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**SCI-MATE AS A TOOL FOR PROFESSIONALS**

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**Abstract**

Some key features of the SCI-MATE software, distributed by the Institute for Scientific Information, Philadelphia, are discussed in relation to the need for information filing and retrieval of professionals, notably scientists, based on the author's personal experience with this package.

**Introduction**

We shall assume in this contribution the validity of Stibic's<sup>1</sup> proposition that "every professional person (scientist, researcher, technician, manager, etc.) owns his [or her] collection of documents (books, reports, journals, cuttings, photocopies, slides, microfiches, letters, drafts, notes etc.) that must be well organized and accessible at any time."

This proposition is certainly true for me: as a scientist, I own a collection of reprints, books and other materials that is extremely important to my work. However, keeping instant access to this collection became increasingly difficult as it kept growing. Not being able to retrieve documents when I needed them became for me, in the mid-1980s, the rule rather than the exception. Indeed, I assessed that, as the end of this period, when "filing" was, for me, a matter of "piling", I spent, when writing a manuscript, about 80% of my time searching for documents, and only 20% on actual writing.

Stibic's book, written just before personal computers became widespread did not help; however, it emphasized microfiches punchcards and other inelegant approaches, and systems which, while computerized, depend on access to mainframe computers and terminals.

In the mid-1980s, it was obvious that the solution would be a microcomputer running some powerful database program, and those of my friends and colleagues with a headstart in computers advised me to use DBase II/III or a similar general-purpose filing program.

<sup>1</sup>Stibic, V. 1980. Personal documentation for professionals: means and methods. North-Holland Publ. Co., Amsterdam, 214 p.



I did not wish, however, to have to learn yet another set of intricate commands, and opted instead for SCI-MATE, a program dedicated to managing a professional's document collection<sup>2</sup>.

## SCI-MATE Components and Operation

The SCI-MATE package consists of three integrated components:

- 1) The Personal Text Manager;
- 2) The Universal Online Searcher;
- 3) The Editor.

"The Universal Online Searcher" is used to search electronic databases such as DIALOG or MEDLINE and will not be further discussed here, because online searching of such commercial databases, which is performed via telephone lines to the USA, is, in the Philippines, at present, not a realistic option for professionals (note, however, that the ICLARM library occasionally searches the DIALOG database online).

The "Editor" component of SCI-MATE, similarly, need not be discussed here, as it was developed mainly to modify the bibliographies of submitted manuscripts such that they match the requirements of different scientific journals. This leaves us with the "Manager".

The Manager itself consists of three components:

- i) utility programs for installing a printer, certain video displays, disk drive assignments, etc.;
- ii) a temporary "work file" to store and/or manipulate records read e.g. from a word processor, or from the "user file" (see below), and
- iii) a permanent "user file", where one's records are stored using one or more of 20 available formats (called "templates"), and which can be searched at will.

Exhibit 1 provides an example of a template, i.e., of the format I use to store and retrieve the entries in my collection. Other formats are possible (with more "fields", such, e.g., as authors' addresses, notes, etc.), but did not appear necessary for my need.

Important here is that it is not necessary to reserve any amount of memory for the different fields, i.e., SCI-MATE uses a "dynamic" allocation of memory, such that no more space is used by a given field than is actually needed by the entry. The net effect is that even a large collection of SCI-MATE records occupies a relatively small amount of memory - an important consideration when one's hard disk tends to get crowded. Thus, for example, my collection of nearly 18,000 records uses only 7 megabytes of hard disk memory.

This dynamic memory allocation also allows users to modify records, to make them longer (up to 19,000 characters), or shorter, or to delete or replace records, all without creating "empty space" in one's file - a feat not achieved by most other database programs.

The most important feature of the SCI-MATE user file, however, is its "searchability", i.e., the fact that it can be searched using Boolean logic, by combining search terms with the "and" and "or" operators.

USER File Accession Number 11404 <div style="text-align: right; margin-right: 50px;">           number specific to a given record            ↙         </div>	
Author	Aprieto, V.L.
Year	1977
Title	Resource assessment as a joint government and private sector effort.
Source	Paper presented before the Fishery Industry Development Council Workshop on municipal fisheries development, 18-22 December 1977, Covelandia, Resort Hotel, Philippines, 13 p.
Keyterms	FA:REPR25:145, aquaculture, population dynamics, research
	<div style="display: flex; justify-content: space-around;"> <div style="text-align: center;">           code for locating box, and paper in box         </div> <div style="text-align: center;">           keywords - may be entered after record has been created         </div> </div>

Exhibit 1. Illustrating one of the possible templates used when creating records for SCI-MATE.

<sup>2</sup>See Garfield, E. 1983. Introducing SCI-MATE - A menu driven microcomputer software package for online and offline information retrieval. Part 1: the SCI-MATE personal data manager. Current Contents, March 21, p. 80-87. and Garfield, E. 1984 SCI-MATE 1.1: improved customer service and a new version the software for personal text retrieval and online searching. Current Contents, February 20, p. 50-56.

Exhibit 2 documents the results of a search of my reprint collection using the search terms "Ronquillo and tuna#", illustrating a search likely to be performed by marine biologist working on Philippine fishes (note the use of the symbol #, a "wild card" which can replace any group of characters).

SCI-MATE offers a large number of additional services and options, but I believe it is the three points above (compactness of records, searchability and separation of the physical records from their "markers" in the database) which makes SCI-MATE, or any similar system, particularly attractive.

USER File Accession Number 15099	
Author	Ronquillo, I.A. and
Year	1953
Title	Food habits of tunas and dolphins based upon the examination of their stomach contents.
Source	Phil. J. Fish. 2(1-2):72-83.
Keyterms	FT:REPR44:151
USER File Accession Number 15104	
Author	Villadolid, D.V., T.G.Megia and I.A. Ronquillo and
Year	1953
Title	An outlook of the Philippine tuna fisheries.
Source	Phil. J. Fish. 2(1-2):158-160.
Keyterms	FT:REPR44:156

Exhibit 2. Illustrating the output of a SCI-MATE search using the search terms "Ronquillo and tuna#". Note that the first item would have been missed had the search terms been "Ronquillo and tuna".

## System Implementation

SCI-MATE is offered in a number of configurations, of which those for Apple II (with CP/M) and particularly for IBM PC (and their compatibles) are probably the most attractive to professionals in the Philippines.

I first used SCI-MATE with an Apple IIc fitted with a Z-RAM card and standard 5 1/4" Apple diskettes. The problem with this configuration is that SCI-MATE user files cannot extend to more than one disk, and hence that every search had to be reformulated for each diskette (i.e. about 200 records, given the low capacity of standard Apple diskettes). This problem became less when I acquired an Apple Unidisk, whose 3.5" diskettes could store up to about 700 records. In retrospect, I think that running SCI-MATE on an Apple II, without a hard disk, is like driving a Ferrari along the drag strip on Shaw boulevard.

The MS-DOS version of SCI-MATE requires a minimum of 254K of RAM and two disk drives, or one disk drive and a hard disk (based on my experience with the Apple, I strongly recommend the use of a hard disk). I now use SCI-MATE on a Compaq Portable II with a Hardcard+ and never had compatibility problems, my previous Apple files all having been converted to MS-DOS-readable file using the "Apple Turnover" card and software.

Like all licensed SCI-MATE users, I receive a quarterly newsletter, SCI-MATE MATTERS, now in its fifth volume. The only real problem with the SCI-MATE Manager is its price, a hefty 540 US\$<sup>3</sup> or 880 US\$<sup>3</sup> when bought in conjunction with the SCI-MATE Universal Online Searcher.

## Acknowledgements

I would like to take this opportunity to thank Ms. Maria Christina "Bong" Ibañez and Mrs. Susan "Tuttay" Luna for entering my reprint collection into SCI-MATE and Ms. Maria Lourdes "Deng" Palomares for keeping the integrity of my files.

<sup>3</sup>These prices refer to 1984 and are now probably lower, especially since the complete SCI-MATE package now also includes the Editor. For details contact the Institute for Scientific Information, 350 Market Street, Philadelphia, PA. 19104, USA.