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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.

Nov. 26. 1969

Dear Stan:

Glad to hear news of SDM for MNA. Hope things get moving PDQ. Our news isn't nearly so exciting, except we're still struggling to stay alive. The work for the U. of Colo. Museum hasn't started, and we don't know whether OSIS is going to be able to lay scratch on or not--depends on what Congress allows. Ed Weiss is working on it, and as far as merit is concerned, we have top priority. That's great, if money is forthcoming. There are, of course, many other efforts to get funding, but things are tough all over.

We still haven't got across our notion of how to standardize things. Really, we do not care to specify what standards a particular institution must accept. What we do is let the computing programs get the job of making the necessary standardization, via TAXIR, and give each using organization the freedom to do its own standardizing. If I set up a procedure which demands that you in the US Nat Herb. follow my standards, I have clearly violated your prerogatives to get your own information into whatever format is most suitable to you. So you, or in the case of FNA, the editorial board, establish what you want, and then we specify those requirements to TAXIR, and that's that.

At the museum here, each section of the museum had a different set of requirements for each part of the holdings. Thus, Bill Weber tells me the necessary information for the bryophytes, and what is necessary for the angiosperms, and there are small differences between these two. What is wanted by the archeologist is not the same as Bill's set of standards, and these in turn are different from the requirements in the zoological collections or the paleontological holdings.

Clearly, it is good idea to try to get those people who borrow specimens from you to cooperate by giving back to you a standard set of descriptors, which you find useful there. I think this is the only way to go--let the whole community help out. Now, whether you can get some of the old hardbacks to go along with this idea or not is something else. But, perhaps if it is explained correctly to the community, more cooperation can be had. It will take a while to get all systematists to be systematic, but never started, never done.

Thanks again for your letter, and I look forward to getting things rolling--it's been a long struggle, hasn't it?

Sincerely,

SMITHSONIAN INSTITUTION

WASHINGTON, D. C. 20560

20 November 1969

Dr. David J. Rogers  
Taxmetrics Laboratories  
University of Colorado  
Boulder, Colorado 80302

Dear Dave:

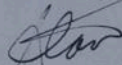
Things are beginning to move on the computer side of FNA, and we now have perhaps 50 applications for the position of Systems Development Manager. The Task Force, headed by Dr. Jack Minker, hopes to make a recommendation to John Olive by about 1 December, and we expect to have someone on board by 1 January.

Once the SDM comes aboard the process of intensive consultation and study will begin.

Have you been able to progress toward your goal of "computerizing" the Museum at the University of Colorado? Do you have a standard data form for herbarium input? We have toyed with the idea of sending out data sheets routinely with loans and asking voluntary cooperation in filling them out. What do you think of this idea?

Hope we can get together soon again to bring each other up to date. Best regards, and let us hear the latest from Boulder.

Sincerely,



Starwyn G. Shetler  
Secretary, FNA Project

Dec. 4, 1969

Mr. Stan Shetler  
United States National Museum  
Smithsonian Institution  
Washington, D. C. 20560

Dear Stan:

It sounds very interesting to participate in the FNA demonstration. Before I can say definitely that we can, I'll have to know more about what you're planning, and whether the work load in advance is particularly heavy.

First, have you any idea about the sources of the data to be used? Do you expect that we enter the picture when the data are on tape or cards? If the data are not so prepared, do we get into the act to put them up? If the latter, are there any funds to help with this sort of thing?

Second, do you anticipate a "live" demonstration at AIBS? If so, who are the appropriate people to find what sort of computing installation we'll have to work with? Do we have remote terminal facilities? Teletype? CRT? Again, what funds are available to help with this aspect. Can we expect any back-up for travel funds?

These questions are for information only, and do not indicate that we won't do it if the total package can't be arranged. It's just that money's tight, and if we can get some assistance, it will be helpful. Otherwise, we'll dig around.

Looking forward to hearing more.

Sincerely,

David J. Rogers  
Prof. of Biology

SMITHSONIAN INSTITUTION  
UNITED STATES NATIONAL MUSEUM  
WASHINGTON, D.C. 20560

24 November 1969

AIRMAIL

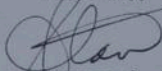
Dr. David J. Rogers  
Taximetrics Laboratory  
Department of Biology, Armory 101  
University of Colorado  
Boulder, Colorado 80302

Dear Dave:

Our FNA Editorial Committee just met, and among the decisions taken was the decision to prepare a pilot run of an integrated approach to floristic data-handling for demonstration at the next AIBS meetings. It was our unanimous feeling that your system should be brought into this pilot run and demonstration.

In a few more days or at most two weeks, we will settle for certain on the taxonomic group to be used for the pilot run. It will be a large group in any event, because we want to demonstrate all the angles of information handling that we can. Meanwhile, I am writing to see whether you are interested in cooperating in this venture. I presume that your system would be used primarily to handle specimen data for this pilot run. Please give me your reaction as soon as possible.

Sincerely,



Stanwyn G. Shetler  
Secretary, FNA Project

SGS/jt  
cc: Roy L. Taylor

# AIBS AMERICAN INSTITUTE OF BIOLOGICAL SCIENCES

202/362-6733

3900 WISCONSIN AVENUE, N. W.

WASHINGTON, D. C., 20016

FNA Secretariat  
19 September 1969



MEMORANDUM: To Members of the FNA Advisory Council  
 FROM: Stanwyn G. Shetler, Secretary  
 SUBJECT: Seattle luncheon Meeting, 27 August 1969  
 Preliminary Generic List

The Editorial Committee was extremely pleased with the outcome of the FNA luncheon on Tuesday the 27th of August during the XI International Botanical Congress in Seattle. This was the first joint meeting of the FNA committees (Advisory Council, Steering Committee, Editorial Committee) where a significant number of the Advisers, including foreign members, were able to attend. Fifty-seven persons attended the luncheon, including over three-fourths of our committee members and several guests. The lively discussion that followed was of great value to the Editorial Committee, who took careful note of the many comments made. You can be sure that the wise counsel given at this luncheon will be carefully heeded. Brief minutes were recorded and will be circulated to you for your files shortly.

At the luncheon meeting, many of you expressed the desire to be kept better informed and to participate more directly in the work even now during the planning stages. Accordingly, at the risk perhaps of being misunderstood, the Editorial Committee has decided to send out copies of its very preliminary generic checklist. Please read carefully the introductory pages so that you will understand why a list of this type has been compiled. I must stress that the list represents the first step in the process of compiling a complete catalog of North American genera for information retrieval purposes, and at this stage many synonyms have been left in the list deliberately so as not to lose information from the machine record. At the same time, we are trying to make use of the list in developing the botanical plan, and it is for this reason that we send it out.

The list will be sent to you under separate cover as soon as sufficient copies can be reproduced. We ask that you mark the list as follows, if time permits, and return it to us at your earliest convenience. If we receive your comments by 15 November, they can be taken into account at our next Editorial Committee meeting.

- (1) Mark genera you are interested in treating for FNA.
- (2) Write the names of others you recommend for particular genera beside the genera on the list.
- (3) In groups of your specialty, please feel free to add generic names or point out obvious synonymy. If you add names, please indicate the source of your information.

Please address correspondence to:

FNA Secretariat  
 Museum of Natural History  
 10th and Constitution Ave. N.W.  
 Washington, D. C. 20560

# AIBS AMERICAN INSTITUTE OF BIOLOGICAL SCIENCES

202/362-6733

3900 WISCONSIN AVENUE, N. W.

WASHINGTON, D. C., 20016



Flora North America Secretariat  
Smithsonian Institution  
Washington, D.C. 20560, USA

14 July 1969

## MEMORANDUM

To: All members of AIBS-FNA Advisory Council,  
Steering Committee, and Editorial Committee

From: Stanwyn G. Shetler, Secretary

Subject: Awarding of Grants by National Science Foundation

The big moment has arrived at last! On behalf of Dr. John R. Olive, Director of the AIBS and Principal Investigator, I take great pleasure in announcing to you that the National Science Foundation has just approved the two proposals for the Flora North America Project that have been pending since last fall. You will recall that the original proposal, which was divided into two proposals last fall at the request of the NSF, was first submitted in December 1967. The complex nature of our proposals caused an unusual amount of staff work for the NSF.

In letters dated 30 June 1969 and received on 8 July, the AIBS has been notified officially that the first proposal, entitled "Flora North America Project," has been funded for 12 months at the level of \$35,200, and the second proposal, entitled "An Information System for Flora North America: Planning Stage," has been funded for 30 months at the level of \$167,800.

These two grants have been made explicitly to support further program definition and planning and do not commit the NSF to long-term support. Such commitment, if it is made, will not be forthcoming before the next funding stage. Our objectives under the larger grant remain (1) to develop the full concept of the FNA information system, and (2) to prepare a working plan for designing and implementing this system. Activities under the smaller grant, made by the Systematic Biology Program, are to be directed toward crystallizing the administrative and botanical machinery and encouraging the development of a retrieval system by appropriate scientific planning.

The current AIBS ceiling for the expenditure of NSF funds will impose a strict limitation on the amount of money that can be spent immediately for FNA activities, but we hope that these problems can be resolved in a month or two.

Congratulations to all of you for your part in bringing about this success. Now the real work begins!

30 June 1969

TO: All members of Flora North America committees

FROM: S. G. Shetler, Secretary, FNA Project

SUBJECT: Events at 11th International Botanical Congress of special interest to committee members of FNA Project

26 August, Tuesday morning--Symposium, Section 7, Systematic Botany: North Temperate Floristics and the "Flora North America" Project

Organizer and chairman: Robert F. Thorne, Chairman, AIBS-FNA Advisory Council, Rancho Santa Ana Botanic Garden, USA

1. Floristics in the Union of Soviet Socialist Republics, Andrey A. Fedorov, Komarov Botanical Institute, USSR
2. Floristics in Europe, D. H. Valentine, University of Manchester, Great Britain
3. Floristics in North America, Arthur Cronquist, New York Botanical Garden, USA
4. The Flora North America Project, Roy L. Taylor, Chairman pro tem. of Editorial Committee, University of British Columbia, Canada
5. Flora North America as a Data Bank, Stanwyn G. Shetler, Secretary of AIBS-FNA Editorial Committee, Smithsonian Institution, USA
6. Summation, R. F. Thorne, Chairman of symposium

27 August, Wednesday noon--Luncheon: Business meeting and social gathering over lunch for all members of AIBS-FNA committees and invited guests.

11:30 a.m.-12 noon -- Cocktails, cash bar (\$0.85/drink)

12:00-1:00 p.m. -- Lunch: "Crab Trio" salad plate, \$3.60/person, including tax and gratuity. Regent's Room, University Tower Hotel (near campus)

1:00-2:00 p.m. --FNA Progress Reports followed by short talk on "Role of Advisory Editors and Regional Advisers in Flora Europaea Organization," by T. W. Böcher, Institute for Plant Anatomy and Cytology, University of Copenhagen, Denmark.

NOTE: Committee members from abroad will be guests of the American Institute of Biological Sciences (AIBS) for cocktails and lunch.

Continuing Demonstration

"Time-sharing Computers as Aids to Identification of Plant Specimens, Larry E. Morse, Michigan State University, USA (remote teletype terminal provided by General Electric); materials on automated bibliography.

AUTOMATED BIBLIOGRAPHY FOR  
FLORA NORTH AMERICA <sup>1</sup>

Data Collection Specifications <sup>2</sup>

by Stanwyn G. Shetler  
Pierre Morisset  
James J. Crockett  
Shigeko Rakosi

March 1968

1 Financed by Smithsonian Research Foundation Grant SG0621054

2 Developed from the initial proposal of Sergio Ahumada R.

NAME OF THE FIELD	REQUIREMENTS	SIZE OF THE FIELD
CONTROL INFORMATION		
Bibliographer	The bibliographer must write his surname in full, then his initials.	25 Alphabetic
Date	Write the date, then the first three letters of the month, then the year in full. Leave no space, e.g. 22Mar1968	9 Alphanumeric
Record no.	Each paper or book analyzed is a different record. Start at 1 every day.	2 Numeric
Page no.	Number every page of each record. If there is only one page, write: 1	2 Numeric
Action	Write "Add" or "Change" or "Delete", or leave blank	8 Alphabetic

N.B.: If more than one page is necessary, the control information MUST be filled in for every page. The "Bibliographic information" and the "General subject information" need not be repeated on the second and following pages.

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NAME OF THE FIELD	REQUIREMENTS	SIZE OF THE FIELD
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BIBLIOGRAPHIC INFORMATION

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Author(s) of documents

Write the name of the first or only author of the document. Only the surname must be written in full. For the first names write only initials.

140

The surname must be prefixed with an asterisk \*.

The order will be:

Alphabetic

Surname, First initial. Second initial. Third initial.

When the surname is double, the order will be:

First Last name Second Last name, First initial. etc.

(In that case only the first last name is prefixed with an asterisk.)

The second and successive authors are written exactly in the same way as the first. Successive authors are separated by a comma and a space; do not use "and" or "&".

The punctuation symbols , (comma) - (dash) \_ (space) . (period) should appear in the positions shown.

The symbol \_ was used here instead of space which will be the one used on the actual sheet.

Example:

\*Raven, P. H., \*Shetler, S. G.

When dealing with editors rather than authors, write (Ed.) after each name, e.g.

\*Stebbins, G. L. (Ed.), \*Baker, H. G. (Ed.)

which means that Stebbins & Baker are editors of the document.

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NAME OF THE FIELD	REQUIREMENTS	SIZE OF THE FIELD
Dates of publication	<p>The six possible cases are as follows:</p> <ol style="list-style-type: none"> <li>1. No date - leave blank.</li> <li>2. Single date - write the year, e.g. 1967</li> <li>3. Two or more exclusive dates, 1967, 1969.</li> <li>4. One or more pairs of inclusive dates, 1953-1957, 1961-1963.</li> <li>5. An open ended date, 1968- .</li> <li>6. A date which is not on the document, but which is known from other evidence: put the date in parentheses, e.g. (1963).</li> </ol> <p>The date will consist of four digits for year and a delineator of a , or - .</p>	29 Alphanumeric
Title of book or monograph or article	<p>Write the full title of the document without abbreviations.</p> <p>If the document is one of the papers published in a book: after the title, write "In" followed by the title of the book and put the editor in parentheses, e.g. In Reproductive Biology of Vascular Plants (G. Cook, ed.)</p>	250 Alphanumeric
Serial title abbreviation or publisher	<p>Write the serial title in its standard abbreviation form.</p> <p>For serials which have many series, the name or no. of the series is part of the serial title.</p> <p>For a book, write first the city or cities where the book was published, and then the name of the publisher. Put a colon between the (last) city and the publisher, e.g. Washington, D.C.: Smithsonian Institution Oxford, New York, Toronto: Pergamon Press.</p>	50 Alphanumeric

NAME OF THE FIELD	REQUIREMENTS	SIZE OF THE FIELD
Publication: collation	For serials, write first the number of the volume, then put the part or issue in parentheses, then a colon and finally the first and last page of the article, e. g. 24(5):329-337. 18(Spring): 408-425.  For books, write the last page of each section, followed by the letter "p". If there are illustrations, add "Ill." e. g. XXVI p, 326 p. Ill.	30 Alphanumeric
Publication: further specifications	Write down any other detail which can be necessary to complete the bibliographical citation, e. g. Trans. from RU (Translated from Russian) Repr. 1921 ed. (Reprinted from 1921 edition)	30 Alphanumeric
Language of document	Write the code of the language of the document (see Table I for codes)	2 Alphabetic
Language of abstract or summary	Write down the code of every language in which there is an abstract or summary (maximum of 3 languages)	8 Alphabetic

NAME OF THE FIELD	REQUIREMENTS	SIZE OF THE FIELD
GENERAL SUBJECT INFORMATION		
Geography	<p>Three fields (25 characters each) have been set up to accommodate three levels of specificity in describing the geographical region considered in the paper. Each field can be either a physiographic region, or a geopolitical region. The first field should be more inclusive than the second, and the second than the third.</p> <p>Do not abbreviate. The respective fields should contain:</p> <p>1st field: Continent or region.            2nd field: Country or region.            3rd field: State, province or region.</p>	75 Alphabetic
Subjects	<p>Four fields (30 characters each) have been set up to accommodate four subjects characterizing the document as a whole. The subjects are ranked, and from 1 to 4 are in a decreasing order of importance with respect to the document.</p> <p>Write subjects in full, using no abbreviations.</p>	120 Alphabetic
Subject: notes	<p>Write any additional information which may characterize the subject matter of the document, e.g.</p> <ul style="list-style-type: none"> <li>-specimens cited</li> <li>-synonymy given</li> <li>-very extensive morphological descriptions</li> </ul>	50 Alphanumeric

NAME OF THE FIELD	REQUIREMENTS	SIZE OF THE FIELD
Major taxon	<p>Write the name of the taxon which characterizes the document as a whole. For instance, if the paper discusses the various ways of dividing a family into tribes, enter the family.</p> <p>Three fields have been set up for this purpose. The first one should contain <u>only</u> a member of our accepted hierarchy. The second one must contain the rank abbreviation of the second name, which is entered in the third field. (The abbreviations of the different taxonomic ranks can be found in Table II).</p>	$24 + 3 + 24 = 51$ Alphabetic

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 SPECIFIC SUBJECT INFORMATION
 

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NAME OF THE FIELD	REQUIREMENTS	SIZE OF THE FIELD
Entry code	<p>This is a four-letter code indicating for which specific kind of information a given taxon is entered in this section of the format. Table III lists and explains the codes.</p> <p>When the taxon is an hybrid, the alphabetic code is suffixed with a numeral (See Table III under "Hybrid names").</p> <p>Each entry <u>must</u> start with such a code</p>	<p>4</p> <p>Alphabetic 1</p> <p>Numeric</p>
Name of the taxon	<p>Four fields have been set up to accomodate four names.</p> <p>In the first field, only a member of our accepted hierarchy (Phylum, Class, Order, Family, Genus) should be entered.</p> <p>The three other fields are preceded by an abbreviation which indicates the rank of the following name. The abbreviations are listed in Table II.</p> <p>e. g.    Campanula    SPE rotundifolia    SSP alaskana                  "Campanula    SSC Heterophyllae</p> <p>If the taxon entered is composed only of one or two names, use only the 1st or the 1st and 2nd fields, not the 3rd and the 4th.</p>	<p>96 + 9</p> <p>Alphabetical</p>
Taxon: Author(s) name	<p>Write the name of the author(s) of the taxon exactly as it is written in the document.</p> <p>When there is more than one name, each name must be separated from the next one by a comma (,), except when these names are linked by <u>ex</u> or <u>in</u>, e. g.</p> <p>A. Löve, D. Löve            (for A. Löve &amp; D. Löve)        (Greenm., Larisey) Fern.</p> <p><u>Authors</u> of new names or new combinations should be written as fully as possible, i. e. as the author(s) signed the document, without abbreviating the first names or the surname.</p> <p>Each name (not the surname as for the document's authors) must be prefixed with an asterisk, e. g.</p> <p>*Merritt L. Fernald        *A. Löve, *D. Löve</p>	<p>40</p> <p>Alphabetical</p>

NAME OF THE FIELD	REQUIREMENTS	SIZE OF THE FIELD
Location of type specimens	<p>List acronyms of herbaria where a type specimen has been deposited. Each acronym should be preceded by the abbreviation of the kind of type material:</p> <p>HO Holotype  LE Lectotype  IT Isotype  SY Syntype  NE Neotype  IL Isolectotype  IS Isosyntype  IN Isoneotype  TM Type material (cotype, paratype, undetermined kind of type material)</p> <p>The abbreviation and the acronym should be linked by a hyphen and each pair of symbols separated from the next one by a comma, e.g.  HO-US, IT-MTJB, TM-K</p>	40 Alphabetic
Geographical origin of type material or of chromosome no.	<p>This field applies to the origin either of type material or of plants whose chromosome no. has been determined</p> <p>For USA, Canada and Mexico, write state or province in full.  For elsewhere, write country in full</p>	25 Alphabetic

NAME OF THE FIELD	REQUIREMENTS	SIZE OF THE FIELD
<u>Chromosome Information</u>		
Stage	Write G for a gametic count and S for a somatic count	1 Alphabetic
Count	<p>Write the number of chromosomes</p> <p>If the number is approximate, write "ca" before the number</p> <p>When B-chromosomes are reported, write the number of normal chromosomes, then a comma (,), then the number of B-chromosomes and finally the letter B.</p> <p>When a variable number of B-chromosomes is reported, write the lowest and the highest number separated by a hyphen.</p> <p>e. g.</p> <p>22</p> <p>ca24</p> <p>24,3B</p> <p>24,2-4B</p>	<p>10</p> <p>Alphanumeric</p>
Origin of material	<p>Write: W for material of known wild origin (transplants or seeds)</p> <p>C for material in cultivation whose precise wild locality of origin is unknown, or for material grown from seed collected in botanical gardens, etc.</p> <p>U for unknown, i. e. the information is not given.</p>	<p>1</p> <p>Alphabetic</p>
Sample size	Write the number of plants on which the chromosome no. reported above is based.	<p>3</p> <p>Numeric</p>
Karyotype	Write K if the karyotype has been studied. Otherwise leave blank.	1 Alphabetic
Meiotic pairing	Write P if the pairing has been studied. Otherwise leave blank.	1 Alphabetic

NAME OF THE FIELD	REQUIREMENTS	SIZE OF THE FIELD
Remarks	<p>This is a display field which could contain:</p> <ul style="list-style-type: none"> <li>basionym (for a new combination)</li> <li>page and fig. (for new taxon or new comb.)</li> <li>other important information, e.g. "closely related to <i>T. repens</i>"</li> <li>the type species for a new genus</li> <li>precise locality for a new and important distr. record</li> <li>life form</li> <li>type of pollen grain</li> <li>etc.</li> </ul>	<p>50 Alphanumeric</p>

TABLE I

Abbreviation Codes of Languages

Afrikaan	AF	Lithuanian	LI
Arabic	AR	Norwegian	NO
Armenian	AM	Polish	PO
Bulgarian	BU	Portuguese	PR
Chinese	CH	Rumanian	RM
Czech	CZ	Russian	RU
Danish	DA	Serbo Croat	SC
Dutch	DU	Sinhalese	SH
English	EN	Spanish	SP
Estonian	ES	Swedish	SW
Finnish	FI	Turkish	TU
French	FR	Ukranian	UK
Georgian	GO		
German	GE		
Greek	GR		
Hebrew	HE		
Hindi	HI		
Hungarian	HU		
Icelandic	IC		
Italian	IT		
Japanese	JA		
Latvian	LA		

TABLE II

Abbreviations of taxonomic ranks

FHY	Phylum or Division
SPH	Subphylum or Subdivision
CLS	Class
SCL	Subclass
ORD	Order
SOR	Suborder
FAM	Family
SFA	Subfamily
TRB	Tribe
STB	Subtribe
GEN	Genus
SGN	Subgenus
SEC	Section
SSC	Subsection
SER	Series
SSR	Subseries
SPE	Species
SSP	Subspecies
VAR	Variety
SVR	Subvariety
FOR	Form
SFM	Subform

TABLE III  
Entry codes

The information about specific taxa which will be entered in the last part of the format ("Specific Subject Information") has been divided into two categories: primary information and secondary information.

The primary information, wherever it occurs, will have to be entered for each taxon.

The secondary information will be entered only when the bibliographer judges it to be of special interest.

These two categories of information include the following subjects, and each one will be individually explained in the next pages.

Primary information	1. New name	N---
	2. New combination	X---
	3. Chromosome number	CHRO
Secondary information	4. Type species	T---
	5. Systematic importance	SYST
	6. Illustration	ILLU
	7. Distributional importance	DIST
	8. Distribution map	DMAP
	9. Life form	LIFO
	10. Life cycle	LICY
	11. Pollen description	POLL
	12. Aneuploidy	CHRA
	13. Apomixis	APOM
	14. Cytogenetic importance	CYTO
	15. Ecological importance	ECOL
	16. Geneecological importance	GNEC
	17. Biosystematic importance	BIOS
	18. List	LIST
<u>Hybrid names.</u>		

When information is given on any hybrid taxon, the alphabetic entry codes listed above should be followed by a numeral (1 or 2 or 3 or 4). The value of the numeral will indicate before which name an "x" should appear in the name of the taxon, e.g.

x <u>Triticale</u>	would demand	1
<u>Streptopus</u> x <u>oreopolus</u>	would demand	2
<u>Campanula rotundifolia</u> x <u>cochleariifolia</u>	would demand	3
<u>Fragaria hirta</u> x <u>Potentilla lanulosa</u>	would demand	3

Therefore, DMAP2 would be the entry code for a distribution map of Streptopus oreopolus, NSFE2 the code for a new hybrid species, etc.

The bibliographer must not enter the "x" as he writes down the taxon name in the appropriate fields. Only the numeral which ends the entry code will indicate the position of the "x" to the computer.

Entry codes explained.

1. New name

N---

The letter N will be followed by the abbreviation of the rank of the new name (see Table II for rank abbreviations), e.g.

NFAM      New Family  
NGEN      New Genus  
NSPE      New Species

The type species of a new supraspecific taxon should be entered in the "Remarks" field. This field could give the page where the new taxon is described, the Fig. no. if any, and any other important display information, e.g. "closely related to *C. hirta*", etc.

2. New combination.

X--

The letter X will be followed by the abbreviation of the rank of the new combination, as for the new names. The "Remarks" must give the basionym and its author, and if it is of special interest, the reason for the new combination.

3. Chromosome number.

CHRO

The information should go in the appropriate fields. Only the numbers which are published for the first time should be entered. (See 12. Aneuploidy, below.)

4. Type species.

T---

When a type species is designated for a genus or any infrageneric but supraspecific taxon. The letter T must be followed by the abbreviation of the rank of the taxon for which a type species is designated, e.g.

TGEN      Type species designated for a genus  
TSEC      Type species designated for a section

The taxon is entered in the name fields, and the name of the type species is entered in the "Remarks" field.

5. Systematic importance

SYST

This category should be used for any extensive description of a species, or for the presentation of new diagnostic characters, or for a new treatment of interspecific variation, etc. The "Remarks" should tell briefly which kind of systematic information is given.

6. Illustration. ILLU  
When a good illustration of a taxon is published.  
The "Remarks" can give the fig. no., the page, and the type of illustration, e.g. line drawing or photograph.
7. Distributional importance. DIST  
When an important new record is given, or when an important aspect of the distribution of a taxon is discussed.  
The "Remarks" could give the precise locality of a new record.
8. Distribution map. DMAP  
When the distribution map of a taxon is published.  
The "Remarks" could specify the type of map and its limitations.
9. Life form. LIFO  
When the life form is given or described.  
The "Remarks" should give the name of the life form, e.g. hemicryptophyte.
10. Life cycle. LICY  
When the life cycle is described or studied.  
Any special detail to be entered in the "Remarks" field.
11. Pollen description. POLL  
When the pollen or spore of a taxon is described.  
The details and descriptive terms can be entered in the "Remarks" field, e.g. tricolpate, etc.
12. Aneuploidy. CHRA  
When a chromosome number is entered because of an aneuploid difference from the usual number.
13. Apomixis. APOM  
When apomixis has been shown to occur in a given taxon, or when its mechanism has been studied.  
The "Remarks" can give further details, e.g. agamospermy; precise mechanism unknown.
14. Cytogenetic importance. CYTO  
When information is given on some cytogenetical phenomenon characterizing a taxon or a genotype of a taxon.  
The "Remarks" should say which phenomenon is present in the taxon, e.g. "widespread chromosome breakage at meiosis," or "pairing studies reveal autotetraploidy," etc.

15. Ecological importance.

ECOL

When there are ecological or phytosociological data on a given taxon, e.g. "occurs at pH 4.5 - 6.8"

16. Genecological importance.

GNEC

When genecological observations are presented, e.g. notes on phenotypic variation, description of ecotypes, existence of clinal variation, etc.  
The "Remarks" should say which kind of genecological phenomenon is shown to occur.

17. Biosystematic importance.

BIOS

For any kind of data of importance in the study of variation, but which is not covered by the previous entries, e.g. "has been introduced by *Fragaria hirta*".

18. List.

LIST

This entry code should be used when many taxa have been studied from certain points of view which are accounted for by the four subjects entered in the "General Subject Information".  
If, for instance, four subject entries describe the ways in which 5 species have been studied in a given paper: instead of entering each of the 5 species four times in the "Specific Subject Information" part of the format, each species is entered only once under the code LIST.

FLORA NORTH AMERICA DATA COLLECTION WORK SHEET

BIBLIOGRAPHER ----- DATE ----- RECORD NO. --- PAGE NO. --- ACTION -----

AUTHORS -----  
 DATES -----  
 TITLE -----  
 SER. PUB. -----  
 COLLAT. -----  
 SPECIF. ----- LANG OF DOC -- SUMM OR ABSTR -- --  
 GEO/CON. ----- COUNTRY -----  
 STA. PRO. -----  
 SUBJ. 1. ----- 2. -----  
 3. ----- 4. -----  
 NOTES -----  
 HAJ TAX. ----- RANK -- NAME -----

1. ENTRY CODE --- NAME----- RANK--- NAME----- RANK--- NAME-----  
 RANK---NAME----- AUTHORS-----  
 TYPE AND LOCATION----- GEOGRAPHICAL ORIGIN-----  
 CHROME INFOR./STAGE-- COUNT----- ORIGIN--SAMPLE-- KARYOTYPE-- PAIRING-- REMARKS-----
2. ENTRY CODE --- NAME----- RANK--- NAME----- RANK--- NAME-----  
 RANK---NAME----- AUTHORS-----  
 TYPE AND LOCATION----- GEOGRAPHICAL ORIGIN-----  
 CHROME INFOR./STAGE-- COUNT----- ORIGIN--SAMPLE-- KARYOTYPE-- PAIRING-- REMARKS-----
3. ENTRY CODE --- NAME----- RANK--- NAME----- RANK--- NAME-----  
 RANK---NAME----- AUTHORS-----  
 TYPE AND LOCATION----- GEOGRAPHICAL ORIGIN-----  
 CHROME INFOR./STAGE-- COUNT----- ORIGIN--SAMPLE-- KARYOTYPE-- PAIRING-- REMARKS-----
4. ENTRY CODE --- NAME----- RANK--- NAME----- RANK--- NAME-----  
 RANK---NAME----- AUTHORS-----  
 TYPE AND LOCATION----- GEOGRAPHICAL ORIGIN-----  
 CHROME INFOR./STAGE-- COUNT----- ORIGIN--SAMPLE-- KARYOTYPE-- PAIRING-- REMARKS-----
5. ENTRY CODE --- NAME----- RANK--- NAME----- RANK--- NAME-----  
 RANK---NAME----- AUTHORS-----  
 TYPE AND LOCATION----- GEOGRAPHICAL ORIGIN-----  
 CHROME INFOR./STAGE-- COUNT----- ORIGIN--SAMPLE-- KARYOTYPE-- PAIRING-- REMARKS-----

September 6, 1968

Dr. James Soper  
National Museums of Canada  
Museum of Natural Science  
Ottawa 4, Ontario

Dear Dr. Soper:

I invite you herewith to a demonstration of TAXIR, an information retrieval system for biology. We are inviting to this demonstration a number of museum directors, curators and biologists in other institutions in charge of large data banks. All told, we expect about forty scientists to attend.

The meeting has been scheduled for October 7 and 8, a time we hope will be convenient for you. Enclosed are pertinent items concerning the schedule, travel and accommodations arrangements. Please return the form enclosed so that we may make precise arrangements for your stay.

The demonstration will stress information pertinent to the biologist, and does not intend to be oriented to the systems analyst or computer programmer. You will therefore, be able to assess the value of the TAXIR methods in terms of your own scientific endeavor. If, after this assessment, you discover some value in the methods, we will give your programmers a demonstration concerning the intricacies of the software, and methods of mounting this system on your own computer system.

I also enclose a draft of a letter concerning some of the operations of the Flora of North America. Please look this draft over, modify it in any place you feel it needs modification, or make whatever decision you care to regarding it. I am sending a draft to Gomez-Pompa, with whom I have discussed this problem earlier. He and I agree that something needs to be done, but we reached no agreement as to what exactly should be done. Perhaps some other procedure is more appropriate, but I feel that our competence has been by-passed in the decisions for the position of systems analyst (or manager), and that we should make known our objection to present procedures with regards to this very significant position.

I look forward to having you with us here in Boulder.

Sincerely,

David J. Rogers  
Professor of Biology

Enclosures

September 12, 1968

Dr. Arturo Gomez-Pompa  
Instituto de Biologia  
Apartado Postal 70-233  
Mexico 20, D.F.

Dear Arturo:

Enclosed are pertinent forms for the demonstration of TAXIR, our computerized information retrieval system. We expect to have about forty scientists who are directors, curators or systematists in museums, and other biologists with large data banks. I trust that you will be able to join us at this demonstration. Unfortunately, we have no funds to assist in travel.

I also enclose a draft of a letter on the subject we discussed during your visit. Please make any modifications you choose, and suggest any more pertinent items which we might include. I would also appreciate your suggestions as to whom this comment might be directed. Should we address it to Stan Shetler, and ask him to forward it to the appropriate people? I have sent a copy of this draft to Dr. James Soper, asking for his advice as well.

I look forward to seeing you here in Boulder in October, and also your response to the draft for FNA.

Sincerely yours,

David J. Rogers  
Professor of Biology

Enclosures

14 October 1968

Dr. Arturo Gomez-Pompa  
Dept. de Botanica  
Instituto de Biología  
Universidad Nacional Autónoma  
México 20, D.F.

Dr. James H. Soper  
National Museum of Natural Sciences  
Ottawa 4, Ontario

Dear Arturo:

This letter is a follow-up on the concern about the systems manager for the Flora of North America. I spoke to Stan Shetler at length on this subject a week ago and discovered that no final decisions have been made at all and that the reason for this activity was a requirement from the Office of Scientific Information Services of the National Science Foundation to examine in more detail computing needs for the FNA. Apparently OSIS considers the FNA project more in the line of information retrieval than in terms of the Flora itself. They are apparently willing to give large sums to the actual operation of FNA once they are satisfied that the project will be as full oriented toward computerized information retrieval as it can be within the framework of the Flora.

Stan apparently has not been used to communicating with his advisory board and has depended more on the editorial board and the steering committee (which is appropriate) for his advice. Both Askell Löve and I strongly recommended that he institute a method of communicating with the advisory committee especially in matters in which some of us have special concern. He said of course we would be consulted when it came to choosing an individual for the job of systems manager, but that the point was moot until we have funds from OSIS to actually look for some individual who might fill the post. Shetler is proceeding to seek for other funds for this operation.

Under these circumstances I do not feel that we should send forward any letter such as the draft which I sent to you but rather wait for developments and discover when the opportunity is ripe who the systems manager should be. I trust that you will concur in this feeling.

I am sorry that you did not have an opportunity to join us for the demonstration of our information retrieval system last week. We feel that it was a successful and useful gathering. Under separate cover I am sending you the working papers which were distributed to participants in the demonstration. While these papers are not entirely self-explanatory, I believe that with your own experience in this field you can see the direction which we have taken and the program which we have developed. There will of course be a much more detailed description of the system at a later date.

Sincerely,

D.R.

I have no changes to suggest.

S.

J. H. SOPEK

## Draft

Letter to Advisory Committee, FNA, and to Dr. John Olive, AIBS

At the meeting of the Advisory Committee for the Flora of North America in Columbus, Dr. Ritchie Bell raised the issue of the direction and guidance of the FNA project, a point we felt to be well taken. He was rightly concerned about the decision-making process, and the role of AIBS and ~~the~~ <sup>NSF</sup> in directing this major effort.

We wish to raise a similar question (or concern) about the appointment of a high-salaried "systems manager," where a blue-ribbon panel of outside "experts" suggested names of the very best computer systems managers available in the country. While we agree, in essence, that a manager is needed in the central office of the secretary, we wonder what role we, as members of the Advisory Committee, have to play in this selection. Apparently, the blue-ribbon panel has already made some suggestions for this position, before we even knew that there was to be such a position.

We think it pertinent to ask the basis for describing a systems manager position, such that the blue-ribbon panel could make a decision about the one needed for FNA. Since "systems manager," as a title, can cover a multitude of activities, how is the competence of an individual judged, with relation to needs in FNA? Apparently, the salary is the only measure of assuring confidence that the right man is found, and also apparently, because of the salary, only the very best will apply for the job, or accept it, once offered.

Since the job of the systems manager is of very fundamental importance in the FNA operation, we think it of great importance to proceed in an orderly manner to secure that which is needed, and since we in FNA must finally be the deciding group, it is necessary that we be involved in the whole process of defining and selecting.

Since some competence on the use of computers in taxonomy is to be found among members of the Advisory Committee (Soper, Gomez-Pompa, Rogers, and perhaps others) as well as in the person of the secretary, Shetler, we wonder why we should not be consulted in the decision-making process. It would seem from the method of selection, that OSIS (and AIBS?) is not aware of this competence, but it would also seem that they should be made aware of it, and therefore ask questions of the Advisory Committee before proceeding as they apparently have done.

There is no problem of time: the money for such a position still is not granted. But we see some problems which may not have occurred to the people in the Office of Scientific Information Service. The over-riding problem is that of training. While we may get the very best systems man, he probably has no knowledge of the needs of the taxonomists in FNA, and will have to spend many unproductive hours learning what is wanted and what is not wanted. Clearly, the systems manager will have to gain this knowledge from one or more taxonomists. We find it unacceptable to pay the systems manager a high salary during this learning period and the taxonomist(s) giving the training nothing.

We recommend that there be communication amongst Advisory Committee members with regards to the position of systems manager, by mail, if funds are not available for travel. We believe we can effect a more efficient arrangement, and save considerable amount of time and money for the development of the necessary computer tools for FNA. But we particularly recommend that the FNA/steering and Advisory Committee be in charge of ~~its own development~~ the scientific aspects of the work.



NATIONAL MUSEUMS OF CANADA - LES MUSÉES NATIONAUX DU CANADA

NATIONAL MUSEUM OF NATURAL SCIENCES  
LE MUSÉE NATIONAL DES SCIENCES NATURELLES  
OTTAWA

OUR FILE NO.  
NOTRE DOSSIER NO

Ottawa 4, September 20, 1968.

Dr. David J. Rogers,  
Taximetrics Laboratory,  
Dept. of Biology,  
University of Colorado,  
Boulder, Colorado 80302,  
U.S.A.

Dear Dave:

I have read carefully the draft of your proposed letter regarding the method of selecting a "systems manager" for the FNA project.

As I mentioned during our telephone conversation on September 12th, I have only a limited background on this matter. I gathered from discussions at the FNA meetings in Ottawa last May that considerable financial support for FNA might be forthcoming if the project included data-processing applications. It was agreed, as I understand it, that FNA could not afford to lose this opportunity of getting funds but most committee members were apprehensive that the EDP aspects might overshadow the main aim of the project, i.e. the writing of the Flora. Also, committee members felt that to ensure the success of the EDP part of the program and to relieve botanists of major involvement in EDP matters it would be essential to have a systems manager.

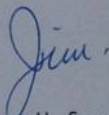
I do not recall, however, what, if any, decisions were made regarding the method of selecting or appointing the most suitable person for this important job. As I did not attend the AIBS meetings in Columbus, I can not appreciate fully your reference to Dr. Ritchie Bell's concern about the direction and guidance of the FNA project.

After reading your draft, however, I do agree with the point you raise about consultation with the Advisory Committee. Perhaps the policy-/or decision-makers in Washington are planning to consult the Advisory Committee in the matter of selecting a systems manager. Do you have knowledge to the contrary?

I am flattered that you included my name in your draft and would admit to having some knowledge and experience (if not also competence?) in the general field of computers in relation to systematics and phytogeography. I would not presume, however, to consider myself qualified in the matter of selection of a systems manager. I do not know anyone whom I could recommend for the FNA project nor would I be likely to know personally anyone who might apply for such a position.

If in the light of the last sentence, you feel it would be of any help in supporting your proposed letter, I would certainly be willing to send in a copy with a brief covering letter stating that I agree fully with the principle that the Advisory Committee should be asked for advice on the selection of a systems manager.

Yours sincerely,



James H. Soper,  
Chief Botanist.

JHS/jl

INSTITUTO DE BIOLOGIA  
DEPARTAMENTO DE BOTANICA



UNIVERSIDAD NACIONAL  
MEXICO

September 18 1968

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

Dear Dave:

I received your letter and your draft of the letter to be sent to the Advisory Committee, FNA and to AIBS. I think your letter is quite appropriate but does not go directly to the main point: why do we need an outsider for the position of systems manager for FNA? Is it true that we do not have such a person in our botanical community now? Is there any reason for ignoring all the efforts, time and money that several Institutions and persons in North America (including Mexico) have spent?

I think that these questions should be raised because I believe that many persons do not know what is going on in this field. Probably many persons also do not know that a large group of specialists in this field got together in Mexico last year to discuss their methods and exchange ideas.

Thank you for the invitation to the demonstration of your system. I am sorry, but I can not go, nor any of my collaborators because of economic problems. I wish your the best success.

Yours very truly

Arturo Gómez-Pompa  
HEAD OF DEPARTMENT.

MAR 5 1968

NATIONAL SCIENCE FOUNDATION

WASHINGTON, D.C. 20550

March 1, 1968

Dr. David J. Rogers  
Department of Biology  
University of Colorado  
Boulder, Colorado 80302

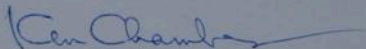
Ref: B8-1102R

Dear Dave:

This will acknowledge your letter of February 23, 1968, concerning your interest in and support of the project for Flora North America.

We are pleased to hear that you have offered to help in the development of methodology for computer applications in the Flora project. This is an aspect that is of considerable interest to the Foundation and is certainly an important part of the grant application which the AIBS-FNA group has before us at the present time.

Yours sincerely,



Kenton L. Chambers  
Program Director for  
Systematic Biology

Copy to: E. R. Sohns  
G. B. Ward  
H. E. Bamford

23 February 1968

Dr. Kenton Chambers  
Program Director, Systematics  
National Science Foundation  
Washington, D. C. 20550

Dear Ken,

I am writing an unsolicited letter to support the efforts of North American Flora. As you know my major concern in these efforts deals with the problem of information retrieval systems. I think that the procedures so far developed for using computers as support mechanisms for the development of Flora is good. I have offered my own support to the development of methodology for the use of the computer on F.N.A. studies and Stan Shetler has graciously accepted the offer and I have every confidence that we will be able to cooperate in the development necessary to support the F.N.A.

Sincerely,

David J. Rogers  
Professor of Biology

DJR:GM