

NEMAS
NOMENCLATURAL COMPILATION OF PLANT NEMATODES

USER'S MANUAL

*

Renaud Fortuner

Program written by Grace E. Liu

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California Department of Food and Agriculture
Analysis and Identification
1220 N Street
Sacramento, California 95814
U.S.A.

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NEMAS

Nomenclatural Compilation of Plant Nematodes

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INTRODUCTION TO NEMAS

The project NEMAS was initiated when Drs. A. C. Tarjan and Michel Luc asked me to update the book of Tarjan & Hopper: Nomenclatorial Compilation of Plant and Soil Nematodes, published in 1974 by the Society of Nematologists. I wish to acknowledge the encouragement and support provided by Dr. Tarjan for this project.

Because of the ever-changing status of nematode nomenclature, a computerized datafile was preferred to a printed book. To keep the cost of data entry to a minimum, only plant nematodes were included. NEMAS covers the species in Tylenchida (but Sphaerulariina incomplete), Aphelenchida, Longidoridae, and Trichodoridae.

In addition to the entries from the book of Tarjan and Hopper, NEMAS has been updated from various sources, including the index kept by Dr. Tarjan and the relevant abstracts published in Helminthological Abstracts, Series B. It is planned to keep NEMAS up to date by quarterly revisions.

Like the book of Tarjan and Hopper, NEMAS provides nomenclatural and taxonomic information on the species included. In addition to this first type of searches, it is possible to obtain from NEMAS lists of species described in the genera covered.

I have tried to be as accurate and complete as possible. However, errors and omissions are bound to occur in a project of this size. I urge all the users of NEMAS to inform me of the mistakes they discover. They will be corrected in the next update of the file.

ARRANGEMENT OF THE RECORDS

A record includes the data about one nematode species. NEMAS included 3024 records in January 1984.

Each record is arranged more or less as it was in the book of Tarjan and Hopper. There are a few differences between NEMAS and Tarjan & Hopper's book:

1. When a species that belonged to a genus A is proposed as a new synonym of another species in a different genus B, the author(s) responsible for the synonymization is considered to have created a new combination, even if he has not expressly written the new binomen in his article. The new combination is included in the list of names of the nematode. Note that this has yet to be entered for a number of records. Every presumptive new combination has to be checked and it will take a long time.
2. As in Tarjan and Hopper's book, the successive names of a nematode that has been shifted to different genera, are listed. In NEMAS, the "current name" is the name proposed as valid in the most recently published taxonomic article. The "past names" are all the other names of the species, including the original name. No attempt has been made to judge the publications used in NEMAS datafile; all were included, regardless of my personal opinion of their scientific value.
3. NEMAS datafile includes references to articles with redescrptions of known species, whether or not such articles modify the nomenclature of the species. Only articles published in the last dozen years are included for the moment. Articles with electron microscope studies have been noted "SEM" or "TEM." Articles with immuno-electrophoresis studies have been noted "IEP."

NOTE: Accents cannot be entered in a computerized datafile. Foreign author names had to be spelled without accents.

Russian names have been transliterated according to the standard used in Helminthological Abstracts. No exceptions to this rule were accepted. For example, Filipjev and Kirjanova are spelled Filip'ev and Kir'yanova.

FORMAT OF THE RECORDS

Each of the 3024 records (January 1984) in NEMAS is arranged under six fields:

1. Record name. This is the name (binomen, trinomen, or quadrinomen) of the nematode being described in the record, as proposed by the original author.

The authority is not included. Any incorrect original spelling has been corrected according to the Code of Nomenclature.

The first field constitutes the permanent name of the record. It is used mostly for computer searches.

2. Current name. The complete name of the species in the record, including authority and reference, as proposed as valid in the most recently published taxonomic publication. The mere mention of a binomen in a nontaxonomic article is not accepted as a proof of validity. There must be a justification, however succinct, by the author of the article, of his decision about the validity of the binomen. If the original name is still the valid name, it will appear in this second field.
3. Other names. The successive names of the species in the record as proposed by successive authors. This includes the original name, if it is no longer in current use.
4. Synonymy. List of other species that have been proposed as junior synonyms of the species in the record.
5. Status. Any nomenclatural or taxonomical information about the species in the record. This includes placement in species inquirenda (SP INQ), synonymization to a senior species (SYN OF), homonymy, replacement names, validity, etc.
6. Morphology. References of articles where the species in the record has been redescribed.

Results of searches by NEMAS can be received either as entire records (six fields per record) or as one or some selected fields. In this case, you will have to enter the field reference number(s) - 1 to 6 - of the field(s) you want to see.

REFERENCES

In order to reduce the size of the datafile and the cost of its storage, a complete list of references has been omitted. The articles covered by the datafile can be found in three different ways:

- From the book "Nomenclatorial compilation of plant and soil nematodes," Tarjan & Hopper, 1974. This book contains a list of 1888 numbered references. In the datafile, the mention "SEE 1077" means "see article number 1077 in the reference list of Tarjan & Hooper, 1974." This book is available from Society of Nematologists.
- From Helminthological Abstracts, Series B. Articles published after 1971 are not included in Tarjan & Hopper's book. Most have been abstracted in Helminth. Abstr. (B). In the datafile, the mention "SEE HA44 564" means "see the article abstracted under number 564 in Helminth. Abstr. (B), volume 44." I thank Mr. P. S. Goosh, Assistant Director of the Commonwealth Institute of Parasitology, for his kind authorization to use Helminthological Abstracts in NEMAS datafile.
- A few articles were not, or have not yet been, abstracted in Helminth. Abstr. A short reference to these articles is kept in a separate file. "SEE R17" means "see reference number 17 in file R." See option "REF" to retrieve these references.

UPDATES

When the master datafile was first created, in January 1984, it included the articles abstracted in Helminthological Abstracts (B), up to Vol. 52(4), December 1983.

The master datafile is updated quarterly, in March, June, September, and December.

When you make a search, the program always gives the date of the latest update of the master datafile. You may later update the results of this first search by searching only the records updated or created since the date of the first search.

You are asked to give the update coded name. This consists of three letters (for the quarterly revision following the date of your first search) and two numbers (for the year).

For example, let's suppose you have searched the master datafile in January 1984, and you want to update this search two years later. To search the updates since March 1984 you must enter the update coded name as "MAR84".

(Other examples: JUN87, SEP85, DEC86, etc.)

USING THIS MANUAL

- Underlining: In the examples, any text that must be typed by you, the user, is underlined.
- > : The signal ">" displayed by your terminal is a prompt that indicates that the program expects an answer from you.
- [RETURN]: Indicates that you must punch the key marked RETURN or RTRN on your keyboard.
- You must know that you have to punch the RETURN key at the end of every line you enter. Consequently, [RETURN] is not normally repeated in the examples.
- HELP: Whenever the program asks you to choose one of several options, the last option is "HELP." By typing "HELP", you will obtain a short explanation of the different options proposed.
- EXPLAIN: The option "EXPLAIN" gives you a longer explanation on how NEMAS datafile is organized. You may obtain the text of all four EXPLAIN message through the menu option "INFO" or by reading the present manual.
- [CONTROL] S: Punching these two keys together will stop temporarily the text being displayed on your screen. Punch the space bar to resume the display.
- Capital letters: In the present manual, the examples are written in capital letters. However, NEMAID also accepts entries typed in lower case letters.
- MENU: The menu includes seven subprograms that can be accomplished by NEMAS (see page 10). You can always return to the menu by typing "MENU" and select one of the subprograms.
- If you already know which subprogram you want to use, you can enter its code name directly.

CONNECTING WITH NEMAS

1. Connect with UC BERKELEY through TELENET or through your national public data network according to the instructions from the network.
2. Type "NEMAS".

The program comes up with a title page.

In the title, the date of the last update of NEMAS master file is given.

Example:

(phone network access number)

[RETURN] [RETURN]

TELENET

916 19B

TERMINAL=

[RETURN]

@

C 41587 [RETURN]

415 87A CONNECTED

C F & O PORT SELECTOR 2

REQUEST: AMBER

Connecting

4.2 BSD UNIX (ucbamber)

login: NEMATODE

password: SC01777

Last login: Thu Jul 26 13:11:39 on ttyi4

TERM=(tvi920c): [RETURN]

%

NEMAS

NEMAS

NOMENCLATURAL COMPILATION OF PLANT NEMATODES

*

RENAUD FORTUNER

CALIFORNIA DEPARTMENT OF FOOD & AGRICULTURE
1220 N STREET, SACRAMENTO, CA. 95814, USA

*

PROGRAM WRITTEN BY GRACE E. LIU

*

NEMAS IS UPDATED FROM VARIOUS SOURCES AND FROM HELMINTHOLOGICAL ABSTRACTS
(B) UP TO AND INCLUDING VOL. 52(4), DECEMBER 1983

ENTER: YOUR OPTION CODE NAME/MENU/HELP

>

MENU

NEMAS includes seven options represented by code names (in caps below).

FILELIST: The entire NEMAS datafile, either the master file or the updates since a particular date, will be transmitted to your terminal. You may receive it on your CRT screen, copy it on tape, or print it out, depending on how you have set up your terminal.

GENUSLIST: Directory of the genera included in NEMAS. Names of genera in Sphaerulariina, incomplete, are not included.

SPECIES: Search to locate a particular record. This option gives nomenclatural and taxonomical information about a particular nematode.

GENUS: Search to locate all the species in a particular genus, or in several genera. You can search either the current species only, or both current and past species included in the genus/genera.

REF: References of the articles noted "SEE R" in NEMAS datafile.

INFO: Information about NEMAS. This option gives on-line a resume of some of the most important facts about NEMAS explained in this manual.

END: This option terminates your use of NEMAS and returns to the main system.

Example:

ENTER: YOUR OPTION CODE NAME/MENU/HELP

>

MENU

OPTION_CODE_NAME

OPTION_CONTENTS

FILELIST
GENUSLIST
SPECIES
GENUS
REF
INFO
END

LISTING OF THE ENTIRE DATAFILE
LIST OF GENUS NAMES IN "NEMAS"
SEARCHES ON SPECIES NAMES
SEARCHES ON GENUS NAMES
"SEE R" REFERENCES
INFORMATION MESSAGES
END OF SESSION

PLEASE SELECT ONE OPTION AND ENTER ITS CODE NAME

>

OPTION FILELIST: LISTING OF THE DATAFILE

With the first option, you can receive either:

- the entire NEMAS datafile, type "M";
- or the updated file since a particular date, type the code name of that update (see page 6 or ask "INFO" for on-line information about the update).*/

You can receive the datafile on your CTR screen, copy it on a tape, or have it printed, according to the way you have set up your terminal.

NEMAS master datafile contained 3024 records in January 1984, which represents about half a million characters. Depending on the speed of transmission you are using, it will take a long, or a very long time to transmit the entire file by phone. The transmission will stop after the first five records to let you make a rough estimate of the time it will take to transmit the entire file. You may use this preliminary transmission to check the proper operation of your terminal.

After the first five records, you are asked to decide:

- either interrupt the option and return to menu. Type "N".
- or, proceed with the option FILELIST, type "Y". The entire file will then be transmitted, including the first five records.

NEMAS updated files are much shorter and will be transmitted directly in their entirety.

*/NOTE: The option "UPDATE CODED NAME" was not available when the datafile was first made public on July 27, 1984. It will become available with the first update of NEMAS, probably in September 1984.

Example:

ENTER: YOUR OPTION CODE NAME/MENU/HELP

>

FILELIST

CHOOSE ONE: M/UPDATE CODED NAME/EXPLAIN/HELP

>

M

NEMAS MASTER DATAFILE
LAST UPDATE: DECEMBER 1983
3024 RECORDS

*

TEST TRANSMISSION OF FIRST FIVE RECORDS:

RECORD NAME : MERLINIUS ABALOSI
CURRENT NAME: NAGELUS ABALOSI (DOUCET 1978) DOUCET 1980 SEE HA50 126
OTHER NAME : MERLINIUS ABALOSI DOUCET 1978 SEE HA48 1041
SYNONYMY : ---
STATUS : ---
MORPHOLOGY : ---

(etc, the program sends the first five records then:)

THESE ARE THE FIRST 5 RECORDS
THE MASTER FILE CONTAINS 3024 RECORDS
IT WILL TAKE A LONG TIME TO TRANSMIT THE ENTIRE FILE
ARE YOU SURE YOU WANT TO CONTINUE WITH THE PRINTOUT? (Y/N):

>

N

ENTER: YOUR OPTION CODE NAME/MENU/HELP

OPTION "GENUSLIST": LIST OF GENUS NAMES

This option gives you a directory of the names of all the genera in NEMAS. The genera in Sphaerulariina are not included, because most of the species in these genera have not been entered in NEMAS datafile.

If you want to see the entire genus names directory, type "ALL". The names are presented in alphabetical order, one screen frame at a time. After you have studied the first frame, you can either:

- see the next frame, type "NEXT";
- see the previous frame, type "ABOVE";
- or you can quit the option, type "Q".

You can also check if a particular genus is included, type "ONE", then the program asks you the name of the genus you want to check. NEMAS will show you the frame where this name is, or where it would be if it were included in the list.

If you are not satisfied with this frame, you can see the next frame, type "NEXT", or the frame just above, type "ABOVE."

You can also quit the option, type "Q."

Example 1:

```
*****  
ENTER: YOUR OPTION CODE NAME/MENU/HELP  
>  
GENUSLIST
```

CHOOSE ONE: ALL/ONE/HELP

```
>  
ALL
```

LIST OF GENUS NAMES IN NEMAS
DECEMBER 1983

ACONTYLUS
ACROZOSTRON
ACUGUTTURUS

(etc, the program lists about 20 names, then:)

APHASMATYLENCHUS
APHELENCHOIDES

CHOOSE ONE: NEXT/ABOVE/Q/HELP

```
>
```

```
Q
```

```
ENTER: YOUR OPTION CODE NAME/MENU/HELP
```

```
*****
```

Example 2:

```
*****
```

```
ONE
```

```
ENTER: YOUR GENUS NAME
```

```
>
```

```
NACCOBUS
```

```
PLEASE WAIT...
```

```
NACCOBUS IS NOT INCLUDED IN GENUSLIST
```

```
CLOSE NAMES INCLUDE:
```

NACCOBODERA
NACCOBUS
NAGELUS
NANIDORUS
NEMONCHUS

CHOOSE ONE: NEXT/ABOVE/Q/HELP

```
>
```

```
Q
```

```
ENTER: YOUR OPTION CODE NAME/MENU/HELP
```

```
*****
```

OPTION "SPECIES": SEARCHES ON A SPECIES NAME

This option searches the datafile (master data file: type "M"; or updated datafile, type the update coded name, see page 6 or type "INFO" then ask message #2) to locate the record of a particular nematode.

Species name

Because of the way NEMAS datafile is organized, you must enter first the specific name of the nematode you are looking for. This name is the second one of a binomen, or the last name of a tri- or quadrinomen.

For example, "brevicaudatus" is the specific name of:

- Tylenchorhynchus brevipudatus;
- Pararotylenchus brevipudatus;
- Tylenchorhynchus robustus brevipudatus; and
- Tylenchorhynchus robustus typicus var. brevipudatus.

When an adjective, the specific name may end differently depending to which genus it belongs:

- brevipudatus, brevipudata, brevipudatum;
- peruensis, peruensis, peruense;
- annulifer, annulifera, annuliferum.

NEMAS makes allowance for these grammatical changes. Whenever you enter any such names, it will also search for the other two names.

Genus name

The search on a particular species name will uncover:

- zero record (if no such name exists in the file; check your spelling)
- one record or
- several records (up to 27 for "indicus".)

When more than one record is found under a particular species name, you can:

- Request all the records to be transmitted to your terminal, type "ALL";
- Select the particular record you are interested in, type "ONE".

In this case you must enter the genus name of this record. This genus name can be:

- The original genus name of the nematode, type "ORIGINAL";
- The genus name currently in use, type "CURRENT";
- A genus name that was used in the past but no longer used, type "PAST";
- If you do not know the status of the genus name you propose (original, current, or past), type "ANY".

NOTE: All the homonyms (different nematodes that were given the same name by error) will be given by the program (see example page 17).

Format

The records in NEMAS datafile are arranged under six fields (see page 5).

You can decide how much information you want to receive:

- If you want the complete record, type "RECORD".
- If you want only some of the fields, type "FIELD" and the field(s) number(s); see page 5 for field descriptions. For example if you want only the current and past names of the nematode, type "FIELD 2,3".

After the results have been transmitted to your terminal, you can:

- See the same results again, type "AGAIN";
- Conduct another search on the same species name, using for example a different genus name, type "BACK";
- Change the format of the information you receive; type "FORMAT";
- Search another species name, type "OTHER";
- Go to another option, type the option code name, or type "MENU" if you do not know this code name.

ENTER: YOUR OPTION CODE NAME/MENU/HELP

>

SPECIES

ENTER: M/UPDATE CODED NAME/EXPLAIN/HELP

>

M

ENTER: SPECIES NAME/HELP

>

BREVICAUDATUS

SEARCH IS IN PROGRESS, PLEASE WAIT...

I HAVE FOUND 11 RECORDS WITH THE SPECIFIC NAME BREVICAUDATUS

CHOOSE ONE: ALL/ONE/HELP

>

ONE

ENTER GENUS NAME/HELP

>

TYLENCHORHYNCHUS

CHOOSE ONE: ORIGINAL/CURRENT/PAST/ANY/HELP

>

ORIGINAL

CHOOSE FORMAT: RECORD/FIELD x,y,z/EXPLAIN/HELP

>

FIELD 2,3

MASTER FILE DEC83

SPECIES NAME BREVICAUDATUS

ORIGINAL GENUS NAME

FIELD NUMBER 2,3

CURRENT NAME: TYLENCHORHYNCHUS ROBUSTUS BREVICAUDATUS

SEIDENSCHWARZ 1923 SEE 1455

OTHER NAMES: ---

CURRENT NAME: PARAROTYLENCHUS BREVICAUDATUS (HOOPER 1959)

BALDWIN & BELL 1981 SEE HA51 424

OTHER NAMES: TYLENCHORHYNCHUS BREVICAUDATUS HOOPER 1959 SEE 749

CHOOSE ONE: AGAIN/BACK/FORMAT/OTHER/YOUR OPTION CODE NAME/MENU/HELP

>

BACK

CHOOSE ONE: ALL/ONE/HELP

OPTION "GENUS": SEARCHES ON GENUS NAMES

The option GENUS searches the datafile for the list of species included in a particular genus.

You can search either:

- The entire NEMAS datafile, type "M."
- Or the updated file since a particular date; type the code name of this date (see page 6).

Genus name

Enter the name of the genus you want to search. The search will select any name proposed under this name, either at both the generic and subgeneric ranks if you enter the genus name as it is, or at the subgeneric rank only if you enter the genus name between parentheses.

You may search several genera at the same time. Enter their names separated by "AND". For example: "TYLENCHUS AND FILENCHUS AND LELENCHUS", or "TYLENCHUS AND (FILENCHUS)".

Status of the genus

You may search only the species currently included in the genus. Ask "CURRENT". (See page 5 for the explanation of "current name.")

Or you may search all the species, currently and in the past included in the genus. Ask "ALL".

The search will take a long time (Sorry!). To help you estimate this time, messages are sent after 2, 5, 10, and 50% of the datafile has been searched.

Output

After the search is complete, you must define the output:

- Only the list of species names found, ask "NAMES".
- The complete record (6 fields) of every species found, ask "RECORD".
- A shorter record with only selected fields, ask "FIELD x,y,z".

After the results have been transmitted to your terminal, you have several options:

- Obtain the same results again, type "AGAIN";
- Change the format of the search on the same genus name(s), type "BACK";

(Here, you will be asked to redefine the status of the species (see above). For example after searching for ALL the species, you may want the list of only the CURRENT species. Note that the reverse is not possible; if you search the current species first, you cannot later obtain the list of all the species. You may also change the format of the output).

- Change the format of the output, type "FORMAT";
- Search different genus name(s), type "OTHER";
- Go to another option, type the option code name or type "MENU" if you do not know this code name.

Example:

ENTER: YOUR OPTION CODE NAME/MENU/HELP

>

GENUS

ENTER: M/UPDATE CODED NAME/EXPLAIN/HELP

>

M

ENTER: GENUS NAME(S)/HELP

>

TYLENCHUS AND FILENCHUS

GENUS NAMES: TYLENCHUS VERIFIED

FILENCHUS VERIFIED

CHOOSE ONE: CURRENT/ALL/HELP

>

ALL

SEARCH IS IN PROGRESS, PLEASE WAIT...

2% OF THE DATA FILE HAS BEEN SEARCHED, PLEASE WAIT...

5% OF THE DATA FILE HAS BEEN SEARCHED, PLEASE WAIT...

10% OF THE DATA FILE HAS BEEN SEARCHED, PLEASE WAIT...

50% OF THE DATA FILE HAS BEEN SEARCHED, PLEASE WAIT...

SEARCH IS COMPLETED, 156 RECORDS FOUND

CHOOSE FORMAT: NAMES/RECORD/FIELD x,y,z/EXPLAIN/HELP

>

NAMES

MASTER FILE	DEC83
GENUS NAMES	TYLENCHUS
	FILENCHUS

ALL SPECIES
SPECIES NAMES

TYLENCHUS (LELENCHUS) ABERRANS (ALTHERR 1952) ANDRASSY 1954 SEE 75

ANGUILLULINA (TYLENCHUS) ABERRANS (ALTHERR 1952)

TYLENCHUS (FILENCHUS) ABERRANS (THORNE 1949) GOODEY 1963 SEE 639

(etc, the program sends all the names, then:)

CHOOSE ONE: AGAIN/BACK/FORMAT/OTHER/YOUR OPTION CODE NAME/MENU/HELP

>

BACK

CHOOSE ONE: CURRENT/ALL/HELP

>

CURRENT

CHOOSE ONE: NAMES/RECORD/FIELD x,y,z,/INFO/HELP

>

RECORD

(etc, the program will send the complete records of the current species.)

(then:)

CHOOSE ONE: AGAIN/BACK/FORMAT/OTHER/YOUR OPTION CODE NAME/MENU/HELP

OPTION REF: SEARCH FOR REFERENCE "SEE R"

The reference to some articles in the datafile is given as "SEE Rxxx" where xxx is a number. (See page 6 for explanation about references in NEMAS datafile or type INFO, then ask message #4).

To obtain a "SEE Rxxx" reference, use the option REF and enter the reference number.

Output includes a short reference of the article with author name(s), year, journal, volume issue, and pages. To save space, the title of the article is omitted.

When a "SEE R" article is later abstracted in Helminth. Abstr. (B), the reference in R reference file is replaced by the Helminth. Abstr. (B) volume and abstract numbers.

You may search several references successively.

Example:

```
*****
ENTER: YOUR OPTION CODE NAME/MENU/HELP
>
REF
ENTER: REFERENCE NUMBER/EXPLAIN/HELP
>
R55
ANDRASSY, I., 1981. ACTA ZOL. HUNG. 27(1/2): 1-47
ENTER: REFERENCE NUMBER/OPTION CODE NAME/MENU/HELP
R18
HA 52 1112
ENTER: REFERENCE NUMBER/OPTION CODE NAME/MENU/HELP
>
*****
```

OPTION INFO: Information messages

INFO contains the text of several explanatory messages that gives on-line the information contained in the present manual.

The messages include:

1. General information about NEMAS (see page 3 and 4 of the present manual).
2. Update of NEMAS (see page 6).
3. Format of the records (see page 5).
4. Literature reference (see page 6).

Each message is obtained by calling its reference number, one to four, as listed above. This reference number can be obtained on-line by asking "LIST".

After each message you can request another message (give its reference number) or go to a different option (enter your option code name)

Example:

```
*****  
ENTER: YOUR OPTION CODE NAME/MENU/HELP  
>  
INFO  
ENTER: MESSAGE NUMBER/LIST/YOUR OPTION CODE NAME/MENU/HELP  
>  
1
```

THE DATABASE NEMAS

NEMAS ORIGINATES FROM THE BOOK "NOMENCLATORIAL COMPILATION OF PLANT AND SOIL NEMATODES" BY TARJAN AND HOPPER, PUBLISHED IN 1974 BY THE SOCIETY OF NEMATOLOGISTS.

(etc., the whole message is transmitted, then:)

```
ENTER: MESSAGE NUMBER/LIST/YOUR OPTION CODE NAME/MENU/HELP  
>  
*****
```

OPTION END: End of program

By entering option END, your use of NEMAS is terminated and you return to the general system. You may then use the program NEMAID (type "NEMAID").

If you do not want to use this other program, type "LOGOUT" to disconnect from U.C. Berkeley, then disconnect from TELENET.

Do not forget to hang up your phone.

```
*****  
ENTER: YOUR OPTION CODE NAME/MENU/HELP  
>  
END  
THANK YOU FOR USING NEMAS!!  
@  
LOGOUT  
BYE!  
[RETURN]@[RETURN]  
@  
TELENET  
@  
d  
415 87A DISCONNECTED 00 00 00:00:02:51 41 9  
(hang up your phone)  
*****
```

AVAILABILITY OF NEMAS

NEMAS (and also the identification program NEMAID) is deposited at U.C. Berkeley. It can be accessed by phone via a public data network (TELENET) from many U.S. cities and from many foreign countries.

Prospective users must open an account with the Society of Nematologists through me:

Renaud Fortuner
Nematology Laboratory, Room 340
California Department of Food and Agriculture
1220 N Street
Sacramento, California 95814
U.S.A.

There is no initial fee but there is a small monthly fee of about \$4.00, charged even if you do not use the system. Users are charged from \$0.60 to \$2.25 per hour for the time they access the system plus CPU time (July 1984).

Connect time surcharge for using TELENET in the U.S. is \$6.00 per hour. Users in foreign countries must contact their national administration. Subscription and access fees vary for each country.