

Current Comments

On the 25th Anniversary
of *Current Contents/Life Sciences*
We Look Forward to the
Electronic Online Microcomputing Era

Number 4

January 25, 1982

This year marks the twenty-fifth anniversary of *Current Contents/Life Sciences* (CC[®]/LS).¹ The true beginnings of CC go back to earlier editions in the information, management, and social sciences.² CC/LS, however, really started when I was working as "documentation" consultant to the pharmaceutical industry. Charlotte Studer Mitchell, a librarian at Miles Laboratories, asked me to produce a contents page service for the medical and pharmaceutical literature. A similar service was available at firms like Lederle Laboratories.³

CC/LS was not an instant success. The advent of Xerox platemaking technology made it possible for me to multi-lith printed contents pages on an 8" × 10" sheet of paper in ISI[®]'s first office. (See Figure 1.) The demand for the service grew steadily, first among the pharmaceutical companies, and later in academe after we started to print CC in pocket-sized format.

Today CC/LS has an estimated readership of more than 250,000 scientists throughout the world. In some places, a single subscription is shared by hundreds of readers. We've come a long way since those early days when I used to leave copies in the restrooms at the April meetings of the Federation of American Societies for Experimental Biology (FASEB) in Atlantic City, New

Jersey. At the meetings of the American Society for Clinical Investigation, I approached the "young Turks" on the boardwalk and asked if I could "survey" how they were getting current scientific information. Many of them became early subscribers to CC, and went on to make important breakthroughs in medicine. I like to believe CC was of some help to them, and continues to be so.

I could, of course, rhapsodize about the many new features added to CC since it began as a simple compilation of xeroxed contents pages. Even back in those days, the cost of paper, printing, and postage was not trivial. So the first innovation was reduction and/or cut and paste. This occasionally means that the print size is smaller than ideal, but we are still largely at the mercy of the individual journals unless we use completely computerized typography. For many reasons, as advanced as this technology is now, it is often impossible to computer-typeset a contents page in a format identical to that of the original journal. And it is a remarkable example of human resistance to change that many publishers will not give even half an inch to make their contents pages more legible in CC.⁴

I emphasize these points because many people seem to forget that CC's primary use is for browsing. The typical reader still thumbs through almost every

Figure 1: Where *Current Contents*[®]/*Life Sciences* was first produced—a converted chicken coop in Thorofare, New Jersey.



page of *CC* and then checks off those articles which are must reading—in the library or as reprint requests.

You may wonder why we go to so much trouble to provide current journal, subject, and other indexes. On particular occasions, even the most diligent browsers may be in a hurry to find the latest issue of *Lancet* or the *Journal of Biological Chemistry* to locate an article they or some colleagues have just published. Librarians also find the journal index handy for a variety of reasons, so we also cumulate them three times a year. While this is included in *CC/LS*, our *Quarterly Index to Current Contents*[®]/*Life Sciences* (*QUICC*[™]/*LS*)⁵ is not. We launched it a few years ago believing that most readers had a need for it. As it turns out, it is used mainly by libraries.

Every good journal needs a table of contents. Ours includes the alphabetical list of journals covered in that issue and also identifies the categories we have set

up for those who may want to skip over specialties they rarely consult. These rough classifications can never satisfy all readers any more than we can design a perfect subject index. The Author Index and Address Directory is intended to provide addresses for reprint requests as well as to identify where the research was done.

I'm still hoping that someday we will be able to include telephone numbers in this directory to facilitate communication. After all, that's what *CC* is all about. Of course, the average reader doesn't realize how much effort we expend in preparing those addresses. Most life sciences journals now include unambiguous and complete addresses.⁴ But a large number still do not. The problem is still quite serious in the soft sciences or in more traditional journals in the sociology or history of science.

Most publishers realize that regular exposure to a relevant journal will eventually cause a *CC* reader to enter a sub-

scription, or recommend its purchase to the librarian. At that time, the Publishers Address Directory in *CC* is important in expediting the purchase. It's also useful just to know who the publisher is since readers learn to expect high standards from certain publishers. While most *CC* readers are strictly browsers, many others combine browsing with a systematic approach to locating all relevant articles in their own area of expertise. Our *Weekly Subject Index (WSI)* was designed with such readers in mind. But *WSI* also helps you when you want to locate a particular title you've encountered in a recent issue.⁶

If you're taking a systematic approach to your perusal of *CC*, you may want to adopt a system developed independently by several *CC* readers. I first heard about this method in detail when I was traveling on the Trans-Siberian Railroad. I was accompanied by my dear friend and colleague, Victor Vaskovsky, Far East Research Center Institute for Marine Biology, USSR Academy of Sciences. Vaskovsky acted as my translator when I was invited to conduct a lecture tour of the USSR several years ago. As we were watching the vast Siberian tundra go by, he told me about his clever and highly organized system for using *CC*.

Figure 2 shows a reduced copy of a worksheet that is used by Vaskovsky and others. Vaskovsky prepares a profile of terms arranged in alphabetic order. He checks each of these terms in *WSI*. If he finds there are entries of interest that week, he notes the article page number next to the appropriate *CC* page number on the worksheet. He doesn't turn back to each page one at a time. When he begins his browse through *CC*, he can check the worksheet to see whether there are papers on that page to check. All this saves a great deal of time over looking up items one

at a time. He then prepares reprint request cards for articles that are not available in his library. Vaskovsky makes a practice of buying the latest and most beautiful Soviet stamps so that many of his reprint contacts look forward to his cards.⁷ Reprints often arrive months before the journals do. John Keeseey, UCLA School of Medicine, uses a similar approach.⁸ He's tried asking others to check *WSI* for him, but has found that the only way to be sure all important articles have been identified is to do the checking himself. This is his form of "information insurance."

Another *CC* scanner, Francis C.G. Hoskin, Illinois Institute of Technology, uses his copy of *CC* as a personal reference tool. Hoskin first goes through each issue, and dog-ears the *CC* pages in which he has identified pertinent papers. After checking to make sure he hasn't already received a preprint, he goes to the library. There he verifies that each article is relevant to his interests, and puts a colored tag on the appropriate page in *CC*. For example, a red tag indicates an article on phosphorus as a primary area of interest, a yellow tag sulfur, etc. Some issues have many colored tags, some none. Hoskin reads the articles bearing on his present research, and stores the tagged copies of *CC* in his office. When the need arises, as in rewriting a grant application, he can tap this file of references. Pulling the issues of *CC* that have the appropriate colored tags, he returns to the library, and retrieves the articles he wants.⁹

There are undoubtedly many variations on the basic theme described above. One of my friends in Mexico devised a clever scheme for translating *WSI* into a coordinate indexing system. Using two copies of the index, he could compare the list of article numbers under two different terms in *WSI*, and

Figure 2: *Current Contents*® (CC®) worksheet similar to one devised by Soviet scientist Victor Vaskovsky. After checking a profile of terms in the *Weekly Subject Index* at the back of each issue, Vaskovsky writes the journal page number of appropriate articles next to the corresponding CC page number.

DATE:

CC Page No.	Journal Page No.	CC Page No.	Journal Page No.	CC Page No.	Journal Page No.	CC Page No.	Journal Page No.
11		60		109		158	
12		61		110		159	
13		62		111		160	
14		63		112		161	
15		64		113		162	
16		65		114		163	
17		66		115		164	
18		67		116		165	
19		68		117		166	
20		69		118		167	
21		70		119		168	
22		71		120		169	
23		72		121		170	
24		73		122		171	
25		74		123		172	
26		75		124		173	
27		76		125		174	
28		77		126		175	
29		78		127		176	
30		79		128		177	
31		80		129		178	
32		81		130		179	
33		82		131		180	
34		83		132		181	
35		84		133		182	
36		85		134		183	
37		86		135		184	
38		87		136		185	
39		88		137		186	
40		89		138		187	
41		90		139		188	
42		91		140		189	
43		92		141		190	
44		93		142		191	
45		94		143		192	
46		95		144		193	
47		96		145		194	
48		97		146		195	
49		98		147		196	
50		99		148		197	
51		100		149		198	
52		101		150		199	
53		102		151		200	
54		103		152		201	
55		104		153		202	
56		105		154		203	
57		106		155		204	
58		107		156		205	
59		108		157		206	

when these numbers matched he knew they were articles on a combination of general terms.

It is not so much the reading or scanning of *CC* that readers consider a burden, but rather the work it leads to, such as preparing reprint requests, or storing the references on file cards. While many can afford the luxury of having the departmental secretary prepare these requests, these tasks are often simplified by the use of ISI's *Request-A-Print*[®] (*RAP*) cards.

The advent of the microcomputer, and the minicomputer before it, has increased the interest in obtaining references identified in *CC* by scanning in computer-readable form. The interest in adapting microcomputers to the reprint retrieval problem is illustrated by the response to the *PRIMATE* system which I described about two years ago.¹⁰ Over 200 readers wrote to me. *PRIMATE* was originally an acronym for Personal Retrieval of Information by Microcomputer And Terminal Ensemble. In the future, it would more accurately be called a system for Personal Retrieval of Information, Manuscript preparation, And Telecommunications Ensemble. While a number of unanticipated factors have delayed the implementation of *PRIMATE*, I'm glad to report that a practical system is close to implementation.

One of the complexities involved in developing such a system is the large number of different hardware ensembles available. *PRIMATE* was originally designed only to solve the problem of burgeoning reprint collections. Using some clever string-searching algorithms, you could search your personal files by title words, subject descriptors, authors, etc. Once we did more market research, however, we found that people not only wanted text searching but word processing for manuscript prepa-

ration, etc. Furthermore, the average *CC* reader wanted *PRIMATE* to augment his or her scanning by reducing the work needed to input bibliographic data, especially authors' addresses. And since microcomputer technology was changing so rapidly, *PRIMATE* also had to function as a terminal so that readers could access our, and other, online data bases in a user-friendly way.

In the future, a *CC* reader with access to a *PRIMATE* system would be able to scan *CC* in the usual way. After checking the articles of interest you would simply key in the issue code numbers that already appear on the *CC* page. These appear in the ovals at the top of each page. A lab assistant or secretary could be trained to key in these article identifiers (a combination of our issue code number and page number). Once online to the *CC* data base, the keying of these code numbers would cause the complete bibliographic information to be stored on your microcomputer's floppy discs. Reprint cards could then be generated as a by-product.

A few *CC* readers have even suggested that they would want to scan contents pages on their video display units. While this is technically possible right now, it does not take into account the real shortcomings of video display units for prolonged reading purposes. It also ignores the reality of typographical and other aesthetic considerations that make scanning pleasant. In the foreseeable future, perhaps in five to ten years, flatbed portable screens may become commercially available. That may make it possible to substitute the printed page with electronic images. In that event we would simply transmit relevant portions of *CC* to you based on a journal profile or profiles comparable to those we use in *Automatic Subject Citation Alert* (*ASCA*[®]). *PRIMATE*'s software would enable you to identify or mark those ar-

ticles you want to store permanently in your own *PRIMATE* file.

Clearly it is a simple step from this to generate a list of articles to be sent to your library, so that the articles themselves could be delivered to you. In the meantime I suspect that even on its fortieth anniversary, *CC* will still be going out in a printed version. Most of us will continue to browse on planes and other places where electronic access, even if developed to perfection, will not be readily available.

There is a great deal of speculation about the future paperless society including paperless journals. A modest amount of progress has been made in testing the feasibility of such systems. But even in the most advanced systems for storing the entire text of articles in chemistry or physics, there is not yet a hint of eliminating the printed journals from which the electronic versions are made in the first place. This may change if the cost of paper and postage escalates even more rapidly than in the past few decades. But for now it is still more efficient to deliver packages of highly relevant information on paper than it is to deliver that much information electronically. Just imagine the telecommunications traffic implied by delivering 15,000 copies of a scientific journal like the *Journal of the American Chemical Society* for browsing.

It is my expectation that by the end of this twenty-fifth anniversary year, the "*PRIMATE II*" system I've described here will become available to simplify the task of using *CC*. However, another system worthy of mention was developed several years ago by Irv Sher, ISI's director of development and quality control. Called "Super *CC*," this system is the ultimate combination of our *ASCA* system with *CC*. Instead of using a worksheet such as the one described earlier, we would use your personal pro-

file to generate a weekly computer printout that would tell you which pages of *CC* contained articles satisfying your profile specs. The Super *CC* printout would identify the specific articles of interest to you within each *CC* page.

Although *PRIMATE* is designed to facilitate this approach, if you don't plan on using a microcomputer, you might consider the benefits of combining your *CC* scanning with the benefits of an *ASCA* profile. The fact is that there are hundreds of *CC* readers who have been doing this for years. I've never understood why there aren't more. Sher's plan reduces the cost of delivering *ASCA* by limiting the weekly printout to one page. That's why I refer to it as the mini-*ASCA*. There are significant costs in operating any selective dissemination of information system like *ASCA* just in getting profiles prepared, implemented, and maintained. But Super *CC* might be a practical way of providing you with "insurance" that you had not missed anything in your reading. And it could even incorporate features such as citation searching so that you could tell who is referring to your work. If any of this excites you, please let me know and I'll be glad to give you a more detailed view of the possibilities.

Although it has been the case for over 15 years, most readers do not realize that *CC* is available on magnetic tapes. The advent of minicomputer and microcomputer systems has heightened the awareness of some readers to the potential of *CC* on tapes. However, the cost of these tapes must be shared by a group in order to make them cost-effective. Presently, in spite of the cost of paper and postage, there is no way that the electronic version can be delivered at the same price as the printed version. It remains to be seen whether in time technology can overcome that cost barrier.

But if we could transmit *CC* to you by telephone or by satellite that would simply be the reverse of what you can do with the *PRIMATE II* system.

For those of you who can remember *CC* during the first years, thanks for your support. Here's hoping you'll be with us for the next 25. Although there is much talk about the paperless society, don't hold your breath. We were supposed to have arrived at the cashless society by now until people learned that

there are many unforeseen consequences of such systems. While the *EUGRAM*¹¹ may be the wave of the future, we may yet discover that there was much more to the Gutenberg revolution than the invention of printing.

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My thanks to Joe Pickett for his help in the preparation of this essay.

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*Reprinted in: **Garfield E.** *Essays of an information scientist*. Philadelphia: ISI Press, 1981. 4 vols.