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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.

NEW YORK STATE COLLEGE OF AGRICULTURE
CORNELL UNIVERSITY

ITHACA, N. Y.

Albert R. Mann, Dean

Department of Botany
K. M. Wiegand, Professor
J. R. Schramm, Professor
L. Knudson, Professor
A. J. Eames, Professor
L. W. Sharp, Professor
O. F. Curtis, Professor
W. C. Muenscher, Assistant Professor

February 13, 1925

Mr. C. R. Ball,
Office of Cereal Investigations,
U. S. Department of Agriculture,
Washington, D. C.

Dear Mr. Ball :

I am in receipt of your letter of January 22
containing a copy of material in Botanical Abstracts.

I thank you very much for calling this to my attention.
I am planning very soon now to take up the subject for
which our committee was appointed and you will doubtless
hear from me before long. During January and so far in
February I have been crowded with other work.

Yours truly,

KMW:M



K. M. WIEGAND, PROFESSOR
L. KNUDSON, PROFESSOR
DONALD REDDICK, PROFESSOR
A. J. EAMES, PROFESSOR
L. W. SHARP, PROFESSOR
O. F. CURTIS, PROFESSOR
L. C. PETRY, PROFESSOR
W. C. MUENSCHER, ASSISTANT PROFESSOR

NEW YORK STATE COLLEGE OF AGRICULTURE
AT CORNELL UNIVERSITY
ITHACA, N. Y.

ALBERT R. MANN, DEAN

DEPARTMENT OF BOTANY

December 19, 1925.

Mr. C. R. Ball,
Bureau of Plant Industry,
Washington, D. C.

Dear Mr. Ball:

Recd

I was very sorry that I could not get the questionnaire out earlier. The replies are coming in slowly and it is clear that we cannot make a final report at the Kansas City Meetings. I have decided to draw up a preliminary report giving the answers in the questionnaire that can be easily given, for the questionnaires that have so far been returned. I fear there will not be time to send this to you for approval before it must be sent to Dr. Pool. I find that I can not go to Kansas City myself.

Sincerely yours,

KMW:KMS

K. M. Wiegand



December 23, 1925.

Dr. K. M. Wiegand,
Cornell University,
Department of Botany,
Ithaca, New York.

Dear Doctor Wiegand;

Your letter of December 19, with summarized report of the questionnaire results for presentation at the Kansas City meetings, is received. I have not yet had time to scan the report but will take it with me to Kansas City and read it enroute.

I am very sorry indeed to know that it will not be possible for you to attend the meetings. Great restrictions were placed on attendance at these meetings at Federal expense but fortunately for me my expenses are paid as regent general of the Honor Society of Phi Kappa Phi.

Very sincerely yours,

Carleton R. Ball,
Regent General.

CRB/AJM

Dec 23 1925
K.M. Wiegand

At the meeting of the Systematic Section of the Botanical Society of America in Washington last winter, a committee was appointed to investigate the problem of supply of taxonomic botanists and demand for their services, the statement having been made that the supply of taxonomists is wholly inadequate. The committee believes that its duties lie along three lines, (1) to determine whether such a shortage exists, (2) if so, to determine the reason, and (3) to suggest remedies. As a basis for this study the following questionnaire has been prepared and it is hoped that our botanical workers will aid by filling it out, though we hesitate to ask them for the necessary time to do so. In case there is not room on the face of the sheet please write additional information on the back.

Some persons to whom the questionnaire is sent will find various portions not applicable to them. It is asked that they fill out as much as possible, leaving the inappropriate sections blank.

I. Supply

1. Is there, in your opinion, a dearth of taxonomists?
2. If so in what fields is this noticeable?
3. Is the need for (a) young workers, (b) mature fully trained workers, or (c) both classes?

II. Reasons

If you hold that a dearth of taxonomists exists, what do you think are the reasons? Number in order of importance.

Lack of available instruction.

Deficiencies in type of instruction.

- a. Too technical
- b. Poorly given from standpoint of interest.

Lack of openings for employment in the profession.

Lack of well-paying positions as an ultimate goal.

Dearth of students with the taxonomic mind.

Regretation of taxonomy as an unimportant branch of botany.

Lack of appreciation of one's work by others, and a consequent personal feeling that it is unimportant.

Lack of sympathy with the unstable condition of nomenclature and group limits, with a consequent feeling that taxonomy is unscientific.

Difficulty of pursuing research away from the large taxonomic centers.

The necessity for more detailed training for a good teacher in taxonomy than in other branches of botany.

Any other cause.

III Remedy

If a dearth of taxonomists exists, how would you suggest that it be remedied?

IV Information for the committee.

1. Available instruction.

- a. Has your institution a course or courses in the taxonomy of vascular plants? If so, state nature.
 1. Average enrollment?
 2. By what grade of students?
 3. How many credit hours in each course?
 4. With laboratory work (yes or no)?
 5. About what per cent have a cultural interest?
 6. " " " " want to use the knowledge of other courses.
 7. " " " " have a life interest?
 8. Are herbaria required of the student?
 9. Are scientific names used or emphasized in the courses in taxonomy?

- b. What proportion of the botanically inclined students in your institution major in -

taxonomy	ecology
anatomy	pathology
morphology	plant breeding
physiology	

- c. What, in your opinion, would constitute a good course in taxonomy?

2. Research

- a. Can research in taxonomy be pursued in your institution?
(depending on herbaria, library, etc.)

b. In what phases of taxonomic (in broad sense) research can students profitably engage in your institution? (revisions or monographs, local flora, local taxonomic problems, plant distribution, etc.)

c. What is the departmental attitude toward taxonomic work?
favorable passive unfavorable

3. Employment

a. What opportunity is there in your institution for the employment of young taxonomists?

b. In your institution is the chance of ultimate professional employment, or its equivalent in salary, as great in taxonomy as in other phases of plant study?

c. Is the opportunity for women as great as for men?

d. What in your opinion is the need for taxonomically trained men and women in the following fields. Answer - much or little. -

(a) Agronomy

(e) Horticulture

(b) Forestry

(f) Pomology

(c) Plant Breeding

(g) Vegetable Gardening

(d) Farm Crops

(h) Other branches of Agriculture

Signature _____

Institution _____

Committee:

K. M. Wiegand (Cornell) chairman

M. A. Howe (N. Y. Bot. Gard.)

C. R. Ball (Bu. Pl. Ind.)

Please return questionnaire to

K. M. Wiegand,
Dept. Botany, Cornell Univ.,
Ithaca, N. Y.

23-XII-35
K M Weigand

Supply and Demand among Taxonomic Botanists

Preliminary Report of a Committee

of the

Systematic Section of the Botanical Society of America.

Dec. 1925.

At a meeting of the Systematic Section of the Botanical Society of America at Washington, D. C. Dec. 1924, a committee was appointed to investigate the problem of supply of taxonomic botanists and demand for their services, the statement having been made that the supply of taxonomic botanists is wholly inadequate. The committee believed that its duties lay along three lines (1) to determine whether such a shortage existed (2) if so, to determine the reason, and (3) to suggest remedies. As a basis for this study a questionnaire was sent out to 160 taxonomists, heads of departments, prominent teachers both in college and high schools, and many agronomists and others interested in professional botanical subjects. Due to the pressure of other work, the issuance of this questionnaire was unavoidably delayed, and the time has been short to receive replies. So far only about 45 replies have been received. The committee decided to make a preliminary report at the Kansas City meeting summarizing the answers so far received, leaving the question of remedies for further study.

Of the 45 replies, 25 were from taxonomists, 16 from college teachers not known to be taxonomists, 1 from a non-taxonomic high school teacher, and 1 from a non-taxonomic professional agriculturalist.

Supply of Taxonomists

Is there in your opinion a dearth of taxonomists, and if so, in what fields is this noticeable? - Unfortunately this question proved ambiguous and was answered in two ways. It was intended to ask, are there insufficient taxonomists to fill positions. Instead many read it as asking whether there should theoretically be more taxonomists, and more taxonomy taught. Likewise, the second part of the questionnaire was commonly misinterpreted. The word fields was intended to mean, colleges, high schools, herbaria, experiment stations, branches of agriculture, etc. Instead it was frequently read as implying Angiosperms, Gymnosperms, Fungi, Algae, etc. The summary of answers to this important question are therefore not very significant. Of the 41 replies to this question, 32 voted in the affirmative on the first part of the question, and 9 in the negative. However, practically all voting in the negative made it clear that they were voting on supply to fill existing positions. The replies to the second part of the question were so confused as not to be significant. Practically all stated that the demand was for both young and fully trained workers.

Lack of available instruction:- 27 mentioned this as important, 7 rated it as first, 3 as second, 1 as fourth, 3 as fifth, 2 as sixth, 1 as seventh, 1 as tenth, and 9 checked it without rating. 1 stated it to be doubtfully important.

Deficiencies in type of instruction:- 19 mentioned this as important; none rated it as first, 2 as second, 4 as third, 3 as fourth, 1 as sixth, 3 as seventh, 2 as eighth, and 4 checked it without rating. 2 stated it to be doubtfully important. Among these replies many complained that the type of instruction was poor, and only one that it was too technical.

Lack of openings for employment in the profession:- 23 mentioned this as important; 3 rating it as first, 6 as second, 1 as third, 1 as fourth, 1 as fifth, 3 as seventh, 1 as ninth, 1 as tenth, and 6 checked it without rating. 1 stated it to be doubtfully important.

Lack of well-paying positions as an ultimate goal:- 25 mentioned this as important; 7 rated it as first, 4 as second, 1 as third, 3 as fourth, 1 as fifth, 1 as sixth, 1 as eighth, and 7 checked it without rating.

Scarcity of students with a taxonomic mind:- 17 checked this as important; 2 as first, 1 as second, 3 as third, 4 as fifth, 1 as sixth, 1 as seventh, 2 as tenth, and 3 checked it without rating. 2 stated that it is not important.

Reputation of botany as an unimportant branch of botany:- 26 mentioned this as important; 4 rated it as first, 1 as second, 3 as third, 3 as fourth, 4 as fifth, 2 as seventh, 3 as eighth, and 6 checked it without rating. 2 stated it to be doubtfully important. Probably many of those who failed to return the questionnaire would rate this as important.

Lack of appreciation of one's work by others, and a consequent personal feeling that it is unimportant:- 17 mentioned this as important; 1 rating it as first, 1 as second, 1 as third, 2 as fourth, 3 as fifth, 1 as sixth, 2 as eighth, 2 as ninth, and 4 checked it without rating. 1 stated it to be doubtfully important.

Lack of sympathy with the unstable condition of nomenclature and group limits, with a consequent feeling that taxonomy is unscientific:- 19 mentioned this as important; 2 rated it as first, 1 as second, 3 as third, 1 as fifth, 2 as sixth, 2 as seventh, 1 as eighth, 2 as ninth, 3 as tenth, and 2 checked it as important. 3 stated it to be doubtfully important. What the vote on this point would be among the unreturned questionnaires would be interesting to know.

Difficulty of pursuing research away from a large taxonomic center:- 16 mentioned this as important; 2 as third, 2 as fourth, 1 as fifth, 4 as sixth, 1 as seventh, 1 as eighth, 1 as tenth, and 4 checked it without rating. 2 stated it to be doubtfully important.

The necessity for more detailed training for a good teacher in taxonomy than in other branches of botany:- 17 mentioned this as important, 1 rated it as first, 1 as second, 4 as fourth, 1 as fifth, 1 as sixth, 4 as ninth, 1 as

tenth, and 4 checked this without rating.

Other causes mentioned were:- Lack of teacher's experience, Indirect value of taxonomy, Failure to appeal to youth at 12 to 16 years of age rather than at college age when less receptive to "knowing plants". Lack of training in herbarium methods. Too many other things in student's schedule. Latin names. Not enough apparatus visible to impress students. Lack of acquaintance with living plants. Failure to appreciate importance of taxonomy on part of teachers.

Available Instruction

Has your institution a course or courses in taxonomy of vascular plants? Of 32 answers all but 4 stated that such courses were given. The number given varied from 1 to 12. Six institutions reported 3 or ^{more} courses.

Average enrollment in taxonomy:- 34 replies were received. The average enrollment was 31 students per institution, ranging in different institutions from 2 to 180.

Grade of student:- All grades from sophomore to graduate students were mentioned; 2 institutions give a freshmen course in taxonomy.

Credit hours:- The credit hours per institution varied from 1 to 30 credit hours per year.

Laboratory work:- All institutions reported laboratory work. Many reported no lectures.

Per cent of above students having a cultural interest in taxonomy:- Average 38.

" " " " " wanting to use the knowledge for other courses:- average 54.

Per cent of above students having a life interest in taxonomy: Average 8.

Are herbaria required of the student? 30 replies were received. Of these 6 were in the affirmative, 22 in the negative, and 2 with qualifications.

Are scientific names used or emphasized in the courses in taxonomy? 30 voted, all in the affirmative.

What proportion of the botanically inclined students in your institution major in:-

Taxonomy: 17 replies; average of per cents given, 10 o/o. 2 reported no specialization.

Anatomy: 17 replies; average of per cents given, 2 o/o. Only 5 reported specialization in this line.

Morphology: 19 replies; averages of per cents given, 3 o/o. 8 reported no specialization.

Physiology: 18 replies; average of per cents given, 18 o/o. 1 only reported no specialization.

Ecology: 17 replies; average of per cents given, 11 %/o. 7 reported no specialization.

Pathology: 17 replies; average of per cents given, 23 %/o. 2 reported no specialization.

Plant Breeding: 12 replies; average of per cents given, 8 %/o. 6 reported no specialization.

Cytology: 3 replies; average of per cents given, 5 %/o.

Bacteriology: 1 reply; average of percents given, 40 %/o.

General Botany: 1 reply; average of per cents given, 15 %/o.

Research

Can research in taxonomy be pursued in your institution?- 37 replies were received of which 19 were in the affirmative, 11 were in the negative, and 7 reported a limited amount possible.

In what phases of taxonomic research can students profitably engage in your institution?-

- 9 reported revisions possible in general groups
- 2 " " " in fungi only
- 1 " " " in lichens only
- 24 "local floras possible
- 17 reported local taxonomic problems possible
- 18 " plant distributional studies possible

What is the departmental attitude toward taxonomic work? 29 report it favorable, 2 report it passive, and 2 report it unfavorable.

Employment

What opportunity is there in your institution for the employment of young taxonomists?- Of 40 replies, 9 reported the existence of such opportunity, 7 a limited opportunity, and 24 report no opportunity. The replies to this and the 2 following questions almost answer the questions as to why there are not more taxonomists.

In your institution is the chance of ultimate professional employment or its equivalent in salary as great in taxonomy as in other phases of plant study?- Of 35 replies, 15 report this opportunity as great, 15 report it is not so great, and 5 think it is doubtfully as great.

Is the opportunity for women as great as for men?- Of 35 replies, 11 report the opportunity as great, 18 report it not so great, and 6 are doubtful.

What in your opinion is the need for taxonomically trained men and woman in the following fields?-

Agromony	29 answers	17 much	6 some	4 little
Forestry	31 "	22 "	7 "	2 "
0				

Plant Breeding	29 answers	24 each	4 some	1 little
Farm Crops	26 "	15 "	6 "	5 "
Horticulture	32 "	23 "	6 "	3 "
Pomology	24 "	14 "	6 "	4 "
Vegetable Gardening	25 "	13 "	6 "	6 "
Other branches of agriculture	7 "	4 "	0 "	3 "

The wording of this question prove to be ambiguous. The word need was intended to mean opportunity, but was interpreted generally as meaning desirability.

K. M. WIEGAND, PROFESSOR
L. KNUDSON, PROFESSOR
DONALD REDDICK, PROFESSOR
A. J. EAMES, PROFESSOR
L. W. SHARP, PROFESSOR
O. F. CURTIS, PROFESSOR
L. C. PETRY, PROFESSOR
W. C. MUENSCHER, ASSISTANT PROFESSOR

NEW YORK STATE COLLEGE OF AGRICULTURE
AT CORNELL UNIVERSITY
ITHACA, NEW YORK
ALBERT R. MANN, DEAN

DEPARTMENT OF BOTANY

March 30, 1927.

Dr. C. R. Ball,
Department of Agriculture,
Washington, D. C.

Dear Dr. Ball:

I have been working over the material that has come to hand with reference to the work of the committee on the supply and demand of taxonomists, and have prepared two papers embodying some of the information obtained in the questionnaires and also some opinions of my own after the contact I have had in recent years with the question. I have not been entirely satisfied with my write-up. It has been revised several times and may now be satisfactory, but I am not sure. I recently sent these two papers, along with one from Professor Harris and one from Dr. Bailey, to Dr. Howe asking for his advice as to whether the publishing of these papers in Science would be desirable as one step in the committee's work toward improving the situation. I asked him to send these papers on to you, and doubtless you will receive them soon. I shall be glad of an opinion from you with regard to the publishing of these papers and any suggestions for the future work of the committee.

When you have finished reading these papers, I shall be glad to have them returned to me.

Sincerely yours,

K. M. Wiegand

KMW:EMS



Phytology botany
Taxonomy stirpitology
Phytogeneology
Phyto
Morphology

Phylogeny

Phytographer (y)

*Either 1 paper
or 2 separate titles*

April 6, 1927.

Dr. E. M. Wiegand,
Department of Botany,
Cornell University,
Ithaca, N. Y.

Dear Dr. Wiegand:

Your letter of March 30 was duly received, and the papers mentioned therein came to me from Dr. Howe a day or two later. I have read these with pleasure and profit, and find myself in rather full agreement with what has been said. The following suggestions are my best judgment in the matter.

I believe these contributions should be printed in a journal of general science rather than in a botanic journal, in order that the attention of other sciences may be called to the condition. This is on the assumption that it already is fairly well known to botanists, and that more good than harm will be done by calling the matter to the attention of scientists in other lines. Probably the Scientific Monthly would be preferable to Science, though I am not sure of this.

I think that the papers you have prepared would better appear under your name as sole author than under the name of the entire committee. Dr. Howe suggests this in his letter to me on the ground that the views expressed are yours rather than those of the committee. I would make the suggestion rather for the reason that you have done the work and prepared the paper. I think a footnote should show the composition of the committee and their general approval of the presentation as made. I believe this would strengthen the appeal to the other sciences.

I would suggest that what you have prepared as two papers be combined to a single paper. This seems desirable for at least two reasons. The first is that papers having the same title, differing only in the serial number, are very confusing, and I believe should be discouraged. I was guilty, once, of starting such a series, but repented me of my sins and swore to do so never again. In the second place, your second paper is quite brief, and would not unduly lengthen the first if added to it.

I believe that one of the ways of awakening an appreciation of taxonomic botany which we have very generally neglected is press service items showing its contributions. In the splendid work that Science Service

is doing in popularizing the knowledge of the latest achievements in the various sciences, I recall scarcely any contributions made from taxonomic botany. Perhaps there are not many which could be so played up, but surely there must be some. I seem to recall that a very careful study was necessary to determine just what species of tree yielded the true chaulmoogra oil for treating leprosy. I believe also that critical discrimination between rubber-producing species was necessary to the success of the great East Indian rubber plantations. These must have been the contributions of men trained in systematic botany, even if they were not professionally engaged in that work at the time these studies were made. Doubtless, men like yourself, engaged in taxonomic botany on a broad basis, will readily bring to mind dozens of such instances.

I am inclined to suggest that the ^{inclusion} ~~addition~~ of a striking series of such contributions to commercial enterprises would be well worth while in your paper. Thereafter, those who are especially interested ought to see that such items are fed into Science Service and other publicity channels.

Another contribution of taxonomic botany not always recognized as such is the popular knowledge of plants carried in nature study courses and similar education activities. These might well be mentioned also in your paper, and striking instances brought to public attention through suitable channels thereafter.

I am interested in your discussion of the actual prejudice which may be felt toward the very names "taxonomy" and "taxonomist." There are two ways, of course, of modifying any existing attitude of disparagement and prejudice. One is to play up the value of the personnel and performances represented by these ^{names} ~~ways~~ and to ^{emphasize} ~~increase~~ its contribution to popular and commercial well-being. Another way, and one which you yourself suggest, is to change the name and start over again. I am inclined to think that any disfavor into which the words named have fallen is shared also by the word "botany." By the non-botanical, this disfavor is based on a feeling of the uselessness of the subject. By the botanical in other lines than taxonomy, it probably is based on the feeling that the residuum still going under that name is mostly taxonomy and relatively negligible.

If a change in the terminology is to be considered in your paper, I would suggest the question of considering also the use of the words "phytology" and "phytologist" in place of "botany" and "botanist", and "phytography" and "phytographer" in place of "taxonomy" and "taxonomist", respectively. I realize that the latter words do not carry exactly the idea of kinds of plants, but rather connote the description of plants. If a change is desirable for the sake of the regard of the nonbotanical, I do not believe this difference is important. Much as I admire Dr. Bailey and agree with the sentiment in his letter, I do not believe that he has helped matters along by using the title "Gentes Herbarum." Instead of devising a suitable English term, he has gone back to the straight Latin, which makes no popular appeal at all, either to the botanical or the nonbotanical. Your suggested term "stirpitlegy" carries the

- 3 -

desired meaning, though I doubt if it would get over as easily as "phytography" and "phytographer". It introduced a new root, which, so far as I know, has not been used in English, but only in pure Latin, whereas the root "phyto" is fairly well known.

You ask for suggestion regarding the future work of the Committee, and I believe I have covered this in part by what I said about press releases and items for Science Service, etc. These things the Committee certainly can do and can encourage others to do. Perhaps a questionnaire to the trade, that is, the botanical world, asking for examples of this kind, might be well worth while. If this action is considered, I would suggest that a few striking examples be given when the questionnaire is sent. This would have the double effect of acting as suggesters and of informing the botanists other than taxonomists of instances of the value of taxonomy. While such a questionnaire might not result in obtaining very many good examples for botanists, it certainly would set them to thinking along this line, and that probably is what mostly is needed right now.

One other phase of the problem occurs to me. If we are to popularize the knowledge of any science, we ought to simplify its terminology as much as possible. The common people have no aversion for new words, but they ought not to be compelled to learn them without real reason. One of the handicaps of scientific terminology is its present use of Latin forms when English would do much better. I refer particularly to the numerous Latin plurals of varied construction. It is a task to learn a new term in the singular, but having learned that, you ought to be able popularly to form your plural in the English, and not be obliged to learn 10 or a dozen new rules for forming plurals of your new singular forms. I have been giving some thought to this subject lately, and have evolved a manuscript a copy of which I send you for consideration, which will explain in full what I have suggested here briefly.

I will send a copy of this letter to Dr. Howe for his information. After you have read my manuscript, I would be glad to have you send it on to him, and I will ask him to return it to me. I will be interested in knowing that you think of the idea contained in it, as well as what you think of some of my other suggestions in this letter.

All your papers are forwarded under separate cover.

Very sincerely yours,

Carleton R. Ball,
Senior Agronomist in Charge.

CRB-BWG