Bookworm
Bibliographic Database Manager for *Windows*

This manual, BW.WRI, was created using *Microsoft Windows Write,* a word processor included with *Microsoft Windows*. The text of the manual has been formatted for output to an HP LaserJet II printer; you may have to repaginate the file if using another printer. *Microsoft Windows,* and *Microsoft Windows Write* are registered trademarks of Microsoft Corporation, and *Amí* is a registered trademark of Samna Corporation. *Bookworm* is a copyright of L.G. Goldsborough and Bookworm Software Ltd.

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What is *Bookworm?*

Bookworm© is a software program for the IBM PC family of microcomputers which maintains databases of scientific references for rapid, efficient retrieval. Based on the *Microsoft Windows*© version 3.X graphic user interface, Bookworm is simple to use yet provides sophisticated searching and reporting capabilities. Unlike most other bibliographic database programs, *Bookworm* is affordable because it is shareware; you are encouraged to copy and distribute it freely among colleagues as long as the program and its accompanying documentation are not modified in any way. Copies of the software are available on floppy disk (DOS format, 360K 5.25", 1.2M 5.25", 720K 3.5", or 1.44M 3.5") from the author for $10Can (to cover costs of the media, duplication and mailing). If you use *Bookworm,* a donation of $25Can per copy will help defray the costs of developing and upgrading the program.

Some of Bookworm's features are as follows:

* simple, intuitive commands
* full editing tools for adding, updating and deleting references in a database
* nested AND/OR, case-matching, whole-word searchs
* searchs entire databases or selected ranges
* interrupt and view partial searchs, then continue
* perform 2 or more searchs concurrently on the same database
* databases up to 32,000 references per file; unlimited number of files using user-selectable filenames
* import references into a database from ASCII or ANSI textfiles
* maintains folders of user-defined phrases (e.g., journal names) for rapid entry into a database
* custom formatting of output according to specific journal specifications
* copy and paste a reference from a database into a manuscript using the *Windows* clipboard
* quick "Goto" moves through a database
* output files directly readable by popular *Windows*-based word processors
* full ASCII and ANSI character set support, including high-order characters
* on-disk documentation
* runs concurrently with other *Windows* programs (e.g., word processors, spreadsheets)
* full mouse support
* works with any printer supported by *Windows,* including a full range of laser printers

Important!

Bookworm is offered on an "as-is" basis. Consequently, the author makes no warranties, either express or implied, as to the suitability of the program or its accompanying documentation for a particular application. Legalese aside, I have made every effort to ensure that the the program is relatively bug-free, and am constantly testing and improving the program based on the comments of users. If you should encounter a problem which is not dealt with in this manual, or if the documentation should be improved, or if you think a feature could be added to improve the usefulness of the program, please feel free to contact me at the following address:

> Dr. Gordon Goldsborough
> Department of Botany, Brandon University
> Brandon, Manitoba, Canada R7A 6A9
> (204) 727-9786
> Internet: goldsborough@brandonu.ca

In your correspondence, be sure to include the version number of the program (shown in the "About Bookworm..." dialog box) and the version number of the documentation (on the first page of this document).

Note: **This manual accompanies the prerelease version of *Bookworm*. This version implements all the menu selections necessary for creating, updating and searching a database. However, some menu options, particularly those dealing with output to files and printers, are not yet available and are consequently "grayed" in the appropriate menus. Registered users having a copy of this prerelease version will be sent a free update to the fully functional version 1.00 as soon as it is available. Other users can obtain this version from the author for $10Can.**

1. Table of Contents

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2. Installing *Bookworm*

A. Computer system requirements

The following combination of hardware and software is recommended for optimal use of *Bookworm:*

* 80286 or 80386-based microcomputer
* hard drive (20 MB or larger)
* mouse (optional)
* graphic adapter and monitor (CGA, HGC, EGA, VGA, or SuperVGA)
* floppy disk drive (360 KB capacity or higher)
* MS-DOS version 3.1 or higher
* *Microsoft Windows* version 3.0 or higher (older versions not supported)

Bookworm uses the graphic user interface provided by *Microsoft Windows*, a product for IBM-compatible microcomputers developed by Microsoft Corporation. *Windows* is a very powerful platform, both for software developers and users, but this power is not achieved without a price. Although *Windows* will run on PC and XT computers (those based on the Intel 8088 or 8086 microprocessors), it runs unacceptably slowly (believe me, I tried!). As a result, Microsoft recommends a 80286 microprocessor-equipped (AT) computer as the minimum for running *Windows;* a fast 80386 equipped computer is even better.

B. The program disk

If you received *Bookworm* from the author, the program disk should contain the following files:

BOOKWORM.EXE - the program file

BOOKWORM.WRI - the documentation file (that you are currently reading)

SAMPLE.*   -   a sample database (8 files) containing 50 references

BWFRMT.DEF   -   definitions of formats used for file or printer output

BWABBREV.DEF   -   word abbreviation definition file

C. Steps in installation

Although it is possible to install *Bookworm* from the DOS prompt, installation can also be done from within the *Windows* environment. I will assume in the following steps that

you have installed a copy of *Windows* on your computer (version 3.0 or higher). If you are unfamiliar with the basic operation of the *Windows* operating environment, I suggest that you reread its documentation to familiarize yourself with basic mouse and keyboard usage.

1. Start a *Windows* session by typing WIN at the DOS prompt in the *Windows* subdirectory.

2. When the *Windows* Program Manager appears, place the original disk containing *Bookworm* into an available floppy disk. Run the *Bookworm* installation program by opening the "File" menu in the Program Manager window and selecting "Run...". A dialog box will open in which you should type the following:

   a:\setup.exe

   You will be asked to confirm the directory on your hard drive where the Bookworm files will be installed. By default, this is C:\WINDOWS\BOOKWORM but you may change it to whatever you wish.

After the installation program copies all *Bookworm* files onto your hard drive, the basic installation of *Bookworm* is complete. The program can be executed by double clicking on the *Bookworm* icon in the program group that the installation program will create. *Bookworm* will automatically complete its own installation when the program is run for the first time. If you wish to change this installation, such as to put the program in another subdirectory after it has been installed, you will first have to refer to detailed information in Appendix B. (Modifying WIN.INI).

3. Registering *Bookworm*

A. The shareware concept

Bookworm is a shareware program. This means that you can try the program for as long as you like to ensure that it will do what you want. When you are satisfied that you will use the program, you are expected to make a small (particularly in comparison to the costs of most commercial bibliographic software programs) donation to help pay for the program's development (which was considerable) and to help in its continued improvement. You are encouraged to make as many copies of the program as you like (how many commercial programs suggest that you do this?) and give (**not** sell) copies to interested colleagues, students, family etc. for them to evaluate. If you do not plan to use the program, you do not need to pay anything and should delete all copies of the software from your computer. If you install the program on more than one computer that you use, you are expected to register a separate copy of the program for **each** computer.
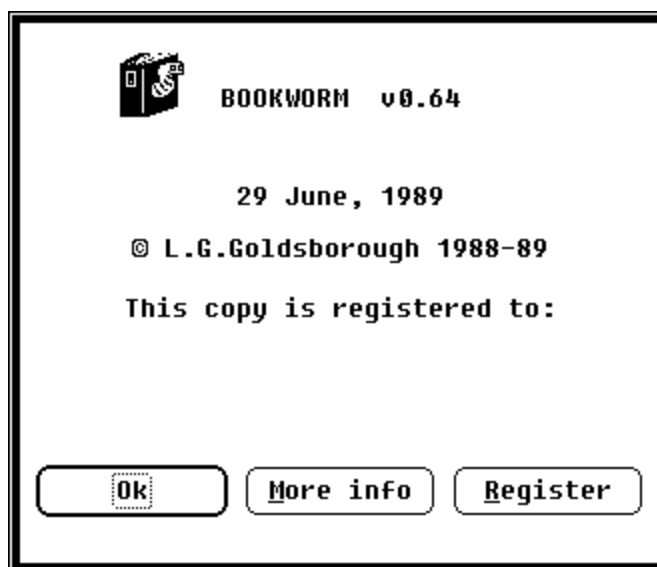
An unregistered copy of *Bookworm* is fully featured and can add and edit references, search and output text without restriction. However, registering a copy of *Bookworm* provides several important benefits, including:

* **free** updates of the program as features are added

* a dialog box that displays information about the program, which appears periodically during the operation of an unregistered copy, will only appear when you request it

B. How to register a copy of *Bookworm*

Each time that the program is run, you will initially see a dialog box (called the "About Bookworm..." dialog box) similar to one shown below:

```
    ┌─────────────────────────────────────────┐
    │                                         │
    │   ┌──┐                                  │
    │   │  │    BOOKWORM  v0.64               │
    │   └──┘                                  │
    │                                         │
    │          29 June, 1989                  │
    │                                         │
    │       © L.G.Goldsborough 1988-89        │
    │                                         │
    │       This copy is registered to:       │
    │                                         │
    │                                         │
    │                                         │
    │   ┌──────┐  ┌───────────┐  ┌──────────┐ │
    │   │ Ok   │  │ More info │  │ Register │ │
    │   └──────┘  └───────────┘  └──────────┘ │
    │                                         │
    └─────────────────────────────────────────┘
```

In the top left corner of the dialog is the *Bookworm* icon which identifies the program in a Program Manager group or when it is minimized on the *Windows* desktop. Next to it is the name of the program and the version, and below is the date on which the version was created. Below a copyright notice are two lines which list the person to whom the copy of *Bookworm* is registered, and the user's registration number. Since this is currently an unregistered copy of the program, both lines are blank.

Pressing the "Ok" button allows the program to continue. The "Info" button will open another dialog box containing a short description of the program's function and the address of the author. Finally, the "Register" button opens a dialog box into which information is entered when registering a new copy of *Bookworm*:

```
┌──────────────────────────────────────────────────┐
│ ▭                    Register                      │
├──────────────────────────────────────────────────┤
│  Licensee: ┌──────────────────────────────────┐   │
│            └──────────────────────────────────┘   │
│  Number:   ┌──────────────────────────────────┐   │
│            └──────────────────────────────────┘   │
│      ┌───────────────┐      ┌───────────────┐      │
│      │      Ok       │      │    Cancel     │      │
│      └───────────────┘      └───────────────┘      │
└──────────────────────────────────────────────────┘
```
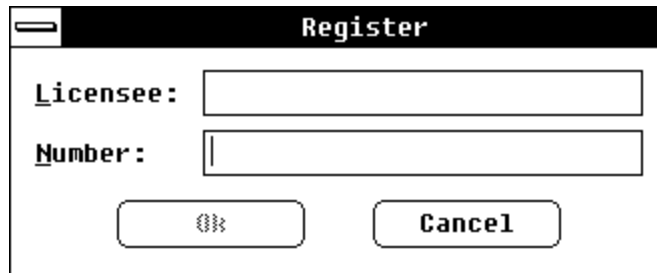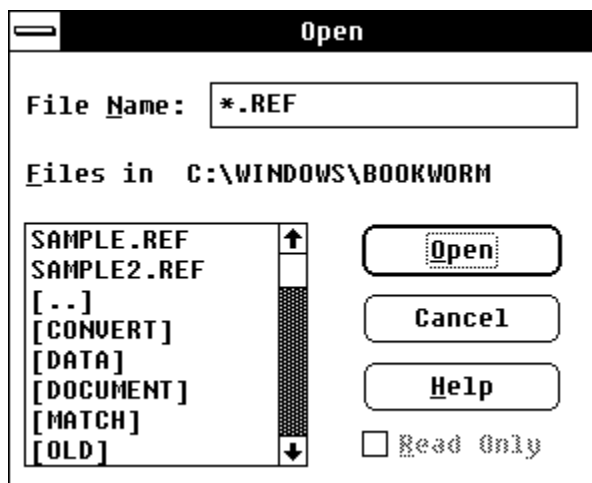
To register a copy of *Bookworm*, send $25 in Canadian funds (or the equivalent in other currencies) to the author at the address given earlier, along with the version of *Bookworm* that you have (the number given in the About dialog box) and the name of the person, organization etc. to whom you wish the copy to be registered. I will send you a registration number that you will enter in the above registration dialog box with the registered user's name. If the number is valid, the program will update the two lines in the About dialog box and you will have a registered copy. Again, you do not have to register your copy of *Bookworm* to evaluate the program, but you are strongly urged to do so if you continue to use it.

4. Getting Started

A. Opening the SAMPLE.REF reference database

After pressing the Ok button in the About dialog box, *Bookworm* will then display a "File Open" dialog box:

```
┌──────────────────────────────────────────────────┐
│ ▭                     Open                         │
├──────────────────────────────────────────────────┤
│  File Name: ┌────────────────────────────────┐    │
│             │ *.REF                          │    │
│             └────────────────────────────────┘    │
│  Files in   C:\WINDOWS\BOOKWORM                    │
│                                                    │
│  ┌─────────────────┬─┐    ┌───────────────┐        │
│  │ SAMPLE.REF      │▲│    │     Open      │        │
│  │ SAMPLE2.REF     │ │    └───────────────┘        │
│  │ [..]            │ │    ┌───────────────┐        │
│  │ [CONVERT]       │ │    │    Cancel     │        │
│  │ [DATA]          │ │    └───────────────┘        │
│  │ [DOCUMENT]      │ │    ┌───────────────┐        │
│  │ [MATCH]         │ │    │     Help      │        │
│  │ [OLD]           │▼│    └───────────────┘        │
│  └─────────────────┴─┘    ☐ Read Only              │
└──────────────────────────────────────────────────┘
```
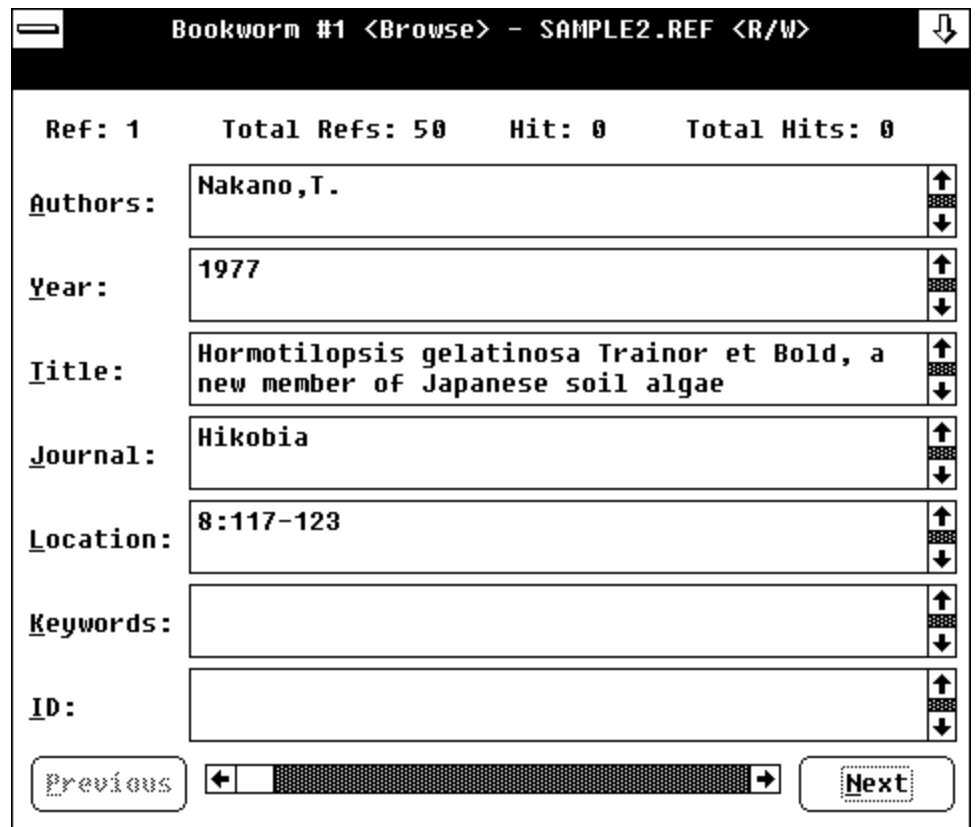
Bookworm is requesting the name of the file which contains the references to be examined. By default, reference database files created by *Bookworm* end in the letters

REF to distinguish them from files created by other programs. The usual MS-DOS restrictions on legal filenames also apply. For example, names cannot exceed 11 characters in length (up to 8 characters followed by a period followed by the REF extension), and cannot contain certain invalid characters (spaces, commas etc.).

For now, select the SAMPLE.REF file included on the original program disk. If you have copied all files from the original disk, the file should be included in a list box in the lower left corner of the File Open dialog box. If it is still on the original floppy disk, you must place the original disk in an available floppy drive, and switch to that drive by typing the drive name (e.g. A:, B: etc.) in the filename box. (Alternatively, you can double click on the desired drive in the list box if you have a mouse.) Press the Open button to open the sample reference database.

When the database is loaded, the caption bar at the top of the *Bookworm* window will display several important pieces of information, including the number of copies of *Bookworm* resident in memory at the time (e.g. Bookworm if only 1 copy), the name of the database being viewed, and its access status (either "R/W", "R/U", or "R/O"). Below the caption bar is the menu bar, from which *Bookworm* commands are issued. A status line below the menu bar indicates the reference number presently being displayed, and the total number of references in the database. If you have completed a search of the database, the hit (a "found" reference) being displayed and the total number of hits fowill also be shown in this status line. Below the status line, the first reference of the database is displayed.

```
┌──────────────────────────────────────────────────────────────┐
│ ▭        Bookworm #1 <Browse> - SAMPLE2.REF <R/W>         ⇩ │
├──────────────────────────────────────────────────────────────┤
│                                                                │
│   Ref: 1      Total Refs: 50     Hit: 0     Total Hits: 0     │
│               ┌──────────────────────────────────────────┬─┐ │
│   Authors:    │ Nakano,T.                                │↑│ │
│               │                                          │▓│ │
│               │                                          │↓│ │
│               ┌──────────────────────────────────────────┬─┐ │
│   Year:       │ 1977                                     │↑│ │
│               │                                          │▓│ │
│               │                                          │↓│ │
│               ┌──────────────────────────────────────────┬─┐ │
│   Title:      │ Hormotilopsis gelatinosa Trainor et Bold,a│↑│ │
│               │ new member of Japanese soil algae        │▓│ │
│               │                                          │↓│ │
│               ┌──────────────────────────────────────────┬─┐ │
│   Journal:    │ Hikobia                                  │↑│ │
│               │                                          │▓│ │
│               │                                          │↓│ │
│               ┌──────────────────────────────────────────┬─┐ │
│   Location:   │ 8:117-123                                │↑│ │
│               │                                          │▓│ │
│               │                                          │↓│ │
│               ┌──────────────────────────────────────────┬─┐ │
│   Keywords:   │                                          │↑│ │
│               │                                          │▓│ │
│               │                                          │↓│ │
│               ┌──────────────────────────────────────────┬─┐ │
│   ID:         │                                          │↑│ │
│               │                                          │▓│ │
│               │                                          │↓│ │
│   ┌─────────┐ ┌─┬──────────────────────────────────┬─┐ ┌──────┐│
│   │Previous │ │←│▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓│→│ │Next ││
│   └─────────┘ └─┴──────────────────────────────────┴─┘ └──────┘│
└──────────────────────────────────────────────────────────────┘
```

Notice that the information about each reference is contained in 7 fields. The author(s) of the reference is contained in the first field, followed by the title of the paper, the journal in which the paper was published, the location in the journal (for example, the volume and issue number, and the pages), keywords describing the major content of the paper, the year in which the paper was published, and a number (perhaps a sequential acquisition number) identifying the paper. Some of the field information came from the paper itself (such as the author names, title etc.), while other information was added by the user (such as the keywords and identification number). If some of the information for a particular field is too long to be shown fully, a vertical scroll bar at the right side of the field will be activated to allow you to scroll the text up using a mouse. You can also use the arrow keys on the keyboard to display additional text within the field.

How do you view (or "browse") other references in the database? There are several ways:

1. Press either the "Next" or the "Previous" buttons using the mouse (or use the Alt-N and Alt-P keyboard mnemonics, or the left and right arrow keys) to move to the next or previous reference in relation to the presently displayed one.

2. Click one of the arrows on the the horizontal scroll bar at the bottom of the main program window. This has the same effect as pressing either the Next or Previous
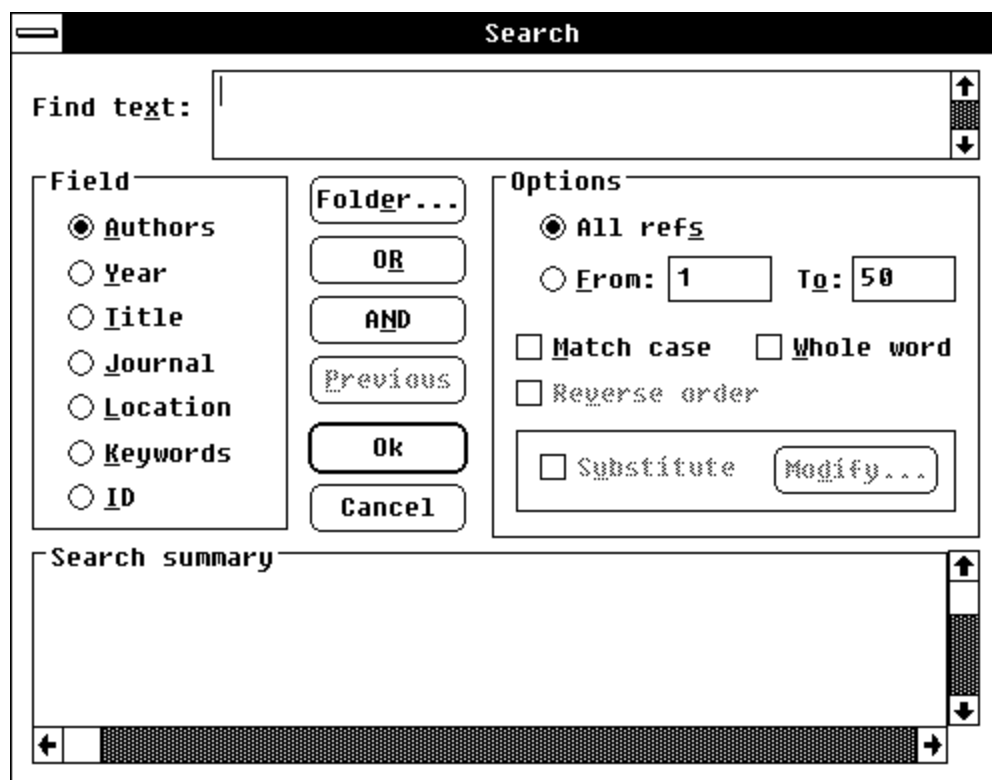
buttons.

3. Grab the thumb of the horizontal scroll bar at the bottom of the main program window and drag it with the mouse (assuming you have one) to a new position. The far left of the scroll bar represents the first reference in the database, and the far right is the last reference. (Actually, the far right is one position beyond the end of the database because *Bookworm* always maintains a blank form for entering new acquisitions to the database.)

4. Open the "Search" menu in the main window menu bar and select "Goto ref...". A dialog box will open requesting you to enter the number of a reference (the number at the left side of the status line). If you enter a valid number (one that is within the total number in the database) and press "Ok", *Bookworm* will move to that reference.

5. To go to the end of the database, press the "End" key. To go to the beginning, press "Home". To move and up and down in "jumps", press the "PageUp" and "PageDown" keys.

Practise moving through the database. Occasionally, if you accidentally change the contents of one of the fields of information, *Bookworm* may ask you if you wish to save the changes before moving on to another reference. For now, click the "No" button in the prompt box in response to these requests.

B. A sample search

Try performing a simple search of the references in the SAMPLE.REF database. Open the "Search" menu in the main window menu bar and select "Start". This doesn't actually start a search, because you must first define the terms for which you wish to search. This command causes the Search dialog box to appear:

```
┌─────────────────────────────────────────────────────────────────┐
│ ▄▄                        Search                                  │
├─────────────────────────────────────────────────────────────────┤
│                         ┌──────────────────────────────────┐ ▲   │
│ Find te𝐱t:              │                                  │ ▓   │
│                         │                                  │ ▼   │
│ ┌─Field──────────┐ ┌──────────┐ ┌─Options──────────────────┐     │
│ │ ◉ 𝐀uthors      │ │ Fol𝐝er...│ │ ◉ All ref𝐬               │     │
│ │ ○ 𝐘ear         │ ├──────────┤ │ ○ 𝐅rom: 1     T𝐨: 50     │     │
│ │ ○ 𝐓itle        │ │    O𝐑    │ │                          │     │
│ │ ○ 𝐉ournal      │ ├──────────┤ │ ☐ 𝐌atch case  ☐ 𝐖hole word│    │
│ │ ○ 𝐋ocation     │ │   A𝐍D    │ │ ☐ Re𝐯erse order          │     │
│ │ ○ 𝐊eywords     │ ├──────────┤ │                          │     │
│ │ ○ 𝐈D           │ │ Previous │ │ ┌──────────────────────┐ │     │
│ │                │ ├──────────┤ │ │ ☐ S𝐮bstitute  Mo𝐝ify..│ │    │
│ │                │ │    Ok    │ │ └──────────────────────┘ │     │
│ │                │ ├──────────┤ └──────────────────────────┘     │
│ │                │ │  Cancel  │                                  │
│ ┌─Search summary─┴──────────┴─────────────────────────────┐ ▲    │
│ │                                                          │ ▓    │
│ │                                                          │ ▓    │
│ │                                                          │ ▓    │
│ │                                                          │ ▼    │
│ │ ◄ │      │▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓│      ► │      │
│ └──────────────────────────────────────────────────────────┘     │
└─────────────────────────────────────────────────────────────────┘
```

As an example, we will search for all papers in the database having the word "periphyton" somewhere in the title. Follow the following steps:

1. Move the input focus (the place where text will appear when you type) to the "Find te𝐱t:" box using the mouse, or by using the Alt-X keyboard mnemonic. Type the text for which you will be searching:

 periphyton

2. Select the field to be searched for this text (the title field) by clicking the left mouse button over the line marked Title in the area of the Search dialog box marked Field or by typing Alt-T at the keyboard.

3. Check the "𝐌atch case" box in the area of the Search dialog box marked "Options". This will force *Bookworm* to match the case of the entered text. Consequently, the program would not find "Periphyton" or "PERIPHYTON". Depending on the text being searched for, you may wish to ignore the case matching option.

4. Check the "𝐖hole word" box in the area of the Search dialog box marked "Options". This will force *Bookworm* to search only for complete words. With this box checked, references whose titles contained the words "phycoperiphyton" or "pseudoperiphyton"
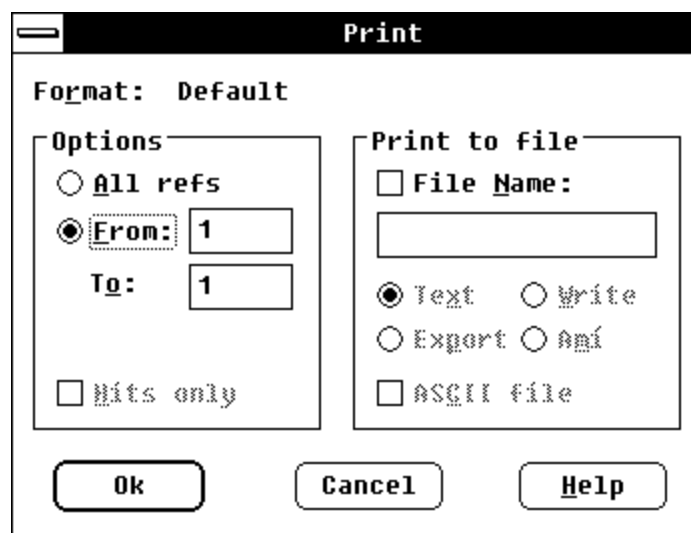
would not be considered hits. Again, depending on the generality of the text being search for, you may wish to ignore the whole word matching option.

5. Start the search by pressing the "Ok" button in the right center of the Search dialog box. A synopsis of the search you have requested will appear in the box at the bottom of the dialog box which is labelled "Search summary" and a prompt box will ask you if you now wish to initiate the search. If the requested search is correct, press the "Yes" button in the prompt box and the Search dialog box will close and the search will commence. While the search is in progress, the status line will be updated to show the position of the search in the database. As hits are registered, the "Total hits:" entry in the status line will be updated. A dialog box with a button marked "Stop" will remain on the screen while the search is taking place to allow you to stop the search at any time.

6. When the search is complete, the Stop dialog box will close and *Bookworm* will display the first hit if the search was successful. The function of the Next and Previous buttons will change while viewing hits; instead of moving to adjacent references in the database, the buttons instead move to adjacent hits in the search. Similarly, the "Goto" option in the "<u>S</u>earch" menu allows you to move to a particular hit, not a particular reference in the database. The horizontal scroll bar at the bottom of the main window can be used to move through the hits, where the extreme left of the scroll bar is the first hit, and the extreme right is the last hit.

7. If you wish to initiate a new search, *Bookworm* will first ask you to discard the present search.

C. Sending hits to the printer

After completing a search and reviewing that the hits are appropriate, you can print them to the current default printer (which is selected using the *Windows* Control Panel) by opening the "<u>F</u>ile" menu in the main window menu bar and selecting "<u>P</u>rint refs...". A dialog box will appear which allows you to define what references will be printed:

```
┌──────────────────────────────────────────────┐
│ ▭              Print                          │
├──────────────────────────────────────────────┤
│ Fo̱rmat:  Default                              │
│ ┌─Options──────────┐  ┌─Print to file────────┐│
│ │ ○ A̱ll refs       │  │ ☐ File Ṉame:         ││
│ │ ◉ F̱rom: │ 1 │    │  │ ┌──────────────────┐ ││
│ │                  │  │ └──────────────────┘ ││
│ │   Ṯo:   │ 1 │    │  │ ◉ Ṯext   ○ W̱rite     ││
│ │                  │  │ ○ E̱xport ○ A̱mí       ││
│ │ ☐ H̱its only      │  │ ☐ AS̱CII file         ││
│ └──────────────────┘  └──────────────────────┘│
│   ┌────────┐   ┌──────────┐   ┌──────────┐     │
│   │   Ok   │   │  Cancel  │   │  H̱elp    │     │
│   └────────┘   └──────────┘   └──────────┘     │
└──────────────────────────────────────────────┘
```

To print all the hits from the current search, simply press the "Ok" button at the bottom of the Print dialog box. *Bookworm* will then send the selected hits to the *Windows* print spooler, which handles the actual duty of printing the text in a particular format. While *Bookworm* is sending information to the print spooler, a dialog box will appear that gives you the option of cancelling the print operation. Later, you will learn how to control the appearance of the output text by modifying the print format. For now, *Bookworm* uses a default format.

D. Entering a new acquisition in the database

Go to the end of the database using one of the methods listed earlier. You will be shown a blank form in which all 7 fields are empty. Simply move to the field in which you wish text and begin typing. You can move to any of the fields in several ways:

1. Point the mouse to the field in which you wish to enter text and click the left button once. The caret (the flashing vertical bar which identifies the entry point, also called the "input focus") will move to that field.

2. Press the Alt keyboard along the appropriate keyboard mnemonic for the desired field. For example, to move to the Journal field, type Alt-J.

3. Press the Tab key. This will move you ahead from whatever field you are currently in to the next field in the window. The combination of a shift key and Tab moves you to the previous field in the window.

When you reach the end of a line in the field, do not press the return key. As you reach the end of a line, *Bookworm* will automatically move you to the next line, and will wrap your text onto that line if it is too long to fit on the preceding line. As you reach the

bottom of the field, *Bookworm* may also shift your text up to expose another blank line. You can move back to the hidden lines using either the arrow keys on the keyboard or the vertical scroll bar on the right side of the field (if you have a mouse).

If you are familiar with the editing tools (undo, copy, cut, and paste) provided with the *Windows* Notepad and the *Microsoft Windows Write* word processor, you will notice that all the same tools can be used to edit the text in each of the fields.

E. Exiting the program

You can exit Bookworm at any time in a variety of ways:

1. Open the "File" menu in the main window menu bar, and select "Exit".

2. Open the system menu in the upper right corner of the window and select "Close".

3. If you have a mouse, double click on the system menu in the upper right corner of the window.

If you have performed a search that produced hits, or if you have altered an existing reference or added a new references to the database and these changes have not been saved to the disk, *Bookworm* will ask you how to proceed before exiting. You can elect to save your changes and exit, ignore the changes and exit, or abort the request to exit altogether. Similarly, if you attempt to end your *Windows* session while *Bookworm* is still active (even if it is iconic on the desktop), and one of the above conditions apply, you will be prompted before *Windows* ends. Don't worry; there are very few ways (short of a power failure) in which you can accidentally lose your work.

F. Summary

By now, you should be able to navigate through the SAMPLE.REF database, conduct simple searchs of it and output the hits to a printer. You can enter a new reference into the sample database, and exit the program when finished. Of course, you have only scratched the surface of *Bookworm*'s capabilities, but we'll leave that to the next section. Relax!

Importing references into *Bookworm* from ASCII and ANSI textfiles

References can be imported from a standard ASCII and ANSI textfiles into *Bookworm*. The following restrictions apply to the format that these input datafiles can take.

1. The file must have the extention DAT

    e.g. REFS.DAT

2. Each field of each reference must begin in a field identier, which consists of a backslash followed by the field name as follows:

    A -   author(s) field
    Y -   year field
    T -   title field
    J -   journal field
    L -   location field
    I -   ID field
    K -   keyword field

    The case of the field identifier is unimportant. This is followed either by a space and some text, or a carriage return if the field is to be left blank.

    e.g.
            /A Goldsborough,L.G. Robinson,G.G.C.
            /Y 1985
                    /T Seasonal succession of diatom epiphyton of dense mats of Lemna
            minor
                    /J Canadian Journal of Botany
                    /L 63(12):2332-2339
                    /I
                    /K diatoms chlorophyll diversity Achnanthes hungarica

    The fields can appear in any order, but EVERY field identifier must appear ONLY ONCE for each reference. If a field identifer is used for one reference, the text for that reference will be divided into two consecutive references in the resulting database. The upshot is this: check your infile data CAREFULLY before importing it; there are relatively few controls on the quality of the data built into the import feature of *Bookworm*. If you are uneasy about using the data importation feature, it is much better to use *Bookworm*'s built-in data entry facility to add references to the database. Personally, I never use the data import feature.

Important Notes:

1. The length of the text for each field cannot exceed 255 characters. If it does, the text will be automatically truncated and all characters after 255 will be lost!

2. The importation algorithm removes:
   a) all control non-text characters, including control characters
   b) strings of spaces, reducing them to a single space

Appendix A: Bookworm **Messages**

The following is an alphabetical list and explanation of messages you may receive while using *Bookworm*.

<filename> already exists. Do you wish to overwrite it?

> The filename to which references will be printed is in use by another file. If you answer "Yes" to this message, the existing file will be erased permanently. If you answer "No", the request to print the references to a file will be aborted. The default is "No".

Bookworm requires Windows 3.0 or higher to run.

> Several major changes were made to *Windows* between version 2 and version 3. *Bookworm* depends on many of the services provided by version 3 that are absent in version 2. For this reason, you must use version 3.0 or higher of *Windows* to run *Bookworm*.

<filename> does not exist.

> The file that you have selected for importing references does not exist.

<filename> does not exist. Do you wish to create a new database?

> The reference database filename that you have selected does not exist in the current disk directory. If the selected filename does specify an existing database, answer "No" to this message then check that the name has been spelled correctly and that the current directory actually contains that database. If you are creating a new database, answer "Yes" to this message and a new database will be created with the position set to the first reference in the database. If you are in Format mode, you must switch to Fields mode to begin entering references into the database. If you answer "No" to this message, a database will not be created. The default is "No".

Do you wish to continue the search?

> A search that was underway was aborted before the search range was completed. If you answer "Yes" to this message, the search will be resumed at the point where it was interrupted. If you answer "No", the request to continue the search will be aborted. Note that the option to continue a search is only available when a search has been halted prematurely. The default is "Yes".

Do you wish to import the references in <filename>?

You have requested that *Bookworm* import the references contained in <filename> into the present reference database. If you answer "Yes" to this message, the references will be imported. If you answer "No", the request to import the references will be aborted. The default is "No".

Do you wish to save the changes to the folder?

Changes have been made to the folder for the selected field. If you answer "Yes" to this message, the changes will saved onto the disk. If you answer "No", the changes will not be made. The default is "Yes".

Do you wish to save the changes to the format?

Changes have been made to the journal format definition. If you answer "Yes" to this message, the changes will saved onto the disk. If you answer "No", the changes will not be made. The default is "Yes".

Do you wish to save the changes to the list?

Changes have been made to the search reference list. If you answer "Yes" to this message, the changes will used to update the current search in memory. If you answer "No", the changes will not be made. The default is "Yes".

Do you wish to start the search?

A search request has been defined and displayed in the search summary box at the bottom of the search dialog box. If you answer "Yes" to this message, the search will be initiated. If you answer "No", the request to begin the search will be aborted. The default is "Yes".

End of reference database.

This message will be displayed in the middle of the reference display area when you are located at the end of the reference database. If you have just created a new database, you should switch to Fields mode (using the View Fields menu) to input a reference at position 1.

File access error: <text>

An unknown DOS error occured while reading or writing to a disk file. The <text> part of the message provide information useful in determining the cause of the error. This could occur for a variety of reasons, some of which could jeopardize the integrity

of your reference database if you continue using the program. Exit the program immediately, then restart the program and reopen your database. Record the circumstances leading up to the appearance of this message, and the actual contents of <text> and report them to the author.

File access is denied.

DOS could not grant access to the selected file. This may occur when the read-only, hidden, or system attributes of a file have been turned on, or if a large number of files are in use by other programs. You will not be able to use this file.

Printer error

An error occured while printing references on the printer. This may occur if the printer is turned off, if there is no printer connected to the system, or if the *Windows* print spooler has been deactivated by setting SPOOLER=NO in WIN.INI. If none of these conditions apply, record the circumstances leading up to the appearance of this message, and report them to the author.

Reference display error!

An unknown error has occured while *Bookworm* was trying to display a reference in the reference display area. This could occur for a variety of reasons, some of which could jeopardize the integrity of your reference database if you continue using the program. Save any unsaved references (using the File Save command), then exit the program immediately. Then restart the program and reopen your database. Record the circumstances leading up to the appearance of this message, and report them to the author.

Reference #<number> has been updated. Do you wish to save it?

You have made changes to one or more fields in the currently displayed reference. If you answer "Yes" to this message, the reference database will be updated with the altered text. If you answer "No", no changes will be made to the reference database and whatever command resulted in the appearance of this message will be carried out. If you answer "Cancel", the command will be aborted. Note that this message may occasionally appear when you have accidentally pressed a key on the keyboard, and the reference may not necessarily have been updated. The default is "Yes".

Reference #<number> is incomplete. Do you wish to save it anyway?

One or more fields in the currently displayed reference, which has not been saved into the database, are empty. If you answer "Yes" to this message, the reference will be

saved as it is. If you answer "No", the reference will not be saved and whatever command resulted in the appearance of this message will be carried out. If you answer "Cancel", the command will be aborted. The default is "Cancel".

Reference #<number> will be deleted permanently. Do you wish to continue?

You have requested that Bookworm delete the currently displayed reference from the reference database. If you answer "Yes" to this message, the reference will be deleted permanently (it cannot be "undeleted") and the text of each field will change to "Deleted" (if in Fields mode) or the word "Deleted" will appear in the middle of the screen (if in Format mode). If you answer "No", the request to delete the reference will be aborted. The default is "No".

Should reference #<number> be added to the database?

The currently displayed reference has not been saved into the reference database. If you answer "Yes" to this message, the reference will be saved. If you answer "No", the reference will not be saved and whatever command resulted in the appearance of this message will be carried out. If you answer "Cancel", the command will be aborted. The default is "Yes".

Sorry. Help is not yet available for this topic.

The *Bookworm* help system is not yet fully implemented for all commands. This message may also occur if an error occurred while accessing the *Bookworm* help file (named BW.HLP). If this file is missing, or has been damaged accidentally, copy it from the *Bookworm* distribution disk into the *Bookworm* directory using the MS-DOS Executive.

That command is not implemented in this version.

The command you have selected is not yet available in this version of *Bookworm*.

That file in currently in use - set R/O.

Normally, this message appears when you attempt to open a reference database that is already opened in another copy of *Bookworm* running on the *Windows* desktop. Setting the database R/O (read only) ensures that changes (additions, deletions, updates) are only made by one copy of the program. This file "locking" is achieved by setting the file's DOS read-only attribute while *Bookworm* is using it, and making the file R/W (read and write) only when *Bookworm* is through with it. If, however, the program is not terminated by the user, such as if the power fails while a database is open, the DOS R/O attribute remains in effect, and this message will appear, even if

the selected file is not in use by another copy of *Bookworm*. If this occurs, the DOS file status can be reset to R/W by opening the file in R/O mode, then either exiting *Bookworm*, or closing the reference database file and opening another reference database. Alternatively, you can use the ATTRIB program included with most versions of DOS to reset the file access attribute to R/W (refer to your DOS manual for instructions on the use of the ATTRIB program).

That operation cannot be completed because the file is not R/W.

The current reference database status is either R/U (read and update) or R/O (read only) so the chosen command cannot be completed. If the status is R/U, only updates and deletions of existing references are permitted. If the status is R/O, no changes to the database are permitted.

That operation cannot be completed because the file is not R/U.

The command you have selected cannot be completed because the status of the database file is not R/U (read and update). No changes to the database are permitted.

That registration number is invalid!

The registration number is not valid for the licensee name which has been entered. Each registered user of *Bookworm* is issued a unique number identifying a particular copy of the program. This message may occur because either the number or the licensee name have been entered incorrectly. Recheck the values entered and try again. If the entered values are correct (ensure that the licensee name is entered <u>exactly</u> as it was received from the author; spaces and case are important), then contact the author.

The file ID is invalid.

Each file created by *Bookworm* is marked with a "signature" that *Bookworm* checks each time that file is accessed. This ensures that "foreign" files with the same filenames as legitimate *Bookworm* files are not used. If the file being accessed was created by *Bookworm*, this message may indicate that it has been damaged in some way. In this case, delete the file and use a backup copy.

The current search will be lost. Do you wish to continue?

You have initiated an action which, if continued, will cause the current search to be lost. If you answer "Yes" to this message, the search will be lost; if "No", no further action will be taken. For example, if you attempt to end the *Windows* session while a search is active, *Bookworm* will only allow this to occur if you answer "Yes". Otherwise, the request to end the session will be aborted. The default is "No".

The file name is invalid.

The name you have entered is not a valid DOS filename. The name may contain invalid characters such as spaces or punctuation marks, or it may exceed the maximum length permitted by DOS (8 characters followed by a period followed by 3 characters).

The file number is bad.

This DOS error message may occur if *Bookworm* attempts to write to a read-only file, or if the file handle of a particular file is invalid.

The file signature is invalid.

Each *Bookworm* database consists of eight files: an index file (with the ending REF) and seven field files containing the actual reference text. To ensure that all files with the same name are from the same database, a unique file signature is written to each file when the database is first created. This message appears if the signature of one or more of the field files in the database does not match the signature of the index file. This may occur if one or more of the field files has been damaged, or if different reference databases with the same name have been mixed together. The simplest solution is to delete the entire database, and use a backup copy of the database files.

The next reference in the file is incomplete. Aborting...

While importing references from a disk file, an error was encountered in one reference. Each reference in the import file must be contain seven fields (Author(s), Year, Title, Journal, Location, ID, Number), each on a new line beginning with a backslash character (/), followed by the field identifier (A,Y,T,J,L,I,N) followed by a space, then the text of the field. If a field is blank, the backslash and field identifier must still appear. Recheck the input file at the point indicated by the reference currently displayed in *Bookworm*. Delete all references in the input file preceding the point where the error occurred, correct the error, then import the remainder of the file.

The number you have entered is invalid.

The entered number is not acceptable because it contains non-numeric characters (such as text characters) or is not within an acceptable range for the particular value (e.g., entering 0 as a reference number). Recheck the entered value.

The selected numbers are discontinuous.

When specifying the order in which fields will be displayed, the field order must be

continuous (e.g., 1 to 4) and must begin with 1. The order cannot skip a number (e.g., 1 to 4, 6 to 7). Recheck the field order numbers you have entered to ensure that no numbers in the range from 1 to 7 have been skipped.

The text you have entered is invalid.

The entered text is not acceptable input for the particular value. Recheck the entered value. This message most commonly occurs if you press the "Ok" button when no text has been entered in response to a prompt.

The file version number is invalid.

An attempt has been made to open a *Bookworm* database that is incompatible with the current version of *Bookworm*. The UPDATE program included on the *Bookworm* distribution disk should be used to update the database to the most recent file format.

The folder version number is invalid.

An attempt has been made to open a *Bookworm* folder that is incompatible with the current version of *Bookworm*.

The format version number is invalid.

An attempt has been made to open a *Bookworm* journal format definition file that is incompatible with the current version of *Bookworm*.

The output disk is full - this file is now set R/O.

The disk containing the reference database is now so full that changes to the database (additions, updates, deletions) cannot be permitted.

The output disk is nearly full - this file is now set R/U.

The disk containing the reference database is nearly full. To ensure enough disk space remains for updates to existing references, the file has been set to R/U (read and update) status. No further additions to the database can be permitted.

There are too many open files.

The number of open files equals the limit set by the FILES= statement in your system's CONFIG.SYS file. If you require that more files be opened simulataneously, exit *Bookworm* and edit the CONFIG.SYS file to increase this limit. Then reboot the sytem so the changes come into effect. Alternatively, close some files in use by other

programs running on the *Windows* desktop.

There is insufficient disk space to complete the operation.

There are more references in an import file than can be accommodated on the disk containing the *Bookworm* database. Either reduce the size of the import file or transfer the database to a disk with more available free space.

There is insufficient memory to continue.

A request *Bookworm* made to *Windows* for more memory was denied., most likely because too many other programs are currently running on the *Windows* desktop. Close some of the programs and select "Retry" (the default).

Undefined message <text>.

A message code that *Bookworm* does not understand has been received from *Windows*. Record the circumstances leading up to the appearance of this message, and the actual contents of <text>, and report them to the author. In some rare circumstances, this message may appear if the requested search contains too many AND levels. Reduce the size of the search and retry.

Unknown DOS error <text>

An unknown DOS error message has been received while accessing the disk file. This could occur for a variety of reasons, some of which could jeopardize the integrity of your reference database if you continue using the program. Save any unsaved references (using the File Save command), then exit the program immediately. Then restart the program and reopen your database. Record the circumstances leading up to the appearance of this message, and the actual contents of <text> and report them to the author.

Appendix B: Modifying WIN.INI

Users may customize *Bookworm* by editing the contents of the *Windows* initialization file WIN.INI in two places. Be warned, however, that these changes should only be attempted by experienced *Windows* users.

1. When Bookworm is run for the first time, it adds several lines to the [extensions] section of WIN.INI to allow the user to load a *Bookworm* database by selecting any of the files comprising the database. If *Bookworm* is moved to a new directory, or if the directory is renamed at any time, these lines <u>must</u> be changed.

   For example, if the BOOKWORM.EXE program file is contained in the directory C:\ WINDOWS\BOOKWORM, the appropriates lines in WIN.INI will be:

   [extensions]
   ref=C:\WINDOWS\BOOKWORM\BOOKWORM.EXE ^.REF
   rf0=C:\WINDOWS\BOOKWORM\BOOKWORM.EXE ^.REF
   rf1=C:\WINDOWS\BOOKWORM\BOOKWORM.EXE ^.REF
   rf2=C:\WINDOWS\BOOKWORM\BOOKWORM.EXE ^.REF
   rf3=C:\WINDOWS\BOOKWORM\BOOKWORM.EXE ^.REF
   rf4=C:\WINDOWS\BOOKWORM\BOOKWORM.EXE ^.REF
   rf5=C:\WINDOWS\BOOKWORM\BOOKWORM.EXE ^.REF
   rf6=C:\WINDOWS\BOOKWORM\BOOKWORM.EXE ^.REF

2. Several Bookworm customization features are contained in the section of WIN.INI labelled [Bookworm]. This section is created by Bookworm when it is run for the first time, and is updated as the user makes changes to the program.

   For example, a typical [Bookworm] sections is as follows:

   [Bookworm]
   UserName=
   UserNum=
   FolderPath=C:\WINDOWS\BOOKWORM
   FormatPath=C:\WINDOWS\BOOKWORM
   Format=0
   Font1=Helv,20

   As above, if the *Bookworm* program files are moved to another directory, the lines giving the directory name for FolderPath and FormatPath <u>must</u> be changed so *Bookworm* will be able to find the Folder and Format files respectively.

Appendix C: *Bookworm* Technical Information

Program source code language   Microsoft C 6.0
Size of source code   approx. 350K

Maximum number of references per file   32,000
Number of references held in memory simultaneously   15

Bookworm Index file format:

Each Bookworm database consists of eight files: 1 index file containing offset information, and 7 field files containing text for each of the fields in the database.

1. Index file (*.REF):

    Each index file is initiated by a 7 byte header comprised as follows:

    Name   Length (bytes)   Description

    ID   2   identifies the files as one created by *Bookworm* (always set to 18247)

    Version #   2
    identifies the version number of the file format - set to 2 for this release

    Signature   2
    identifies the file and all field files associated with it

    Total Refs   2   the total number of references in the database

Following the header are groups of 28 bytes, one for each reference in the database. The 28 bytes comprise 4 bytes for each of the 7 fields in the database; each 4 bytes in a long value used as an offset for the position of the first character of the reference in the field file. For example, if the offset is 14, then the first character of that reference will occur at the 14th byte of the file.

2. Field files (*.RF?)

    Each field file is initiated by a 2 byte "header" made up of the same characters as

the Signature of the index file. This serves to "link" each of the field files together and protect against mixing files of the same name.

Following the header are records for each reference in the database, each organized according to the following format:

Name   Length (bytes)   Description

RefNum   2   the number of the particular reference in the database

TextLength   2   the number of characters in the text for the field - set to 2 to permit greater than 256 characters per field for use in future versions of the program

FieldText   variable   a text string of TextLength number of characters

FmtCnt   2   the number of formatting changes in the text string

Formats   variable   FmtCnt number of records, each comprised of 2 numbers (1 byte each) for one formatting change; the first byte denotes the font selection, the second is the last character in the text string affected by the particular formatting change.

Note that if either TextLength or FmtCnt is set to 0, then FieldText or Formats respectively will not occur in the file for the particular reference.

Appendix D: The ANSI character set

Bookworm can display and store any character from the ANSI character set. Although some characters are not present on the standard IBM PC keyboard, they can be entered by pressing and holding the Alt key, followed by a sequence of four numbers, then releasing the Alt key. The following table gives the number sequences for all characters in the ANSI character set. For example, to get a Ø, the number sequence is 0216 (021 from the left-most column in the table, and 6 from the column in which Ø appears). Note that if references are printed to a file or imported from a disk file, they are assumed to be in ANSI format, unless the "ASCII file" checkbox is checked in each case.

	0	1	2	3	4	5	6	7	8	9
001					□	□	□	□	□	□
002	□	□	□	□	□	□	□	□	□	□
003				!	"	#	$	%	&	'
004	(	)	*	+	,	-	.	/	0	1
005	2	3	4	5	6	7	8	9	:	;
006	<	=	>	?	@	A	B	C	D	E
007		G	H	I	J	K	L	M	N	O
008	P	Q	R	S	T	U	V	W	X	Y
009	Z	[	\	]	^	_	`	a	b	c
010	d	e	f	g		i	j	k	l	m
011	n	o	p	q	r	s	t	u	v	w
012	x	y	z	{	|	}	~	DEL	€	
013	‚	ƒ	„	…	†	‡	ˆ	‰	Š	‹
014	Œ		Ž			‘	’	“	”	•
015	–	—	˜	™	š	›	œ		ž	Ÿ
016		¡	¢	£	¤	¥	¦	§	¨	©
017	ª	«	¬		®	¯	°	±	²	³
018	´	µ	¶	·	¸	¹	º	»	¼	½
019	¾	¿	À	Á	Â	Ã	Ä	Å	Æ	Ç
020	È	É	Ê	Ë	Ì	Í	Î	Ï	Ð	Ñ
021	Ò	Ó	Ô	Õ	Ö	×	Ø	Ù	Ú	Û
022	Ü	Ý	Þ	ß	à	á	â	ã	ä	å

023   æ   ç   è   é   ê   ë   ì   í   î   ï

024   ð   ñ   ò   ó   ô   õ   ö   ÷   ø   ù

025   ú   û   ü   ý   þ   ÿ