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COVER: Black-tailed prairie dogs keep watch at the entrance to their burrow near Denver, Colo. Scientists are intrigued with the organized social structure of the prairie dog society. But the protection provided by the community warning system cannot defend against the encroachment of human society. See p. 29. (Photograph courtesy of U.S. Department of Interior, Fish and Wildlife Service)

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SCIENCE NEWS OF THE WEEK

Evolution at the AAAS

Weather outside was frightful, but inside it was science as usual. The site was a frigid Toronto. The occasion was the 147th annual meeting of the American Association for the Advancement of Science. And this year, in addition to the expected smorgasbord of science, the meeting had a special emphasis — directing science toward peace. For three days attendees were told of the dangers of nuclear proliferation, the necessity of getting serious arms control negotiations underway, the inadvisability of building the MX missile system and the impracticality of particle beam weapons.

Another topic that provided heat, if not light, was the revived anti-evolution movement. Physicist Rolf M. Sinclair of the National Science Foundation organized a session titled "Views of the Universe: Science versus Tradition." He came out of his ivory tower, he says, and was shocked to find out what the creationists are doing in schools. Their success in getting school districts to teach creationist ideas is restricting and perverting science education, he says.

The anti-evolution movement, explains William G. Mayer, director of the Biological Sciences Curriculum Study in Boulder, Colo., is a well-funded single-interest group "whose pervasive monomania bodes ill for education. Its attempts to influence state legislatures to mandate its beliefs occupy time and consume taxpayers' money. Anti-evolution efforts have diverted resources in states as diverse as Illinois, Iowa, Texas, Mississippi, Georgia and Indiana." The anti-evolutionists have been successful, he explains, because they now use a Madison Avenue approach and employ full-time staff while "there is not one scientist who is funded to devote full time to espousing evolutionary theory."

Not only are the creationists well funded, they know how to use science itself to fight against evolution. Big bang cosmology, for instance, is cited as evidence for the concept of divine creation. Milton K. Munitz of the City University of New York addressed this question and explained the difference between the physicist's concept and the fundamentalist's concept of the beginning of the universe. "Any interpretation of the notion of an absolute beginning of the universe as consisting in an alleged event impervious to further scientific investigations," he said, "simply misreads the logic of the situation." It's a philosophical or logical mistake, he says, "to look to those evolutionary scientific cosmologies that involve the concept of a beginning of the universe as support for a sophisticated traditional theological doctrine of creation."

Discussing the evidence for evolution, Smithsonian Institution scientist Porter M. Kier, former director of the National Museum of Natural History, said there are 100 million facts that support evolution. "In the museums of the world," he says, "there are over 100 million fossils that have been identified and age-dated. These fossils have been examined by many thousands of paleontologists and from their investigations we have learned a vast amount about the history of life on earth." Despite this evidence, Kier admits, "there are many well-educated people still questioning evolution. Part of the problem may be that evolution has been described as the 'theory' of evolution, which gives an erroneous impression — that scientists themselves don't accept evolution as accepted." The word "theory," he says, has done a great deal of damage and should be dropped and the word evolution should stand alone. "Scientists may argue over the details of evolution," he says, "but they agree that evolution is a fact and should be so labeled."

Why is it necessary to say all of this to a room full of scientists? Because the scientific community does not recognize the extent of the problem and has been apathetic in approaching it. Mayer says, "There has been little interest within the scientific community in anti-evolution arguments, which most scientists dismiss as nonsense on a par with the concerns of the flat earth society." But because anti-evolutionism can have damaging effects on science education, it is time for scientists to speak out. The session at this year's meeting, explains Sinclair, is just a beginning. The theme of next year's AAAS will be Science Education, and tentatively it will include discussions of ways to combat creationism and the teaching of religion as science. □

Jaws repellent and other sea treasures

Like a lion tamer's head in the king of beasts' mouth, the Red Sea Moses Sole hovers safely between the jaws of a reef white-tipped shark. Although the shark has just completed the "hunting turn" that characteristically precedes a shark attack and now has the Red Sea flatfish within its gape, it quickly veers away without harming the sole. At the American Association for the Advancement of Science meeting last week in Toronto, researchers explained that a milky secretion from the Red Sea flatfish is responsible for this marine phenomenon.

University of Maryland's Eugenie Clark