)	144.00
	2. by plane from Miami to Kingston, Jamaica, San Jose Costa Rica and return to Miami	175.00
	3. Parcel post shipment of specimens to Meadville	50.00
	4. Camera supplied, black and white and color	45.00
	Total	$1014.00

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4.a. Procedure to be followed:

1. Collection of specimens in Jamaica and Costa Rica.
2. Establish experimental plots under supervision of experimentx stations in these two countries. (This cooperation has been assured.)
3. Detailed analysis of specimens collected upon return to this country.
4. Request cooperating scientists in Brazil, Paraguay, Columbia, Equador, Peru, Trinidad and Puerto Rico to send specimens for culture to established experimental plots in Costa Rica and Jamiaca., and dried specimens for further study in this country.
5. Methods of analysis include techniques of analysis described by E. Anderson in his various works on experimental taxonomy, study of nomenclature of species, keys to the varieties, and detailed morphological descriptions of the entities (taxa) which appear.

4.b. Expected duration of investigation: 12 months.

4.c. Proposed method and means of publication: progress reports to be reported in Bulletins of tropical American experiment stations. Final analysis of variation (not included in this preliminary study) to be reported in a reputable journal of which normally accepts works of a taxonomic nature, either in this country or in Latin America.

5. Amount and nature of institutional contributions toward this work:
No direct grants in aid have been received, but the administration has granted me three months's leave to be able to participate in this project, and to continue my salary during these months. (we are paid on a tw elve month's basis.

6. Previous grants: none
Grants now available: none, but assurance of small amount of assistance from Dr. E. Anderson and the Missouri Botanical Garden (perhaps $100.00).
Other applications for grants now pending: none.

7. Names and addresses of three individuals
   1. Dr. E. Anderson, Assistant Director, The Missouri Botanical Garden, 2315 Tower Grove Ave. St. Louis, Mo.
   2. Dr. A. C. Smith, Curator ~~of the Herbarium~~, U.S. Natl. Herbarium, Smithsonian Institute, Washington, D.C.
   3. Dr. Claud Horn, Office of Foreign Agriculture Relations, USDA, Washington, D.C.

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AMERICAN PHILOSOPHICAL SOCIETY
held at Philadelphia
for Promoting Useful Knowledge

104 South Fifth Street
Philadelphia 6, Pa.

January 30, 1953

Dear Sir:

As requested we are sending you herewith two application forms in which you can apply for a grant for research, together with a copy of the General Principles. You should give careful consideration to the latter in making your application, noting especially whether your project is in accordance with these Principles.

Your particular attention is called to #3 a on the enclosed application form. Frequently, applicants do not send in a detailed budget as requested. In connection with #8 on page 2 of the form, you are to list your leading publications in this particular field of research.

We are enclosing four forms to be sent by you to persons competent to pass judgment upon your project. It is important that each of these persons should have knowledge of the particular research for which the grant is requested. You should fill in the two blanks on the top of these forms. In addition, you are to send to each of these persons a statement of your proposed research including the budget and send this office a copy of your statement. The names of the persons to whom you are sending these forms should be listed under #7 on page 2 of the application form.

It is important that you ask each of these persons to send this information to this office promptly, otherwise the Committee may delay the consideration of your application if this information is not available.

The Committee on Research meets five times a year, namely, early in February, April, June, October and December. An application must be in this office at least one month in advance of the meeting at which it is to be considered.

Very truly yours,

L.P. Eisenhart

L.P. Eisenhart
Executive Officer.

P.S. Applications to be considered at the April meeting should be in this office on or before March first.

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David J. Rogers

Guggenheim

Plans for Research for Study of Variation of Manihot utilissima

The purpose of this study is twofold: (1) to provide a sound classification for the several hundred varieties of Manihot utilissima now in cultivation in many parts of the tropical world and (2) to investigate the influence of man's acitivites in relation to speed of evolution. With relation to the first purpose, the present state of knowledge concerning the varieties is chaotic, and any efforts made toward improvement of one of the world's largest sources of starch are frequently found to meet with little success since no knowledge of the inherent relationships between the varieties exists. Recent investigations further show that in addition to the starch content of the root, the young foliage of these plants contains a relatively high percentage of protein. If this protein be of significant nutritive value, then more reason to obtain knowledge about which varieties contain the most, or the best percentage.

Concerning the second aspect or purpose of this project, too few studies of Man's effect on speed of evolution have been made. The large crops of wheat and corn, cotton, tobacco and a few others have had significant studies made on them. This study is an effort to improve our knowledge of such effects. Like most of man's food plants, Manihot utilissima has been in cultivation for a very long period, but comparatively speaking the great variation exhibited by today's plants is recent. Only after the exploration in the New World by European travelers was the crop distributed throughout the world's tropical lands with the result of a large increase in the number of variants.

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Present status of project (including some methods employed)

As a result of my activities during the months June-September, 1953, the following has been accomplished. (1) Experimental plots in two localities in Jamaica have been established with the cooperation of the Department of Agriculture. In Jamaica, all local variations are being planted in order to determine the extent of environmental control of certain characteristics, one of which is the presence or absence of a poisonous principal, hydrocyanic acid. (2) Introduction garden or museum plots for all varieties from all areas of the tropical world have been established at the Inter-American Institute of Agricultural Sciences at Turrialba, Costa Rica. Propagating materials of these variants have been requested from a number of widely scattered sources, and with luck, some of the varieties should be coming into Turrialba now. (3) Dr. Nevins Scrimshaw, of the Institute of Nutrition for Central America and Panama, at Guatemala City, Guatemala, is beginning assays of certain varieties for content of starch, protein, and vitamins in certain varieties. (4) The process of analysis of population samples made during the three month period is now in progress with the idea of providing a basis for the study when sufficient samples have been obtained.

Beyond the two areas where work is in progress, it is difficult to state exactly where work will be done. Analysis of the plants in the experimental plots in Jamaica and in Costa Rica makes it imperative that I return to these two areas for at least part of the time. However, these two areas represent only the edges of the most intensive cultivation of the crop, and it is essential that I spend time in several areas of Brazil, Peru, Columbia and Venezuela and perhaps other countries. It is expected, however, that I will divide my time nearly equally between Costa Rica, Brazil and Jamaica, with only short visits to the other countries mentioned.

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The authorities with whom this project will be undertaken will be those which are already cooperating, namely the Jamaican Department of Agriculture at Kingston, and the Inter-American Institute of Agricultural Sciences at Turrialba, Costa Rica. Perhaps other agencies will be involved, particularly the Technical Collaboration Branch, Foreign Agricultural Service, USDA, which already has been of great assistance in the program.

The part of the program for which the grant is requested will begin some time in June of 1954, and will continue through January of 1955. It is anticipated that I will have a leave of absence from Allegheny College for the first semester of the school year 1954-55, for which period, I will receive no salary.

It is difficult to predict the date of completion of this project, but I do not expect that it will be done in under five years. This figure is based upon the little experience I have had in dealing with peoples in tropical areas.

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Allegheny College, Meadville, Pennsylvania

Principal Investigator: David J. Rogers

Title of proposed research: Studies in the variation in Manihot utilissima.

Description of proposed research:

Basically this is a problem of botanical taxonomy with an emphasis on studies of inter- and intraspecific variation. The objectives are as follows:

1. To organize a systematic body of knowledge concerning the large numbers of variants which exist in the complex known as Manihot utilissima.

2. To determine some of the effects of man's influence on the evolution of plants.

3. To provide a method by which agricultural scientists may more accurately select plants for greater yield, disease resistance, etc.

The present state of knowledge concerning the variation of Manihot utilissima and related species is difficult to define in that there is no such work of a general character in progress, other than the present study. There have been, however, two local publications on the varieties, one in Brazil (Zehntner, 1919) and one in Paraguay (Michaelovsky, 1953). These two works have been done with varieties in cultivation in the two countries mentioned, and these make no effort toward evaluating evolution of the species, nor have they made an effort to define the total variation which is possible within the species.

Field studies of the present work have shown some progress in establishment of working keys to the variants already analyzed. Although the variants so far examined have been those only of Jamaica and Central America, it is felt that these represent a sufficiently wide range to provide a framework for the larger numbers of clones occurring throughout the tropical areas of the world. It is premature, however, to make any evolutionary inferences, to suggest points of origin, or ancestral forms.

Procedure:

Work is at present under way for this project. In 1953, local clones occurring in Jamaica were brought together in two stations of the Department of Agriculture. Altogether, 107 different named clones were established with six plants of each clone at each of the stations. In June-July, 1954, these clones were sampled, utilizing techniques to adequately sample populations. Standardized photographs, herbarium specimens of selected portions of the plants, morphological, ecological, and where possible, ethnological data were made and recorded. The raw field data will be analyzed as soon as possible.

Upon completion of field work in 1954, rough comparisons were made and all clones were replanted, this time increasing the number of plants of each clone from 6 to 12, and planting together those clones which seemed most nearly alike according to various vegetative characteristics. The increase in number provided some additional data as to variation within clones and, when the plants are mature (about 18 months) should give a more adequate picture of the best clones for agriculture.

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In July, 1955, the plants were reexamined, and from comparisons, the number of clones was reduced to 48, which represent the total real variation existing in the plots at the Bodles Experiment Station, Jamaica. Unfortunately, the plan of interchange between the two stations was impossible. Several factors combined to prevent growth of the plants at the Grove Experiment Station. Severe insect infestation and a prolonged drought set back the plants to such an extent that it was decided to leave the present planting alone for at least one more year. Real progress was achieved, however, in that two or three characters of taxonomic significance appeared as a result of this most recent examination.

In Turrialba, Costa Rica, on the grounds of the Inter-American Institute of Agricultural Sciences, an introduction garden for variants from all parts of the world has been established. Through the efforts of Dr. Jorge Leon, locally occurring clones had already been assembled, and through personal efforts, several additional clones from Jamaica, Nicaragua, and Costa Rica were added to the collection. In July-August, 1953, some preliminary examinations were made. It was planned to have clones from other South and Central American countries introduced, but due to numerous reasons, most of these plans were unsuccessful. For example, a shipment of cuttings from Paraguay arrived about two months after shipment, completely useless as propagating material. Apparently some mix-up occurred in shipping arrangements although sent by air freight. In June, 1955, a return visit was made to the Institute, but the clones had been neglected to such an extent that only 35 clones were in good condition for examination. These were studied according to the program outlined in a previous paragraph. In all fairness, it is necessary to say that the neglect was not intentional, nor desired by the staff at the Institute. Funds were not available to pay for a sufficient amount of care for these plants in addition to the already heavy load of work required of the staff. It is apparent that I must furnish sufficient money to pay for this care rather than put further demands upon the budget of the Institute.

Additional efforts will be made during the coming year to have more clonal material sent to Turrialba from various regions of South America. It is hoped that through the cooperation of Catholic missions in various areas, more success will be achieved. This again will have to be financed by my own means. Further efforts will be made to get governmental departments to cooperate in this project, such as the Department of State (to facilitate shipment), the Department of Plant Exploration and Introduction of the USDA, and various Departments of Agriculture of Central and South America. Since at least two years are required for production of sufficient material to study, no return to Costa Rica is anticipated until at least 1957.

However, a sufficient amount of herbarium material and raw data have been assembled over the past three years to make it possible to spend some time in studying and assembling these data.

Facilities:

Allegheny College's Department of Biology is adequately equipped to handle the work. The only additional requirement is adequate storage space for herbarium specimens.

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Personnel:

a. Biographical sketch of the chief investigator

Age: 36, born October 19, 1918
Place of Birth: De Funiak Springs, Florida
Parents: Both native citizens of the US, father deceased; mother living, retired from the University of Florida
Health: Excellent, wear glasses, vision corrected to 20/20; no deformities.
Marital Status: Married. three children, ages eight, six, and six months.
Education: High School, Walton High, De Funiak Springs, Florida.
BS, University of Florida, Gainesville. Major: botany, systematic and general, Minor: soils. graduated 1941.
MA, PhD, Washington University, Henry Shaw School of Botany.
Major: systematic botany. Research in systematics of flowering plants, specialty: Euphorbiaceae. Doctoral Dissertation: "A Revision of Stillingia in the New World." Graduated 1951.
Army: Active service as Field Artillery officer, 1941-1945, released from active service with rank of Captain, was awarded Silver Star and Purple Heart decorations for action in North African Theater of Operations.
Experience: In addition to administrative and teaching positions in the army, was student assistant in major courses since undergraduate days. Present position begun in September, 1951. Assistant Professor 1951-1955; Associate Professor 1955- . Teaching general botany, general and pathogenic bacteriology, staff member of general education course (Organism and Environment), histology, field botany, morphogenesis and special problems in biology.
Research: Field work in Mexico (state of Nuevo Leon and Tamaulipas, general plant collections with Fred G. Meyer, summer of 1948, sponsored by the Missouri Botanical Garden). Present project of research in variation of Manihot utilissima begun in 1953 with field work in Jamaica and Costa Rica in summer of 1953, supported by American Philosophical Society and Allegheny College. Summer 1954, six weeks in Jamaica, summer 1955, NSF Grant G 1309.
Present Position: Associate Professor of Biology, Allegheny College, Meadville, Pa.
Publications: 1. Stegnosperma: A New Species and a Generic Commentery, in Ann. Mo. Bot. Gard. 36: 475-477, 1949
2. A Revision of Stillingia in the New World, in Ann. Mo. Bot. Gard. 38: 207-259, 1951
3. Variation in Manihot utilissima and related spedies, in Yearbook of Am. Phil. Soc., 166-168, 1953

b. Additional Personnel:

As much as possible undergraduate assistants will be utilized. At the present moment, only one student is available, but am hoping to have at least two undergraduates assisting in work on some of the routine investigations. The one I have chosen is a junior biology major, with specific interest in botanical sciences. Her ability is much above the average.

Two laborers at Institute Turrialba, Costa Rica.

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Budget:

a. Salary of principal investigator	
$550.00 per month for two months(July-August, 1956)	$1100.00
b. Salary for assistant:	
1 student assistant at $35.00 per month, 9 months	315.00
2 laborers at Institute, Turrialba, at $600.00 per year each two years	2400.00
c. Permanent equipment	
One steel herbarium case	172.00
d. Expendable equipment and supplies.	
Herbarium boxes for bulky specimens, 500 @ $1.00 per box	500.00
e. Travel	
Meadville, Pa. to Washington, D.C., Round trip, for library and research work.	60.00
Per diem during travel at $12.00 per day, 10 days	120.00
f. Other direct costs:	
Assistance to agents for sending propagating material to Costa Rica	300.00
g. Indirect costs	745.00
	$5712.00

1500
.10
1500.0

12
10
$108.0

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NOTICE OF RESEARCH PROJECT

BIO-SCIENCES INFORMATION EXCHANGE

SMITHSONIAN INSTITUTION

NOT FOR PUBLICATION OR PUBLICATION REFERENCE

PROJECT NO. (Do not use this space)

GS-502

NSF-1309

SUPPORTING AGENCY: National Science Foundation NSF 2327 C12 C2

TITLE OF PROJECT:

Variation in Manihot Utilissima

Give names, departments, and official titles of PRINCIPAL INVESTIGATORS and ALL OTHER PROFESSIONAL PERSONNEL engaged on the project.

Dr. David J. Rogers - Asst. Prof. of Biology, Dept. of Biology

NAME AND ADDRESS OF INSTITUTION:

Allegheny College, Meadville, Pennsylvania

SUMMARY OF PROPOSED WORK— (200 words or less — Omit Confidential data.)

In the Bio-Sciences Information Exchange summaries of work in progress are exchanged with government and private agencies supporting research in the bio-sciences and are forwarded to investigators who request such information. Your summary is to be used for these purposes.

SUMMARY SAME AS THAT PROVIDED FOR ALLEGHENY COLLEGE ACCESSION NO. 125

1. Purpose of Study
   a. To clarify the taxonomy of the species Manihot utilissima.
   b. To describe the variation existing within the species.
2. Methods
   a. Primarily a morphological taxonomic study employing classical methods and newer techniques for delimiting minor variance within a species.
   b. Herbarium material is prepared from samples grown in "museum plots", with photographs against a standardized board showing habit of plant and a few close-up details.
   c. "Museum plots"maintained in Jamaica and Costa Rica where local and introduced clones are grown with at least six plants of each clone.
   d. In Jamaica, duplicate plantings in differing environmental conditions to determine stability of vegetative characteristics.
   e. Chemical analyses of carbohydrate content, HCN content of roots and young foliage, and analysis of total content of crude protein in young foliage. This data employed primarily as a method supplementing the morphological data of clones.
3. Discussion

   The procedures above outlined have been done in cooperation with Departments of Agriculture in the two countries mentioned. A great amount of information important to agronomists will be obtained incidental to major purpose. It is intended that this work will finally encompass the total range of variation of the plants in this species complex.

   Although ethnographic, anthropological, and archeological data are not being specifically gathered in the major studies, the information concerning the utilizations of the plant and its products and prehistorical records will provide important clues as to the kinds of plants of a particular area and will be of value in total correlation of information.

SIGNATURE OF PRINCIPAL INVESTIGATOR

Identify the Professional School (medical, dental, public health, graduate, or other) with which this project should be identified:

SCHOOL

Submitted August 1955

INVESTIGATOR—DO NOT USE THIS SPACE

Grant No.	Period of Operation	Amt. Approved
GS-502	1/55 - ~~1/56~~ 3/56	$2,500
502 C1	3/56 - 3/57	4,000
502 C2	3/57 - 3/58	4,000

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ALLEGHENY COLLEGE
MEADVILLE, PENNSYLVANIA

OFFICE OF THE PRESIDENT

March 16, 1953

Dr. David J. Rogers
Allegheny College
Meadville, Pennsylvania

Dear Dave:

I am happy to tell you that the Committee on Summer Study Grants at its meeting on Saturday, March 14, voted to award you a grant of $600 to pursue research essential to your professional development during the summer of 1953.

We understand this money will be used to defray travel, living, and professional expenses in making field studies in Latin America and the Caribbean area on the plant, Manihot Utillissima. We are aware that it will not defray all the expenses of this projected trip.

By the terms of the agreement you are requested to make a report to the president at the conclusion of the summer telling what has been accomplished in terms of your project.

I am happy that this grant is possible because it would not be overstating the case to say that your professional advancement and tenure in the Department of Biology at Allegheny College will be largely effected by your ability to enlarge your teaching scope through this type of productive research during the non-teaching periods.

Sincerely yours,

Louis Benezet

Louis T. Benezet

LTB/ba

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To: Dr. Benezet

From: David J. Rogers

Application for Faculty Summer Study Grant

1. This application is submitted in order to further my research project entitled "A Study of the Varieties of Manihot Utilissima". Funds are needed in order to facilitate field work, assist in the procurement of equipment and to help meet incidental costs which are difficult to anticipate.

2. The purpose of this study is to provide a sound classification for the more than two hundred varieties now in cultivation in many parts of the tropical world. The present state of knowledge concerning these varieties is chaotic, and any efforts made toward improvement of one of the world's largest sources of starch (after corn, wheat, and potatoes) are frequently found to meet with little success since no knowledge of the inherent relationships between the varieties exists. It is an essential feature of such a study to get to know the plants as they are grown in their natural habitats. Having been involved with the study of the general group of plants to which Manihot is related, I have had a sufficient background of knowledge to make this study one of some merit. Unfortunately, none of the varieties are now grown extensively in this country, although some of them are cultivated as curiosities in greenhouses in various institutions of this country.

Some progress has already been made in this study through cooperative efforts of a number of workers in Central and South America. I have made plans to establish experimental plants in Jamaica and in Costa Rica, two countries whose economies are rather closely tied to the production of the starch from Manihot. It is my plan to spend some time in these two countries this coming summer in order to make final arrangements for cultivation of varieties from all over the world under similar environmental conditions. In addition, there are some forty eight varieties which exist in these two countries alone, which will allow some basic progress while there.

Once the pattern of variation is established through field studies, integration of data, and publication can be accomplished in the environmental conditions which exist in Meadville.

It is not anticipated that the study will be completed at the end of the summer. This is a long-term project, but one which will, I have no doubt, be of ultimate value.

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MEMORANDUM

TO: Members of the Faculty

FROM: L. T. Benezet _____ Date: February 24, 1953

RE: Faculty Summer Study Grants

We have had the good fortune to receive from the General Board of Education of the Methodist Church in Nashville a grant of $2,000 annually for the next two years which is to be matched by $1,000 each year from the College. There are indications that this matching amount likewise can be solicited from a small charitable foundation.

The purpose of the grant, as we requested it, is to aid faculty members toward finishing graduate studies or engaging in scholarly productivity during summer weeks. The amount available will enable us to award five or six small grants yearly. Those grants for post-graduate research may need to be larger than the others on account of their susceptibility to income tax, (e.g., two research grants at $600 each less $100-120 tax; four graduate study grants at $450 each: equals $3,000).

Discussion of the grants with the Faculty Council has produced the following suggestions, on the first of which direction will be asked at our next faculty meeting:

(1) A committee of faculty will meet with the president and dean of instruction in supervising Faculty Summer Study Grants. Proposed appropriate committees are the Faculty Council itself; the Committee on Graduate Studies; the Committee on Instruction; or a new ad hoc committee.

(2) Faculty wishing to apply for a Faculty Summer Study Grant should submit applications to the president within the next ten days (closing date, Friday, March 6) stating purpose of contemplated study, location, period of time, nature of work, etc.

(3) All applicants will be notified of the outcome on or before Monday, March 16.

(4) Applicants awarded grants will prepare a report at the end of the summer concerning work accomplished.

(5) A faculty member will not be eligible for a grant two years in succession unless there are no other faculty who apply. This is to assure that the help will be passed around as much as possible.

The committee judging applicants will decide on the basis of all applications each year how many graduate study grants and how many post-graduate research grants should be allocated to expend the total available $3,000.

A plan similar to this was suggested by the faculty as long as seven years ago. This is the first time that specific funds have been located to make the program possible.

L.T.B.

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April 16, 1953

Dr. R. E. Kremers
Research Associate
General Foods Corporation
Hoboken, N.J.

Dear Dr. Kremers:

Enclosed is my application for a General Foods grant in aid.

I think you will recall my visit of last August when I talked to you about the possibilities of research on the varieties of Manihot utilissima. Since that time, I have received a small grant from the college which will assist me in my field work this coming summer.

It has been necessary to change my project to some extent from the rather extensive outline which I gave you during my visit. My present project requires the cooperation of the departments of agriculture in Jamaica and Costa Rica in providing experimental plots for growing as many of the world's varieties as is possible. My objective in this project remains the same as that stated in my original project.

In light of your suggestions as to the extent which General Foods could assist in such a project, I have limited my request to specific pieces of equipment which will be useful in this study. I trust that this application will not be unreasonable.

Yours very truly,

David J. Rogers
Assistant Prof. of Biology

Encl.: 1

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GF

GENERAL FOODS CORPORATION

RESEARCH AND DEVELOPMENT DEPARTMENT

CENTRAL LABORATORIES — 11th & HUDSON STS., HOBOKEN, N. J.

July 18, 1952

Professor David J. Rogers
Department of Biology and Geology
Allegheny College
Meadville, Pennsylvania.

Dear Professor Rogers:

Thank you for your inquiry of July 9th. In response, I am enclosing a brief statement about the nature of our modest program in support of academic research. To facilitate your bringing your ideas to our attention, I am also enclosing a form for an application. In this application, just a brief but specific description of your researches is desired. If there are questions of details, objectives or the like, we can take those up later.

Yours very truly,

R. E. Kremers

R. E. Kremers
Research Associate

REK:mh
Encs.

Baldwin - Director
Meyer -

Application sent 4/16/53
for $426.00 for mike

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GENERAL FOODS CORPORATION FELLOWSHIPS

Since 1941, General Foods Corporation has contributed to basic research in the food field through its founder membership in The Nutrition Foundation. More recently the corporation has further manifested its interest in the natural sciences and engineering by initiating a program of fellowships and grants in aid for research. To this end, it has created a new fund as part of the budget of its Central Laboratories Division, which is charged with administering the program.

To receive support from this fund, researches must be pertinent to the activities of General Foods Corporation but at the same time they must be sufficiently broad in nature to benefit the public and to further the development of scientific education in the United States. Researches to which support has been granted include: "cold sterilization" of foods, at M.I.T.; the agricultural significance of trace elements, at the University of New Hampshire; spray drying engineering, at the University of Wisconsin; carton design, at The Institute of Paper Chemistry. The new program is in addition to fellowships sponsored by divisions of General Foods Corporation, such as that on the physiology of the maple tree at the University of Vermont.

R. E. Kremers

July 18, 1952

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FELLOWSHIP APPLICATION FORM

JOHN SIMON GUGGENHEIM MEMORIAL FOUNDATION

551 FIFTH AVENUE • NEW YORK 17 • N • Y •

APPLICATIONS and accompanying documents should reach the office of the Foundation not later than October 15 of each year.

In what field of learning, or of art, does your project lie? Systematic botany

Concise statement of project A study of the variation occurring in the species Manihot utilissima and related species (variously called tapioca, mandioca, etc.). The project calls for a continuation and expansion of one now in progress in which as many of the variants from all tropical regions are brought together under uniform growing conditions to determine range of variation and basic taxa involved, utilizing modern taxonomic methods.

PERSONAL HISTORY:

Name in full David James Rogers

Present address Allegheny College, Meadville, Pennsylvania

Telephone 43251 Ext. 286

A permanent address Same

Present occupation Assistant professor of biology

Place of birth De Funiak Springs, Florida Date of birth October 19, 1918

If not a native-born American citizen, date and place of naturalization

Single, Married, Widowed, Divorced Married

Name and address of wife or husband Mrs. Constance F. Rogers, 632 Madison Ave., Meadville, Pa.

Name and address of nearest kin, if unmarried

Ages of children, if any 7 & 4

Have you any constitutional disorder or physical disability? No

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EDUCATION:

1. Give a summary of your education in the following form:

	Name of Institution	Period of Study *(give dates)*	Degrees, Diplomas, Certificates *(give dates)*
Academic: College	University of Florida	1937-41	BS in Botany
	Washington University	1947-51	MA, PhD
University			
Technical			
Professional	US Army	1941-45	Capt.
Musical			
Artistic			
Special Study			

2. Give a list of the scholarships or fellowships you have previously held or now hold, stating in each case the places and periods of tenure, the studies pursued during your incumbency, and amounts of the stipends: University Fellow, Washington Univ. 1950-51 systematic botany, $1000.00 Grant-in-aid Allegheny College, Meadville, Pa., ~~1950~~, preliminary investigation on Manihot utilissima and allied species, Jamaica and Costa Rica June-Sept., 1953 stipend $600.00, and grant from American Philosophical Soc. for like period and purpose, $750.00.

3. State what foreign languages you have studied and whether you are able to consult works on your subject in those languages. Estimate your proficiency in reading, writing and speaking each:

French, read well, speak poorly

German, read, with aid of dictionary

Spanish, read, speak and write poorly

Please attach here a small recent photograph

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ACCOMPLISHMENTS:

1. Positions held (professional, teaching, scientific, administrative, business):

Name of Institution or Organization	Title of Position	Years of Tenure *(give dates)*	Compensation
Allegheny College	Ass't. Prof. Biology	1951-53	$4300.00
US Army	Co. Commander	1943-44	$4800.00

2. Of what learned, scientific or artistic societies are you a member? Sigma Xi, Am. Soc. Plant Taxonomists

3. Submit a full account of the advanced studies and research, or artistic creation, you already have accomplished, giving dates, subjects, and names of your principal teachers in your field. What are your present attainments in your proposed field of study? (Please submit two copies.)

4. Submit a *list* of your publications with exact titles, names of publishers, and dates and places of publication. (Please submit two copies. Do not send us publications or manuscripts.)

Note to candidates in the fields of the fine arts, creative writing and musical composition:

An applicant in the field of the fine arts should submit two copies of a detailed account of his or her entire career as a student of art and as a creative artist. Please list public exhibitions, with names of items shown and dates and places of exhibitions. Also please list prizes and honors won, important purchases, *etc.*

Similarly an applicant in the field of creative writing should submit two copies of a detailed account of his or her student and creative career, including a list of published works, with names of publishers, and dates and places of publication.

Similarly an applicant in the field of musical composition should submit two copies of a detailed account of his or her student and creative career in musical composition, including a list of public performances, with names of orchestras and conductors, and a list of published compositions, with names of publishers and dates and places of publications.

PLANS FOR RESEARCH OR ARTISTIC CREATION:

Submit a statement giving detailed plans for your use of a Fellowship if it be awarded to you. This statement should include, *inter alia:* a description of the project, including its character and scope, and the significance of its presumable contribution to knowledge, or to art; the present state of the project, time of commencement, progress to date, and expectation as to completion; the place or places where the study would be carried on, and the authorities, if any, with whom it would be done; your expectation as to publication of the results of your study; and your ultimate purpose as a scholar or artist. *This statement should be complete and carefully prepared.* Please submit one more copy of these PLANS than the number of your references.

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If awarded a Fellowship: Where do you plan to study? Brazil, Costa Rica and Jamaica

When would you wish to commence the study proposed? June 15, 1954

What is your estimate of its probable duration? Five to ten years

REFERENCES:

Submit a list of names of persons from whom confidential information may be obtained concerning your abilities, especially in relation to your proposal for the use of a Fellowship, and from whom expert opinion may be obtained as to the value and practicability of your project. (All statements by references to the Foundation are held strictly confidential.)

Name of Reference	Position	Address
Dr. Ralph H. Allee	Director	Inter-American Institute of Agricultural Sciences, Box 47, Turrialba, Costa Rica
Dr. Frederick L. Wellman	Regional Consultant in Plant Pathology	Same address as above
Dr. Edgar Anderson	Assistant Director	Missouri Botanical Garden 2315 Tower Grove Ave., St. Louis 10
Dr. Carl O. Sauer	Chairman, Dept. Geography	Univ. of Calif., Berkeley
Dr. Claud Horn	Director, Techn. Coll.Br.	For. Ag. Serv., USDA, Washington, D
Dr. Charles B. Heiser, Jr.	Assoc. Prof. Botany	Dept. of Bty, Univ. of Indiana, Bloomington.
Dr. John H. Davis	Prof. of Botany	Univ. of Fla., Dept. of Bty, Gainesville.

If you have applied or expect to apply elsewhere for any fellowship or scholarship for the same period, state the facts regarding such applications: Expect to apply to USDA for assistance in travel funds, but none for fellowship or scholarship

If you apply elsewhere for any fellowship or scholarship after presenting this application, please notify the Foundation immediately.

SIGNATURE

PLACE AND DATE OF MAILING

SUGGESTIONS CONCERNING APPLICATIONS

1. If convenient, please type application and additional material.
2. Use paper the size of this sheet, 8½" x 11", if possible, for writing all documents submitted.
3. Every page or document submitted must bear the applicant's name plainly written.
4. Whenever the space provided in this form is not suitable for an applicant to present fully the facts of his or her case, it is requested that they be stated in a separate document.
5. Only one copy of the application form should be submitted to the Foundation by the applicant; the other may be retained by him for his own files.
6. It is suggested that applications and accompanying documents be sent by registered mail, addressed to the John Simon Guggenheim Memorial Foundation, 551 Fifth Avenue, New York 17, N. Y.
7. If you do not get a receipt for your application within a reasonable time, please notify the Foundation.

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JOHN SIMON GUGGENHEIM MEMORIAL FOUNDATION

. Memorandum to Applicants .

1. The average number of references named by applicants is seven -- which means that eight copies of plans for study should be provided if an applicant's references number seven. If, however, applicants submit hectographed or mimeographed plans for study, we should like to get a dozen copies. Applicants who submit more than twelve names should, of course, submit one more plan than the number of references.

2. Similarly, if applicants have hectographed or mimeographed statements of their records, we should like a dozen copies, please.

3. If candidates have hectographed or mimeographed lists of their publications, we should like to get a dozen copies of such lists, also.

JOHN SIMON GUGGENHEIM MEMORIAL FOUNDATION
551 Fifth Avenue . New York City

Dr. David James Rogers

Receipt is acknowledged of your application for a Fellowship. Awards for 1954-55 will be made in April, 1954, and you will then be notified by letter of the action taken on your application.

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Plans for Research for Study of Variation of Manihot utilissima

The purpose of this study is twofold: (1) to provide a sound classification for the several hundred varieties of Manihot utilissima now in cultivation in many parts of the tropical world and (2) to investigate the influence of man's acitivites in relation to speed of evolution. With relation to the first purpose, the present state of knowledge concerning the varieties is chaotic, and any efforts made toward improvement of one of the world's largest sources of starch are frequently found to meet with little success since no knowledge of the inherent relationships between the varieties exists. Recent investigations further show that in addition to the starch content of the root, the young foliage of these plants contains a relatively high percentage of protein. If this protein be of significant nutritive value, then more reason to obtain knowledge about which varieties contain the most, or the best percentage.

Concerning the second aspect or purpose of this project, too few studies of Man's effect on speed of evolution have been made. The large crops of wheat and corn, cotton, tobacco and a few others have had significant studies made on them. This study is an effort to improve our knowledge of such effects. Like most of man's food plants, Manihot utilissima has been in cultivation for a very long period, but comparatively speaking the great variation exhibited by today's plants is recent. Only after the exploration in the New World by European travelers was the crop distributed throughout the world's tropical lands with the result of a large increase in the number of varients.

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Present status of project (including some methods employed)

As a result of my activities during the months June-September, 1953, the following has been accomplished. (1) Experimental plots in two localities in Jamaica have been established with the cooperation of the Department of Agriculture. In Jamaica, all local variations are being planted in order to determine the extent of environmental control of certain characteristics, one of which is the presence or absence of a poisonous principal, hydrocyanic acid. (2) Introduction garden or museum plots for all varieties from all areas of the tropical world have been established at the Inter-American Institute of Agricultural Sciences at Turrialba, Costa Rica. Propagating materials of these variants have been requested from a number of widely scattered sources, and with luck, some of the varieties should be coming into Turrialba now. (3) Dr. Nevins Scrimshaw, of the Institute of Nutrition for Central America and Panama, at Guatemala City, Guatemala, is beginning assays of certain varieties for content of starch, protein, and vitamins in certain varieties. (4) The process of analysis of population samples made during the three month period is now in progress with the idea of providing a basis for the study when sufficient samples have been obtained.

Beyond the two areas where work is in progress, it is difficult to state exactly where work will be done. Analysis of the plants in the experimental plots in Jamaica and in Costa Rica makes it imperative that I return to these two areas for at least part of the time. However, these two areas represent only the edges of the most intensive cultivation of the crop, and it is essential that I spend time in several areas of Brazil, Peru, Columbia and Venezuela and perhaps other countries. It is expected, however, that I will divide my time nearly equally between Costa Rica, Brazil and Jamaica, with only short visits to the other countries mentioned.

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The authorities with whom this project will be undertaken will be those which are already cooperating, namely the Jamaican Department of Agriculture at Kingston, and the Inter-American Institute of Agricultural Sciences at Turrialba, Costa Rica. Perhaps other agencies will be involved, particularly the Technical Collaboration Branch, Foreign Agricultural Service, USDA, which already has been of great assistance in the program.

The part of the program for which the grant is requested will begin some time in June of 1954, and will continue through January of 1955. It is anticipated that I will have a leave of absence from Allegheny College for the first semester of the school year 1954-55, for which period, I will receive no salary.

It is difficult to predict the date of completion of this project, but I do not expect that it will be done in under five years. This figure is based upon the little experience I have had in dealing with peoples in tropical areas.

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MEMORANDUM

TO: Members of the Faculty

FROM: L. T. Benezet Date: December 3, 1953

1. Ford Foundation Fellowships:

We have received notice from the Fund for the Advancement of Education that for the fourth year it will award approximately 250 Faculty Fellowships. These fellowships give a year's salary and incidental expenses to faculty members on leave from their institutions, for a year of refresher study in fields allied to their teaching. Professor Henry Pommer has such a fellowship at Yale this year. A college of our size is privileged to nominate not more than three candidates. Faculty members who are interested for 1954-55 are invited to confer with me and with Mr. Ross, who has the application forms and other details.

2. Faculty Summer Study Grants, 1954:

We are reasonably certain of the renewal by the Methodist General Board of Education for a second program of Faculty Summer Study Grants. Their $2,000 must be matched* by the College and we shall hope again for another outside source to make this available. The summer study may be for the completion or near-completion of a doctoral program, or for post-doctoral research or for other professional production. Last year a sub-committee of the Faculty Council, meeting with Mr. Ross and myself, selected seven recipients from among the applicants. Faculty members who are interested in applying for 1954 are invited to submit a letter describing the project in mind. The amount in most cases is the rough equivalent of a session of summer school teaching. Please include dates within which you would expect to complete your project. The Faculty Council has suggested the deadline for applications be set at the end of Christmas vacation. Letters may be submitted to my office.

3. The Report of the Annual Meeting of the Board of Trustees of October 24, 1953, containsin addition to the minutes of the meeting, reports of all administrative officers of the College. We had only a few copies left of this document when it was completed. These will be put on reserve in the Library for all faculty members who are interested in reading the reports.

LTB

* Two-for-one -- or a total of $3,000.

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April 19, 1954

Mr. James W. Stevens
Commodity Analysis
595 Madison Ave.,
New York 22, NY

Dear Mr. Stevens:

At the suggestion of Dr. Claud L. Horn of the Foreign Agricultural Service, USDA, I am writing to you for advice and possible assistance for the continuation of my research project with tapioca.

Last year I began a project to survey and to classify the variation existing in the species which produces the product tapioca. While the work that I do is essentially a "pure research" type of activity, I feel certain that the information which I gather will be of significance in improving various qualities required of the plant. As you may know, there are at least several hundred common names of varieties in various parts of the tropics, both in Eastern and Western Hemispheres. None of these common names have meaning beyond a narrow local boundary, and the result of this is lack of ability on the part of people in various areas to speak in common terms, or to visualize the plants to which these common names are applied. It is my hope to be able to determine the basic variants found in the species, and to categorize these to an extent that no matter where found, a plant will be easily recognized as one variant or another, with all that such ability means. No agronomist today can import a particular variant with any degree of certainty, since his requests may be addressed to someone not familiar with all the possible local names.

An example of the confusion existing may be cited to stress the importance of this work. In Jamaica, one of the places I visited last summer, I found that within this one small island alone, some 48 different names are being used by local farmers, whereas in reality there are no more than 25 different variants. What are the capacities of these twenty five different variants? Noone knows, but it is my hope to cooperate with various scientists and experts to assist me in making analyses of starch and protein content, length of time from planting to maturity, disease resistance, etc., so that one may have a catalogue of the varieties, their distinguishing characteristics, their starch, protein and vitamin producing capacities and other data all put into one publication.

This type of work requires first of all some field work, and this I began last summer in Costa Rica and Jamaica, where I have established trial plots and museum collections which I hope to expand constantly until there is a representative collection of the species in two areas close to the United States which are more easily accessable to me than areas farther away.

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It is essential that I return to these areas again this summer in order to observe and record data from those plants already established. It is in the area of finsncing this work that I appeal to you for assistance. I need funds for travel, subsistance, assistance on the job, postage and shipping charges for importation of specimens, and a small amount for incidentals. Based on last summer's experience, I need approximately $1000.00. This amount I can break down for you if you feel that such an amount, or less, is available. If you feel that you can help with this project, I shall be very happy to supply you with any further details which may be required.

If however, you cannot find it within your capacity to support such work, I shall be happy if you can suggest any other possibilities for support of this work.

I am writing to Dr. Horn to ask him to support my request to you with his opinions of the value of the work, and my capacity for carrying it out. If other references are needed, I shall be glad to supply them.

I shall be happy to hear from you.

Sincerely yours,

David J. Rogers
Assist. Prof. of Biology

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April 19, 1954

Dr. R. R. Baldwin, Director
Biochemical Laboratory
General Foods Corporation
Research and Development Department
Hoboken, New Jersey

Dear Dr. Baldwin:

At the suggestion of Dr. Claud L. Horn of the Foreign Agricultural Service, USDA, I am writing to you for advice and possible assistance for the continuation of my research project with tapioca.

Last year I began a project to survey and to classify the variation existing in the species which produces the product tapioca. While the work that I do is essentially a "pure research" type of activity, I feel certain that the information which I gather will be of significance in improving various qualities required of the plant. As you may know, there are at least several hundred common names of varieties in various parts of the tropics, both in Eastern and Western Hemispheres. None of these common names have meaning beyond a narrow local boundary, and the result of this is lack of ability on the part of people in various areas to speak in common terms, or to visualize the plants to which these common names are applied. It is my hope to be able to determine the basic variants found in the species, and to categorize these to an extent that no matter where found, a plant will be easily recognized as one variant or another, with all that such ability means. No agronomist today can import a particular variant with any certainty, since his requests may be addressed to someone not familiar with all the possible local names.

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If however, you cannot find it within your capacity to support such work, I shall be happy if you can suggest any other possibilities for support of this work.

I am writing to Dr. Horn to ask him to support my request to you with his opinions of the value of the work, and my capacity for carrying it out. If other references are needed, I shall be glad to supply them.

I shall be happy to hear from you.

Sincerely yours,

David J. Rogers
Assistant Prof. of Biology

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April 27, 1954

Miss Stella Deigman
The Biological Sciences Information Exchange
40 Smithsonian Institution
Washington, D. C.

Dear Miss Deigman:

Please send me, if available, a copy of the listings of sources of grants for biological research. I should be especially pleased if you have any additional listing of the smaller foundations in the eastern United States especially designed to assist colleges in research activities.

Sincerely yours,

David J. Rogers
Assistant Professor of Biology

DJR:mhn

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April 27, 1954

The Society of Sigma Xi
165 Prospect Street
New Haven, Connecticut

Gentlemen:

I should like to know if Sigma Xi has a fund readily available for grants for biological research and, specifically, if it is at all possible to process such a grant on or before June 1.

I had expected to receive a more considerable grant from other institutes for my summer's activities, but find that my requests were not fulfilled, and I need an additional 2 or 3 hundred dollars in order to carry out my research project with the systematics of Manihot utilissima.

If it is available, I shall be happy to receive the application for such a grant.

Sincerely yours,

David J. Rogers
Assistant Professor of Biology

DJR:mhn

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April 29, 1954

Dr. Carl O. Sauer, Chairman
Department of Geography
University of California
Berkeley 4, California

Dear Doctor Sauer:

Perhaps Fritz has already mentioned to you something of the predicament I find myself in concerning continuation of the study Manihot. I should like to know if you have any suggestions as to a small fund of money to supplement the $500 which I already have from Doctor Anderson.

I do not expect to spend the entire summer in the field, but no more than six weeks in Jamaica and Costa Rica, if money allows. In order to make both trips, I would have to have not less than double the amount I presently have, or $1,000; but even this amount is $350 short of what I had last summer and so would be a very skimpy amount for trips to both places. I feel, however, that I can depend upon my friend, Jorge Leon, to carry on for me in Costa Rica, but there is no-one at all to do the work that I need to in Jamaica. I further feel that if I do not return to Jamaica this summer that my project there will collapse entirely since I pretty definitely committed myself last summer to return. For the Jamaica trip alone, I would need about $800--in other words, $300 more than my present funds.

If you have any suggestions as to where this money can be found in such a short time, I shall be very pleased to have your suggestions.

Both Fritz and I were hoping very much that you would be able to accept a speaking engagement here at Allegheny. I am very sorry that such plans cannot be made --at least for next year. But I hope you will keep us in mind so that we may expect a visit not too far from now.

Sincerely,

DJR:mhn

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NATIONAL SCIENCE FOUNDATION
WASHINGTON 25, D. C.

May 21, 1954

Dr. David J. Rogers
Department of Biology
Allegheny College
Meadville, Pennsylvania

Dear Doctor Rogers:

I want to acknowledge your letter of May 18, enclosing a tentative proposal. It seems to me that your project and that of Dr. Bugbee are so different that it would not be advisable to combine them in a single application. They will need to have the special attention of different consultants, and if one received a lower priority than the other, it might eliminate both. I do not think the fact that they both come from the same institution will be a serious handicap.

I have looked over your proposal and have one comment to make in regard to the budget. Our panels have seldom recommended more than two month's salary for the principal investigator, and this is usually reckoned at the rate of two-ninths of the regular salary, if it is paid on a nine-month basis. In your case, it might be extended to cover three months, but I am very certain that, if it is to cover time from June 1 to October 1, they would want to be assured that this time did not overlap the time covered by your regular salary falling between those dates.

Sincerely yours,

H B Goodrich

H. B. Goodrich
Program Director
Developmental, Environmental
and Systematic Biology

P. S. The deadline for submission of proposals is September 15, but we will be pleased to receive it at an earlier date.

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May 18, 1954

Dr. H. B. Goodrich, Program Director
Developmental, Environmental and Systematic Biology
National Science Foundation
Washington 25, D.C.

Dear Dr. Goodrich:

Enclosed please find one copy of my application for a research grant. I realize that 15 copies will be needed for final action, and that the request shouldebe submitted later in the year, perhaps in September.

The reason for submission of this copy is to ask your advice concerning a combined grant for Dr. Bugbee (whose application you have seen recently) and for me. Would it be more appropriate, or would there be more chance of success for these two pieces of work, both essentially taxonomic in nature, if they were submitted as one request? Dr. Bugbee's and my own feeling in this respect was that we would have less opportunity for success individually, since two people from the same school with separate grants might, in the mind of the granting authorities, be a little too much emphasis or concentration in one school. Since Dr. Bugbee's needs are fairly parallel to mine, we could use some of the same equipment and by combining efforts utilize funds a little more sensibly.

We will be happy to have your oppinions on this subject.

Sincerely yours,

David J. Rogers
Assistant Professor of
Biology

DJR/p

Encl. 1.

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Allegheny College, Meadville, Pennsylvania

Principal Investigator: David J. Rogers

Title of proposed research: Studies in the variation of Manihot utilissima.

Description of proposed research:

Basically this is a problem of Botanical Taxonomy with an emphasis on the studies of intra-specific variations. The objectives are as follows:

1 - To organize a systematic body of knowledge concerning the large numbers of variants which exist within this species.
2 - To determine some of the effects of man's influence on the evolution of economic plants.
3 - To provide a method by which agronomists may more accurately select plants for greater yield, disease resistance, etc.

The present state of knowledge with respect to this variation is difficult to define in that there is no such work of a general character in progress or accomplished. There have been, however, two local research projects concerning varieties, one in Brazil (Zehntner, 1919) and one in Paraguay (Michaelovske, 1953). These two pieces of work have been done with varieties in cultivation in the two countries mentioned and these make no effort towards evaluating evolution of the species, nor have they made an effort to define the total variation which is possible within the species.

Procedure:

Work is at present under way for this project. The following has been accomplished: plants of locally occurring varieties have been brought into breeding plots in Jamaica; museum plots of locally occurring plants and introduced varieties have been established on the grounds of the Inter-American Institute of Agriculture Sciences at Turrialba, Costa Rica. The locally occurring specimens have already been established and several herbarium specimens made of some of these varieties in both Costa Rica and Jamaica. It is hoped that it will be possible to have variations from all over the tropical areas of growth introduced into museum plots in Costa Rica for comparison under uniform conditions.

Upon accomplishment of the above, studies of specific variations may be started in order to determine characters which will delimit the problem of basic types. This is largely done by methods of comparative morphology, utilizing techniques of classical taxonomy and newer techniques, as established by Edgar Anderson in 1949.

The greatest problem at the moment is the lack of suitable material for study. I have found that existing herbarium material is inadequate, and this necessitates a great deal of field work, particularly in South America.

Facilities:

Allegheny College's Department of Biology is adequately equipped to handle this type of research. Its only lack is adequate storage space for herbarium specimens.

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Personnel:

a) Biographical sketch of the chief investigator

Age: 35 years, born October 19, 1918
Place of Birth: De Funiak Springs, Florida
Parents: Both native citizens of the United States, father deceased; mother living, retired from the University of Florida.
Health: Excellent, wear glasses, vision corrected to 20/20; no deformities. Height: 5'10½", weight: 160 pounds.
Marital Status: Married, two children, ages seven and four.
Education: High School, Walton High, De Funiak Springs, Florida.
BS, University of Florida, Gainesville, major: botany, systematic and general, minor in soils with one graduate course in mycology, graduated, 1941.
MA, PhD, Washington University, Henry Shaw School of Botany, graduated June, 1951, major: systematic botany. Research in systematics of flowering plants, specialty: Euphorbiaceae. Doctoral dissertation: "A Revision of Stillingia in the New World."
Army: Active service as Field Artillery officer, 1941-1945, released from active service with rank of Captain, was awarded Silver Star and Purple Heart decorations for action in North African Theater of Operations.
Experience: In addition to administrative and teaching positions in the army, I have been student assistant in major courses since my graduating days. Present position begun in September, 1951 to present, teaching general botany, general and pathogenic bacteriology, part of staff teaching general education course "Organism and Environment", histology, field botany, and special problems in biology.
Research: Studies in the variation within the species Manihot utilissima Pohl. Field work in Costa Rica and Jamaica, summer 1953, supported by a grant from the American Philosophical Society and Allegheny College.
(3 mos. collecting trip to N.E. Mexico, 1948 with ... Meyer, sparingly ... continued study in 1954 in Jamaica, June-July.)
Present Position: Assistant Professor of Biology, with tenure, at Allegheny College, Meadville, Pennsylvania.
Publications: 1) A Revision of Stillingia in the New World - in Ann. Mo. Bot. Gard. 38: 207-259, 1951.
2) Stegnosperma: A New Species and a Generic Commentary - in Ann. Mo. Bot. Gard. 36: 475-477, 1949.
3) Variation in M. utilissima and related spp., 1953 Yearbook of Am. Phil. Soc., 166-168

b) Additional personnel

As much as possible undergraduate assistants will be utilized. At the present moment, only one student is available, but I am hoping that I will have at least two undergraduates assisting in work on some of the routine investigations. The one I have chosen is a junior biology major, with a specific interest in Botanical Sciences. Her ability is much above average.

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Budget: Total

a) Salary of the principal investigator

$400 per month for two months ~~commencing June 1, 1955 and ending October 1, 1955.~~ - $ ~~1600.00~~ 800.00

Salary of assistants

$35 per month (regular payment rate for assistants in the school), nine months. - - - - - - - - - 315.00

b) Permanent equipment

~~$360 for one herbarium case~~ - - - None - - - - - - - ~~360.00~~

c) Expendable equipment and supplies

Mounting paper for specimens - 500 sheets @ 11.50/100 ~~$25 for mounting paper~~, — 57.50

~~$15 for graph paper and postage~~ ~~Aluminum drying~~ (5 doz) @ 9.60 per doz ventilators - - - ~~40.00~~ 48.00

d) Travel Meadville, Pa, to Turrialba, Costa Rica, to Kingston, Jamaica (via Medellin, Colombia), + return to Meadville, Pa.

The following travel is expected: ~~extended tour to Brazil, Venezuela, and Columbia, South America with additional stops in Jamaica and Costa Rica. Estimated round trip distance is 15,000 miles at seven cents a mile.~~ Estimated by PAA 1st Class Schedule - - - - - 425.00 ~~1050.00~~

Per Diem during travel: $6 per day. 90 days - - - - - 540.00

e) Other direct costs:

~~Air transport of living specimens to Costa Rica from Java, India and Brazil.~~ - - - - - - - - - - - - - - - - - - ~~200.00~~

f) Indirect costs - ~~615.75~~

Total - - - - ~~$4720.75~~

film - Black & white $35.00

189.4
75
9470
13258
0

189.4
29
17046
3788
5493
.07
384.51

214.40
393.40

800.00
315.00
57.50
48.00
425.00
540.00
$2185.50 direct costs
.15%
1092750
218550
$327.82.50 - indirect costs

2185.50
327.82
$2513.32

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October 12, 1954

Mr. C. Lalor Burdick
Director, The Lalor Foundation
4400 Lancaster Pike
Wilmington 5, Delaware

Dear Mr. Burdick:

Your brochure on The Lalor Foundation, Program of Awards, has just been brought to my attention. It sounds like a fine program.

I should like to inquire if the twenty awards for 1955 are to be used as expense money, or is it to be used as a salary for a particular time? It is frequently possible to get grants which will pay for expenses purely but which do not carry any salary with them. It would be a fine thing for me if it might be left to my discretion as to how to apply the Foundation's grant.

According to the description of activities, I feel that my research would fall under your particular descriptions. I should like to have application blanks, if there is a formal form for them. If there is no formal form, may I please have some directions as to proper method of application. (Such as, number of copies required, whether biographical data is necessary, etc.) I should like to inquire further whether a grant now pending from another organization would influence the granting of this particular award.

I am looking forward to receiving a reply and application blanks from you.

Sincerely yours,

David J. Rogers
Assistant Professor of Biology

DJR/rp

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THE LALOR FOUNDATION, 4400 LANCASTER PIKE, WILMINGTON 5, DELAWARE

October 19, 1954

Mr. David J. Rogers
Asst. Professor of Biology
Allegheny College
Meadville, Pennsylvania

Dear Mr. Rogers:

In accordance with the request in your letter of October 12, 1954, there is enclosed an application form for the Lalor Foundation new summer faculty awards.

In the case that you are interested in applying for a Lalor Award at the Marine Biological Laboratory at Woods Hole, Massachusetts, you should address yourself to that institution directly.

Director

Digitized by the Hunt Institute for Botanical Documentation

THE LALOR FOUNDATION

4400 Lancaster Pike, Wilmington 5, Delaware

APPLICATION FORM FOR AWARD

NOTE: This application form is intended to outline the kind of information required, so that each one's case is fully presented. The essentials are to present: (1) your background of qualifications; (2) what you have accomplished; (3) what you propose to do.

NAME OF APPLICANT:

I, David J(ames) Rogers
First Middle Last

ADDRESS: Allegheny College, Meadville, Pa.

TELEPHONE: 43251, Ext 330

DATE: December, 1954, hereby make application for an award of the Lalor Foundation to the amount of $ 2900.00 for the following purpose:

(Give in the space below (1) a concise statement of your project; (2) where the work will be carried on; (3) with whom.)

Be sure to mount an inexpensive photograph here.

Form must be filed before

Basically this is a problem of botanical taxonomy with an emphasis on studies of inter- and intraspecific variation. The objectives are as follows: (1) to organize a systematic body of knowledge concerning the large nos. of variants in the complex known as Manihot utilissima. (2) To determine some of the effects of man's influence on the evolution of plants. Methods to be used are those of the systematic botanist (morphology, geography, genetics) but with the added data of some of the biochemical properties of the plants (crude protein content of foliage, HCN content of cortical and epidermal portions of root, carbohydrate content of root). Studies are already in progress, with two experimental gardens, 1 in Jamaica, one in Costa Rica.
The work will be carried out in the agricultural chemistry department of the Department of Agriculture, Kingston, Jamaica, with Mr. Charles Wells (Allegheny) as an assistant.

PERSONAL HISTORY

Age 36 Yrs. Date of birth Oct. 19, 1918 Where born De Funiak Springs, Florida

Height 5'10½" Weight 165 Health (name any deficiency) excellent

Citizenship native-born US Occupation of Father (past or present) Owner and operator of lumber mill

Birthplace of Father Chicago, Illinois Birthplace of Mother New Orleans, La.

Marital Status Married Ages of your children, if any, or other dependents

2 children, age 8 and 5, expecting third

Permanent Address, if different from above

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THE IMPERIAL COLLEGE OF TROPICAL AGRICULTURE
INCORPORATED BY ROYAL CHARTER
PRINCIPAL AND DIRECTOR, REGIONAL RESEARCH CENTRE:
G. A. C. HERKLOTS, M.Sc., Ph.D.
CABLES: "STOMATA" PORT-OF-SPAIN.
TRINIDAD, B.W.I.

In reply please refer to No. 8275

18th September, 1956

Dear Dr. Rogers,

Simmonds has sent me a copy of his letter of 12th September to you.

You will appreciate that before we can consider accepting a Fulbright fellow we must know in detail what he wishes to do and how he proposes to do it, so as to be able to decide whether we can provide supervision and laboratory space.

Would you therefore kindly give us some data about yourself - age, training, qualifications - whether you are married and wish to bring wife and possibly family (we have no quarters at the College and it would be necessary for you to live out; we would do our best to find the accommodation you require).

We should like copies of your previous reports on Manihot.

When do you propose to come?

What laboratory requirements do you need?

Do you require any land on which to grow your collections?

Yours sincerely,

G A C Herklots

Principal

Dr. David J. Rogers,
Allegheny College,
Meadville,
PENNSYLVANIA.

GACH/GR

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September 25, 1956
Reference 8275

Dr. G. A. C. Herklots
Principal and Director
Imperial College Tropical Agriculture
Trinidad, B. W. I.

Dear Dr. Herklots:

Thank you for your letter of September 18. In answer to your questions concerning my proposal for a Fulbright, the following data are supplied:

Personal: Age 38; native United States.

Training: B.S. in Botany, University of Florida, 1941; M.A. and Ph. D., The Henry Shaw School of Botany, Washington University, St. Louis, 1951, (in conjunction with the Missouri Botanical Garden) Major field: Systematic Botany.

Specialty in Research: Taxonomy of the Phanerogams with a special reference to the Family Euphorbiaceae. Monographic work, "A Revision of Stillingia in the New World."

As previously noted I have spent four years in part time research concerning Manihot utilissima. Enclosed is a small publication concerning this work. It is my hope to have a paper published this year concerning the variation of cassava in Jamaica.

I should like to begin my fellowship in September, 1857, for a period of six months thereafter. I expect to bring my wife and three children with me.

I do not anticipate the need of any laboratory other than those required to press and dry herbarium material. I do not anticipate raising any plants and therefore would not need any land. I do anticipate making collections of clones in Trinidad, in the coastal regions of Venezuela, and expect to make trips into northeastern Brazil to sample the variations at selected spots there.

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The following references are supplied for your information:

1. Dr. Edgar Anderson, Director
   Missouri Botanical Garden
   2315 Tower Grove Avenue
   St. Louis 10, Missouri

2. The Director
   Department of Agriculture
   Hope, Liguanea
   Jamaica, B. W. I.

I trust that I have answered your questions and will be happy to supply answers to any additional ones you may have.

Sincerely yours,

David J. Rogers
Associate Professor Biology

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