droxide. The base ionizes the phenol, just as in the trapping of aspirin, and prevents it from diffusing back into the water. Li and Cahn have demonstrated that such systems can reduce the phenol concentration in actual refinery waste waters to well below 10 ppm at a projected cost of about $1.60 per 10,000 liters. This cost includes the expense of incinerating the spent emulsion.

Similar techniques can be used for the removal of other pollutants. Toshio Kitagawa and Yuji Nishikawa of the Takuma Company in Osaka, Japan, have been experimenting with the removal of heavy metals. They have found that chromium(VI) ions can be almost completely removed by LM systems containing so-

Speaking of Science

Science and the Press: Communicating with the Public

Learning how to deal with the press is not a standard part of a scientific education. In fact, it is not an exaggeration to say that many scientists view science reporters with suspicion and a few with outright hostility. But faced with the reality that research funds will probably never again flow as freely as they did in the 1960's, a number of scientists are coming to grips with the fact that the press is a useful tool for educating the public about what is going on in scientific research and, they hope, for generating support for that research.

In the words of Neal Miller of the Rockefeller University, "To put it very bluntly, the public pays for our research; how intelligently they support it depends on how they are educated. The science writers are the chief source of education of the public, so we have a stake in trying to help them with their work." Miller made the comments while introducing a session on communicating the neurosciences to the general public at the first seminar for science writers sponsored by the Society for Neuroscience, held at Airlie House, Virginia, on 3 to 6 May. (The proliferation of this kind of seminar, in which scientists are more or less isolated with reporters in a setting that fosters both formal and informal discussions, is another indication of the seriousness with which the press is being courted these days.)

During the session, four journalists* who specialize in science reporting described the problems they face and the kind of help they need from scientists in order to do a good job, and the scientists in turn responded with some of the reservations they had about talking with the press. The ideas were exchanged in an atmosphere of amiability, if not of total agreement. And the participants generally thought that the session was worthwhile. At least one scientist (who will be unnamed for fear of causing him to revert to his former policy) said that in the past he had refused to talk with reporters but that in the future he would at least answer queries from those present at the seminar.

Getting enough space—or time, in the case of radio or television—is usually the biggest problem faced by reporters, according to the panel members. Thus, they want stories based on solid facts or conclusions, or on new concepts. Nevertheless, space limitations frequently mean that a story must be condensed and simplified while, at the same time, it is being translated from scientific jargon into English that the audience can understand. There is little room for ambiguity, which is hard to write about, or for historical perspective, although reporters for scientific audiences may have more leeway to include these.

The reporters conceded that all this increases the risk of introducing inaccuracy into a news account of a scientific development, despite the care taken by a good reporter. And it may mean that what the scientist perceives as "a little blip on a very long and slowly rising curve," in the words of Floyd Bloom of the Salk Institute, will appear as a major "breakthrough" to the nonscientist.

Since reporters have to cover a wide range of subjects—from space shots to quarks to flu vaccinations—they cannot be experts about all of them. Thus, the panel members emphasized, the reporters need to know scientists whose opinions they can trust and who are willing to advise them, off the record if necessary, as to whether or not a particular item is worth writing about. Moreover, reporters who have to meet deadlines tend to be in a hurry to get that guidance. In order to meet these needs, the Society for Neuroscience now plans to publish a directory of members who are willing to serve as such sources for the press.

The discussion following the panel's presentation made it clear that what one person considers information, another, in this case Edward Perl of the University of North Carolina School of Medicine, may consider "publicity." The problem is particularly acute for the clinician since a news story about a clinical advance can result in an influx of patients who will pay for his services.

Just about everyone at the seminar agreed that facts must be attributed to particular scientists if they are to have credibility; quoting a "source close to Mother Nature" would be preposterous, despite the example of political reporters. The scientists thought that reporters could avoid suggesting that a scientist had sought publicity by indicating that the reporter had gone to the scientist, and not the other way around. They thought that including the information that a particular treatment was available at more than one place would also help. The reporters replied that these were, or should be, standard journalistic practices.

Finally, several scientists expressed reservations about the mechanisms for correcting distortions or errors in news stories. They were concerned that letters to the editor or errata rarely had the prominence of the original report.

The discussions did not answer everyone's reservations about news coverage of research developments. But David Leff made a point that all scientists might ponder. He said that bad communication will drive out good communication just as bad money drives out good money. In other words, if reliable scientists do not communicate with competent journalists, then charlatans and more sensational media would fill the vacuum. The choice then is not whether to communicate, but what to communicate and to whom.—J.L.M.

*Harold Schmeck, Jr., *New York Times* (chairman of the session); Ira Flatow, National Public Radio; David N. Leff, *Medical World News*; and Patrick Young, *National Observer*.