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Pyroclasts:
Surfing the Swamp

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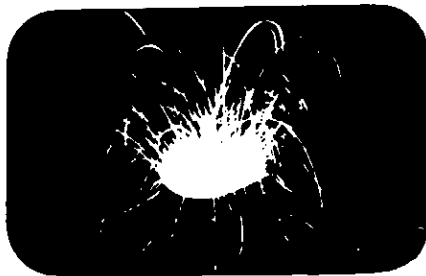
Pyroclasts

Surfing the Swamp

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Magazines such as *Geotimes* and the *AAPG Explorer* and the business sections of newspapers nowadays are full of breathlessly enthusiastic articles about the information highway. We are told that the Internet is an "undiscriminating club," that we can "transmit information to 30 million net users," that the "Internet has become a worldwide library without walls," that software used to navigate Internet is a revolutionary tool that "provides users with unprecedented access to information," and so on, blah, blah, blah. Why are we so ready to believe this stuff?

The fact is that this information revolution is largely an illusion. Information searches on the information highway are a joke. They are slow, use incomprehensible search techniques, and are ludicrously incomplete. Most communication is mindless babble. The true costs in time and money are enormous, and are largely hidden.

First of all, how do you gain access to the highway? Well, you need some expensive hardward and knowledge of an unintelligible gibberish called a search protocol that changes every few weeks. You do it "through dialup to an Internet host running SLIP," because, of course, using "SLIP and PPP software allows protocols enabling computers ... to establish a link to a node" and so on, using ftp., http:/, Gophers, Mosaics, Netscapes, and all those other effective communication techniques your old grandmother taught you at her knee. To gain access to this so-called high-speed process you have to spend days, weeks even, boning up on codes and acronyms, and learning how to follow precise procedures that make no inherent sense. Because computers are actually very stupid, if you make a single error in wording or punctuation, your search may all come crashing to a halt. There are no intelligible guides to all this, because they are written by the same computer nerds that invented all this stuff. And it is not high speed at all. A simple Gopher search of someone's e-mail address can take half an hour because of all the connections that have to be made, and because of slow data transmission and overcrowding on the "highway." It is necessary to search through layers and layers of options, each one identified by more incomprehensible acronyms. Commonly, the search is aborted because there are too many others already on the line. You will spend many minutes at a time simply sitting, waiting, staring at your screen, thinking about this high-speed revolution.

The Geological Society of America now proudly announces in all its publications and in the information it sends to its members, reviewers of journal articles, and so on, that everything is now "on-line." We can communicate with the editor by e-mail, we can view and download publications on "The Web", *etc.* But wait a minute. This amazing increase in efficiency takes at least half a page of gibberish to explain. You see, it all depends on which editor you need to communicate with, which hardware and which software you use, and which they use. Protocols and printing instructions are different for each. If you get it wrong, forget it. Snail mail looks better and better.

So how has your personal piece of the human condition been improved so far? You have had to clutter up your brain with meaningless computer languages that have taken weeks to learn and hours to implement, when you could have been out there bringing up a family or rewriting the Constitution.

And what do you get in an information search? A random assortment of whatever has taken the fancy of a few enthusiasts to scan in, plus the pickings of computer nerds, unthinking government departments anxious to appear modern, and the products of various commercial services, for which you will usually pay. You want a magazine on-line? What on earth for? Can you take a computer screen fishing with you? Is it really comfortable reading with the terminal plonked on your bed?

I have yet to discover any advances in the human condition made through the information highway, let alone interesting articles that have been written using information or data obtained through the Internet. The fact is that most of what is out there is unedited junk. If you want to spend hours and hours gossiping on the Internet, go ahead. If you think you can be better informed through the unedited burblings of Newsgroup junkies, be my guest. If you think anyone serious will devote quality time to answering dumb questions about science, technology or anything else from some unseen stranger who will not pay for the cost of his or her time, then I have this bridge in Brooklyn you

might want to inspect.

These wonderful advances do not come cheap. The enthusiasts like to claim that they do, but the fact is that the real cost of computer networks is hidden as "overhead" in the budgets of universities and government departments. I was glad to see, in the June issue of Geotimes, that the National Science Foundation in the United States is privatizing their Internet services. I hope the user will gradually be faced with paying the real cost of this expensive frill, and then perhaps the Internet scene and the World Wide Web, and all that, will settle into their appropriate place, as specialized services for very specific uses by individuals and organizations that can pay the real cost for something they actually want.

None of this would matter very much, except that it is in serious danger of diverting funds for "information" from the real information sources, that is to say libraries. Good old-fashioned libraries, full of paper and books, and with nice real people called librarians who know their stuff and are anxious to help. Library budgets are being seriously squeezed these days. University libraries are under pressure to reduce journal subscriptions and stop buying specialized books; they are also under another kind of pressure to increase their electronic holdings and the electronic access thereto. Public branch libraries, that sit out there in the suburbs serving real communities, may be closed so that the main branch can invest in this latest useless technology.

Increasingly, organizations are making information available to their users and customers on "The Web," which is nice for those who have the appropriate skills and equipment, but what about those who don't? Are they to become second-class citizens? Will there be a tendency eventually to eliminate the printing and distribution of hard copies of brochures, guides, handbooks, and other information and documentation that is currently being prepared by universities for potential students, by tourist boards for potential visitors, by companies for potential customers, and so on? We are assured that this is the coming of the new age, but it has yet to be demonstrated to me that this is a better, cheaper or more efficient way to distribute information. We are all being brainwashed to think that this is the

case, but this does not necessarily make it so.

I find electronic library services of minimal usefulness. I have never yet carried out a GeoRef search that I did not throw away in disgust. There are usually two kinds of references in a search output: those references that I already know about, and those I don't want to know about (because they are irrelevant, off topic, or out of date). So how has this helped me? I find it incomprehensible that anyone could think that several centuries of evolving library practice could be improved upon by an unskilled novice sitting somewhere else and trying to find it all out by tinkering on a computer screen. The problem with computer searches is that you essentially have to know what you are looking for before you begin. Then you have to rely on the results being complete, which they commonly are not. Even the elaborate Library of Congress indexing system cannot always guide you to the exact kinds of data or articles you might want, because much real research involves searching existing material for insights that the orginal author might not have been aware of, and, therefore, the material was not indexed to reveal it. Full-text searches, involving keywords or strings of words, or Boolean search routines, rely on the entire library being available electronically. Do not be fooled about this. The amount of scanned-in documentation currently available for such searches amounts to about a wheelbarrow full of sand from a major bathing beach, with truck loads of more sand arriving every day. Commercial on-line information services rely heavily on encyclopedias. Can an electronic version of something like the Encyclopedia Brittanica substitute for an entire library? Good enough for the kids' school projects maybe?

Soon, we are told, we will be able to do all our shopping on-line. I respectfully suggest that we need to think carefully about this before we are all persuaded to divert great gobs of resources to these new services. Like everything else connected with a computer, if you know exactly what you want, on-line shopping might work efficiently, but usually we don't know exactly what we want. Oh yes, there will no doubt be all sorts of information available by scanning menus and clicking this and that to pull down descriptions of products and ser-

vices, and they will no doubt be just as frustrating to use as those automated telephone answering services that never offer the one option that you called for in the first place. The computer will never replace a live human being who knows the products offered by his or her organization, and is skilled in providing service (people still flock to stores that provide excellent customer service, despite the growth of the serviceless warehouse store). Some commercial on-line organizations already allow us to order airline tickets by computer without going through a travel agent. For routine business travel this might be marginally useful, although telephone ordering services offered by the major airlines are already remarkably efficient (even though you actually have to talk to a real person to transact the business). But how could we ever dispense with the services of a really knowledgeable travel agent for complex travel problems, or when searching for good deals in vacation travel?

Another of the scams out there is that multimedia educational materials, such as CD-ROMs, will revolutionize education. Bunkum! Remember, back in the fifties or sixties, when televisions were going to revolutionize education, and schools and universities spent fortunes equipping every lecture room with a television set? How often are those sets turned on now, other than to play the national anthem for morning assembly? The fact is, teaching is labour intensive and difficult, and best done face-to-face by real flesh-and-blood teachers with whom the student can interact. The number of really good educational programs available on television or on video is limited. Even the good ones are not very effective in holding student interest, because of the impersonal nature of the medium. Most professional videos I have reviewed for use in my undergraduate classes in sedimentary geology are awful, with the exception of a few from the British Open University. Are we now all supposed to become geniuses because we can insert silly little snippets of video and music in reams of text and pretty graphics scrolling interminably up a computer screen? Give me a break! If the students have the remote control, they'll use it and surf onto something really good, like "Baywatch."

CD-ROMs may have a limited usefulness in providing supplementary mate-

rial and routine interactive exercises for advanced students, but even here, by their very nature, they may serve to limit students' access to the wealth of advanced material available in libraries, by encouraging them to be satisfied with the preselected collection recorded on the disk.

In some schools, children are now plonked down in front of computers to do their lessons, and sit there in isolation from each other, often with headsets on, so that they are totally cut off from their colleagues. Whatever happened to the idea of the school experience as a critical part of the socialization process for the very young? One begins to think that computers are being promoted by people who don't like other people very much.

In my view, the key to effective use of computers is selectivity. Computer word processing has revolutionized the way we write, and has generated whole new industries based on desktop publishing. Modern science and engineering would now be unthinkable without computers for data manipulation and management. However, computers have had virtually no impact on the way I teach or do library research, and serve a very limited function in communication (yes, I do have an e-mail address, and I use it quite often). Literature research is still carried out best manually. If you know something about a subject, go to the appropriate journals and scan article titles and see what is quoted in bibliographies. If you don't know anything about a subject, start with an encyclopedia or a recent textbook. There is no substitute for hard copies of books and journals. They are easy to use, carry around, scan, flip through, browse, copy. And there is no substitute for personal service from a real human being, whether it is at a library, a specialty store, or a travel agency.

Just remember this: the enthusiasm for the information highway comes mainly from computer nerds and those with a product to sell. Buyer beware. And by the way, everything I have said here has been said better and argued more completely by Clifford Stoll in his book *Silicon Snake Oil* published by Doubleday. Read it before you spend another dollar on computer technology!

Letter to the Editor

In Response to *Women in Geoscience* (Volume 21 Number 3)

Dear Dr. Thurston:

Women in Geoscience raises issues and comments on concerns which demand attention by all geoscientists. Geolgists will be encouraged to know that Ms. Linda Thorstad, P.Geo., was recently elected as President of the Association of Professional Engineers and Geoscientists of British Columbia. Our legally mandated organization registers professional engineers and professional geoscientists and regulates their practice in B.C.

Linda is the first woman Professional Geoscientist to be elected president of any Canadian provincial association. She is a consultant and is endorsed by our 17,000 members through her professionalism, good works, and contributions to professional affairs.

Linda Thorstad is also Chair of the newly formed Canadian Council of Professional Geoscientists. Her considerable energy and skill will further the interests of all Canadian geoscientists.

Sincerely,
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