

minute. What is uncommon, he acknowledged, is the pulling of as many papers as were affected in San Diego.

In addition, since President Reagan took office, Eastern Bloc scientists were prohibited from attending at least two other meetings, according to the official. The incidents "haven't been publicized at all," he said, "but the fact is, it happens all the time." He referred to such meetings as "unclassified but closed."

"So much of the research and development that goes on today leads very closely from basic science to an application," said the Defense official. "The bottom line is a need for relative balance between science communication and national security. That's vital." —*Reported by Ivars Peterson in San Diego and Janet Raloff and Joel Greenberg in Washington, D.C.; written by Joel Greenberg*

Agent Orange issue: Far from settled

A standing-room-only crowd gathered last week at the Veterans Administration in Washington, D.C., for the routine, quarterly meeting of a VA advisory committee on the health effects of the herbicides that U.S. troops had used in Vietnam to kill unwanted vegetation and to defoliate trees. As was the case during past meetings, the focus was on Agent Orange, a reddish-brown liquid herbicide that contains traces of the contaminant 2,3,7,8-TCDD, a dioxin that causes cancer and birth defects in animals. The larger-than-expected turn-out, one speaker stated, reflects the growing public awareness of the possible health problems related to exposure to dioxins.

One reason for that growing awareness is a class action suit, being heard in the District Court for the Eastern District of New York, that represents many suits filed against manufacturers of Agent Orange by veterans who had been exposed to the dioxin-containing herbicide. In addition, dioxins were the subject of a recently settled suit filed by 47 former and current employees of the Norfolk & Western Railway Co., who participated in the clean-up of a TCDD-containing chemical spill from a ruptured tank car at Sturgeon, Mo., in January 1979. A jury awarded 32 of those plaintiffs an average of at least \$1 million each—a decision being hailed as a major victory by those sympathetic to the veterans involved in the Agent Orange lawsuit.

Asked what bearing this recent dioxin decision could have on the Agent Orange lawsuit, VA advisory committee members would only say that they are very interested in the case and are looking into its details. Another topic discussed was the proposed epidemiological study that will investigate the health complaints of veterans exposed to Agent Orange. This study has been at the drawing board stage for

years (SN: 12/12/81, p. 377), and at the recent VA committee meeting, Chairman Barclay M. Shepard announced that a National Academy of Sciences review of the proposed study protocol is expected within the next three weeks. Once an agreed-upon protocol is designed, a pilot study will be conducted to test it. Then, and only then, can a full-scale study be undertaken, Shepard said. As a result, the chairman said, meaningful results from such an epidemiological study are not expected until 1989. —*L. Garmon*

Ores: Prospecting with computers

An artificial intelligence program has successfully located concentrations of molybdenum, a mineral widely used in industry, researchers report in the Sept. 3 SCIENCE. The program, called PROSPECTOR, demonstrated for the first time the kind of expertise, intuition and judgment acquired by experienced geologists after years in the field.

The artificial intelligence model differs from standard computer programs for evaluating ore deposits because it incorporates into its reasoning process incomplete data as well as a large degree of uncertainty. PROSPECTOR can use the body of information an expert employs in thinking about a particular situation, such as a certain kind of ore deposit, explains René Reboh, director of the PROSPECTOR project at the Artificial Intelligence Center at SRI International in Menlo Park, Calif. "With incomplete, sometimes wrong, data a human expert still is able to give you some kind of opinion," he says. The artificial intelligence system tries to use the same kinds of techniques a human expert uses to try to arrive at a conclusion.

With refinement, the experimental program will help preserve and maintain the "library of judgment in exploration matters," which is difficult to express in writing, says Alan Campbell, a geologist who works as a consultant on the project. He co-authored the article along with independent field geologist Victor F. Hollister, and Richard Duda and Peter Hart of Fairchild Laboratory for Artificial Intelligence Research in Palo Alto, Calif. The researchers drew heavily on Hollister's extensive knowledge of molybdenum to provide PROSPECTOR with the deductive tools needed to evaluate a potential ore deposit.

Campbell says that "no exploration geologist will ever be replaced by this kind of thing," but adds that the technique may help people make more informed decisions.

PROSPECTOR was applied to an existing mine at Mt. Tolman in eastern Washington. Molybdenite was first reported there in 1918. PROSPECTOR indicates that the deposit is larger than previously thought,

and that mineralization might occur in other parts of the area. Thus, Campbell explains, while the program could not necessarily find a mine site, it can provide information leading to exploratory drilling. —*C. Simon*

Rescue search ends

The British Antarctic Survey in Cambridge, England announced last week that it has discontinued the search for three employees who were stranded by storms July 16 on Petermann Island off the East Coast of the Antarctic Peninsula. The island is about six miles from a British base camp at Faraday. The last radio contact with the men was August 13. Weather conditions had improved and the men were planning to cross the sea ice leading toward the Yalour Islands, three miles northeast of Faraday. They have not been heard from since. "We believe the men were drowned when they fell through thin ice," said Richard Laws, director of the survey. "If that didn't happen, then they were on thin ice when it was broken up by a sea swell, and they were carried out to sea." The team had enough food and fuel to last through October. Missing are Kevin Ockleton, atmospheric scientist; Ambrose Morgan, radio operator; and John Coll, diesel mechanic. □

Asbestos and bankruptcy

The Manville Corp., ranked 181 on FORTUNE magazine's latest list of the top 500 companies, recently filed for bankruptcy, stating it is "overwhelmed" by the 16,500 claims against it by persons exposed to asbestos (SN: 6/19/82, p. 409). Manville is the nation's largest producer of asbestos, a fire-proofing and insulating fibrous material. Inhalation of the fibers can cause asbestosis, an emphysema-like lung disease, and several forms of cancers (SN: 1/7/78, p. 5; 7/15/78, p. 41). Thousands of workers suffering from such illnesses have filed lawsuits now pending against Manville, a Denver-based company with a net worth of \$1.1 billion.

Manville's filing for reorganization under federal bankruptcy laws automatically freezes further proceedings of those lawsuits. What happens next depends on whether the U.S. District Court, Southern District of New York—where Manville filed for bankruptcy—dismisses the company's petition. Lawyers for asbestos victims could attack the bankruptcy petition on grounds that it was not filed in good faith, explains Charles Vihon of Cape Elizabeth, Maine, a former bankruptcy lawyer and now a consultant to the practice. And while "the issue of good faith is a difficult one to decide," says Vihon, it already has been used in a number of cases to get a bankruptcy petition tossed out of court. □