its rules for extramural grants such that "all data" collected using federal funds would be accessible under the Freedom of Information Act (FOIA). Until now, only data already in an agency's possession have been subject to FOIA. Shelby and others, backed by several business groups—including one that in 1997 tried unsuccessfully to get its hands on data from a federally funded air pollution study—argue that data paid for by taxpayers and used to craft regulations ought to be made available whenever a citizen demands it.

Many voices in the scientific community have registered deep concern about the new law, with organizations ranging from the National Institutes of Health (NIH) to the Association of American Universities citing worries over the law's apparent reach (*Science*, 15 January, p. 307). Among other things, these groups argued, the law could deprive researchers of the chance to analyze and publish their data before it becomes public; it might lead to invalidated clinical trails by allowing subjects to find out what treatment they are getting; and it could give companies access to privileged information. In a letter to OMB last month, Bruce Alberts, president of the National Academy of Sciences, argued that the law would bring "an enormous change in federal policy" that "will have serious, unintended consequences for the nation's research enterprise."

Some of those concerns were addressed in OMB's proposed rule, which appeared on 4 February in the *Federal Register*. The Administration's proposal would apply only to data from "published research findings produced under an award that were used by the Federal Government in developing policy or rules." Furthermore, agencies would have broad powers to withhold data under FOIA guidelines that aim to protect national security, proprietary information, and individual privacy. "They've taken a very constructive first step in drawing some boundaries," says Wendy Baldwin, NIH deputy director for extramural research.

The Administration acknowledges that the plan leaves many issues unresolved. "We're publishing our first cut," says an OMB spokesperson. Yet to be worked out is how to define "data"—whether to include lab notebooks, for example—and whether the term "published" should include, say, data described at a talk or in a press release. Another ambiguity is where to draw the line on data used to develop public policies: Could it include an entire "body of research?" Baldwin asks. The public has 60 days to submit comments on the proposal before a final version is hammered out. "The community needs to think very seriously about what the implications of this would be," Baldwin says.

Don't expect the final rule to be the last word. The Administration's narrow interpretation is likely to be challenged in court "by anybody who wants more information than they can get," Alberts told *Science*, a process that could drag out for months or years.

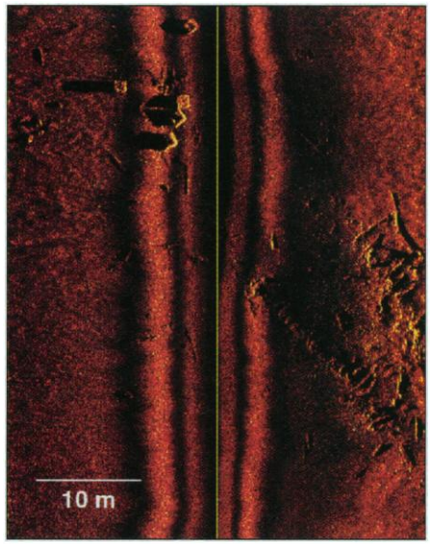
–JOCELYN KAISER

ARCHAEOLOGY

Black Sea Flood Theory to Be Tested

CAMBRIDGE, MASSACHUSETTS—Scientists plan to mount a major expedition this summer to look for remains of ancient settlements submerged in the Black Sea, a team including Robert Ballard, discoverer of the *Titanic* wreck, announced here on 30 January. The archaeological treasure hunt is meant to test a controversial theory that fast-rising waters some 7500 years ago drove coastal dwellers inland at a dizzying 1 to 2 kilometers a day, a cataclysm that some researchers say could have spread farming into Central Europe and perhaps even account for the biblical tale of Noah's ark.

In late 1997, oceanographers William Ryan and Walter Pitman of the Lamont-Doherty Earth Observatory in Palisades, New York, published evidence from sediment cores that about 5500 B.C., the rising Mediterranean Sea topped the shallow Bosporus straits and began gushing into the nearby Black Sea, until then a landlocked lake. The flood raised water levels 15 centimeters a day; by the time it ended, the sea was up about 150 meters and an area the size of Florida was underwater (*Science*, 20 February 1998, p. 1132). Many oceanographers consider this flood scenario credible, but archaeologists are



Shipshape. Last year's expedition found what may be a Turkish warship sunk in 1854.

CREDITS: (TOP) JACK DYKINGA/USDA; (BOTTOM) MARINE SONIC TECHNOLOGY LTD.

ScienceScope

Racing the Genetic Clock Science diplomats are scrambling to hammer out some last-minute compromises on a controversial international agreement to regulate the global traffic in transgenic organisms. A United Nations committee will convene next week in Cartagena, Columbia, to finalize a Biosafety Protocol to the 1992 Convention on Biological Diversity. The protocol is intended to prevent engineered organisms, such as crop plants, from escaping into the wild or transferring their implanted genes to other species; ministers plan to sign it later this month.

But some observers wonder whether the negotiators will run out of time before finding common ground. Some European and developing countries, for instance, want the pact to cover transgenic organisms and foods, drugs, and vaccines derived from them. On the other hand, U.S. officials—who will just be observers at the meeting because the Senate hasn't ratified the biodiversity treaty—fear such sweeping coverage could hurt the U.S. biotech industry. Says one U.S. diplomat: "Never in international negotiations have I seen a draft with this many key issues waiting to be resolved."

From Classroom to Boardroom In hopes of stimulating Japan's flagging economy, the nation's Ministry of Education (Monbusho) wants to change a law that prevents national university professors from serving as officials of private corporations. "There has been a lot of discussion over how Japan can encourage the creation of venture businesses as America does," says a spokesperson for Monbusho, which plans to ask the Diet, Japan's parliament, to end the ban. "We think Monbusho must do its part."

Removing the prohibition would be "a very good thing," agrees Ryozo Yoshizaki, a cryogenic engineer who heads an industry liaison office at the University of Tsukuba. But he cautions that a change is unlikely to have an immediate impact. "Professors are very happy to have their research benefit society, but most aren't interested in actively participating in the necessary commercial development," he believes.

Contributors: Bruce Agnew, Robert Koenig, Jeffrey Mervis, Martin Enserink, Dennis Normile

skeptical that the deluge altered the course of civilization. "I'm certain we have a flood," says Pitman. "But did it cause a diaspora? We can only speculate."

Now some of this speculation will be put to the test. In July, a team from several institutions—including the Massachusetts Institute of Technology (MIT), Ballard's Institute for Exploration (IFE), the University of Pennsylvania, and the Archaeological Museum in Sinop, Turkey—plans to use sonar to plumb the murky waters off Sinop for signs of settlements. A preliminary survey last July turned up promising results, says expedition coleader David Mindell of MIT, who organized the conference on deep-sea archaeology (see p. 929) where these findings were unveiled. According to Mindell, a side-scan sonar dragged from a hired fishing vessel revealed "shapes that are too large for a shipwreck and too regularly shaped to not be manmade" in coastal water 60 to 80 meters deep. If more probing by sonar indicates that the shapes are the remains of settlements, Mindell says, the team will use standard techniques—sediment coring and magnetometry, for instance—to date them. To test the theory fully, researchers will put on their detective hats and try to trace the hasty retreat of these erstwhile Black Sea dwellers—a migration that, if it happened, may be tied to the surge of farming across eastern Europe around the time of the flood.

The effort is the fruit of a budding collaboration between Ballard and archaeologist Fredrik Hiebert of the University of Pennsylvania, Philadelphia, to look for a deep-sea trade route between Sinop and ports along the Black Sea's northern coast. "I was like a kid in a candy store when Bob laid down a map of the Black Sea and said, 'Where shall we go?' " recalls Hiebert, who had begun land excavations around Sinop 3 years ago. The duo saw great potential for the preservation of artifacts—shipwrecks and other relics—in the Black Sea's oxygen-free waters below about 200 meters. "The anoxic bottom conditions make the waters rich with archaeological potential found nowhere else on Earth," says Mindell.

But after last summer's sonar survey, the team now thinks that there might be more sensational relics closer to shore. When Ballard, whose IFE is footing part of the expedition's cost, saw the grainy images of possible settlements, says Mindell, "he told me, 'This is the next *Titanic*.' " This summer, before going into deep water, the team will probe for near-shore settlements.

The researchers say they aren't out to prove the veracity of the biblical flood story, in which Noah and his family built an ark and rounded up two of every creature on Earth. "Noah's flood is not a testable hypothesis," says Hiebert. "We will test whether there was a strong level of occupation in the [Black Sea] basin when the sea level was low." Of course, there is one way to test the Noah story directly, jokes Mindell: "We could look for pairs of animal skeletons, too." —RICHARD STONE

AIDS

Cheap Treatment Cuts HIV Transmission

CHICAGO, ILLINOIS—A large study spanning three African countries has provided the strongest evidence so far that a relatively cheap and simple drug treatment can reduce the spread of HIV from infected pregnant women to their babies. The so-called PETRA trial also showed that one variant of the treatment is ineffective, a conclusion that the researchers say they could only have reached because they compared three different treatment regimens to a placebo. In 1997, the trial came under attack by critics who called that strategy unethical.

Funded mostly by the Joint United Nations Program on HIV/AIDS (UNAIDS), the trial involved 1792 HIV-positive pregnant women in South Africa, Tanzania, and Uganda who volunteered to test the ability of the anti-HIV drugs AZT and 3TC to prevent transmission. A preliminary analysis of tests conducted on 1326 babies at 6 weeks of age, presented here by Joseph Saba of UNAIDS at the largest annual U.S. AIDS conference,* showed that two types of treatment were effective. The most intensive strategy—in which the mothers were treated with the two drugs from the 36th week of pregnancy through 1 week after delivery and the baby was treated for 1 week—reduced the risk of transmission by 50%. Only 8.6% of the babies became infected, compared with 17.2% in the placebo group. Starting the same treatment at the onset of labor, they found, resulted in a transmission rate of 10.8%—a 37% reduction in risk. "This is a very important finding for developing countries," said Saba, noting that poor women often do not seek health care until labor begins. [A smaller study in Thailand last year indicated that treating the mother with AZT for 4 weeks before delivery cuts the risk of transmission by 50% (*Science*, 27 February 1998, p. 1299).]

Critics of the PETRA trial—including the consumer advocacy group Public Citizen and *New England Journal of Medicine* editor Marcia Angell—argued that a 1994 study conducted in the United States and France had made further use of placebo testing unethical. That study indicated that treating the mother with AZT for an average of 11 weeks before birth, coupled with an intravenous drip of the drug during labor and treating the baby for 6 weeks after delivery, could reduce HIV transmission from 25.5% in the control group to 8.3%—a drop of nearly 70%. Although critics of the PETRA trial acknowledged that this intervention is too expensive and cumbersome for poor countries, they contended that it should be used as a yardstick against which simpler regimens should be tested (*Science*, 16 May 1997, p. 1022).

The PETRA researchers point out, however, that such a study could have led to a wrong—and dangerous—conclusion. A third arm of their study, in which the mother was treated when she went into labor but the baby was given no treatment, saw a transmission rate of 17.7%—better than the 25.5% rate seen in the untreated arm of the 1994 study. If that study had been the only point of comparison, the researchers might have concluded that the so-called intrapartum treatment worked. But in the PETRA study, the transmission rate in the placebo group was about the same as in women who got the treatment. "You would never have seen without a placebo control that intrapartum alone does not do anything," says virologist Jaap Goudsmit of the University of Amsterdam, a principal investigator of the study.

Peter Lurie of the Public Citizen Health Research Group, the lead critic of these trials, says such arguments boil down to the ends justifying the means. "The question always will be, 'Could we have gotten to this point in

HIV TRANSMISSION FROM MOTHER TO BABY

Treatment	No. of babies tested	No. HIV+	% infected	% reduction in risk
From 36 weeks to 1 week postpartum; baby treated for 1 week	359	31	8.6	50
From onset of labor to 1 week postpartum; baby treated for 1 week	343	37	10.8	37
From onset of labor to delivery; no treatment of baby	351	62	17.7	0
Placebo	273	47	17.2	0

SOURCE: J. SABA *ET AL.*

* 6th Conference on Retroviruses and Opportunistic Infections, 31 January to 4 February, Chicago, Illinois.