PALEONTOLOGY

Fossil Hunters Seek Ways to Bring Their Field Alive

FRANKFURT, GERMANY—The blockbuster movies *Jurassic Park* and *The Lost World* may have done a lot to keep dinosaurs in the public imagination. But, say paleontologists, the hard part is keeping public interest in their discipline alive once children get past the plastic model stage. With the ranks of paleontologists dwindling and graying, and industrial and grant support on the ebb, a diverse group of about 100 researchers were invited to a meeting here last month* to try to find a way to keep paleontology itself from becoming fossilized in the next century. And after much soul-searching, the group members—much to their own surprise—did arrive at a common view: that they need to ensure that valuable data are protected against loss through neglect and lack of funding, and to reach out to other disciplines as well as to the public. "Traditionally, paleontology has been done in isolation," says Chris Maples of the U.S. National Science Foundation. "This is an image problem to overcome."

Behind much of the soul-searching was the realization that paleontology has reached a boundary between eras. "Everybody converged on the same vision—that there is a fundamental shift happening, from narrative history to an integrative view," says paleobiologist Doug Erwin of the Smithsonian Institution in Washington, D.C. Dying out is the old way of doing paleontology, with researchers cut off from one another in a patchwork of subdisciplines. This balkanization has crippled fund raising. "Fractionation of the community results in many, many weak voices," says John Armentrout of Mobil Corp. In its place is an expanding web of connections in which, for example, paleontologists team up with stratigraphers and climatologists to probe how ice ages and other ancient climate shifts might help explain global weather patterns today.

Despite this cross-fertilization, paleontologists these days are becoming a rarer species. The oil industry, for example, is in the midst of a downsizing that has eliminated the jobs of many paleontologists, who provide crucial analyses of microfossils that help determine whether an oil field is worth exploring. Since the mid-1980s, Mobil has gone from 18 to five staff paleontologists and ARCO has slashed from 98 to 10, says Armentrout. And while the number of university paleontologists has remained stable over the last 2 decades, there has been a demographic shift in the United States: Assistant and associate professors have risen to full professors, but little new blood is coming in at the bottom, according to an analysis presented by Karl Flessa of the University of Arizona in Tucson (see graphic). "We are an aging cohort," Flessa says.

Another major problem is that museums and institutes are running out of room to house specimens and lack the funds to build more storage space. "I'm part of the first generation of Smithsonian curators that will have to decide which collections are more important than others and worth saving," says Erwin. The situation is even worse in the former Soviet Union, Eastern Europe, and other struggling regions where dwindling support is threatening whole institutions and their collections. "There is a danger that valuable information will be lost," says Warren Allmon, director of the Paleontological Research Institution in Ithaca, New York.

Participants pinned the bulk of the blame for the field's declining prospects on a failure to articulate their value to other scientists and to society. "Paleontologists are hobbyists in a sense," says meeting organizer H. Richard Lane, who runs Global Stratigraphic Associates, a consulting firm in Houston, Texas. "Like stamp collectors, they often don't go out and talk to the public." Paleontologists who do not train their grad students and postdocs adequately were also criticized. "Some people are being trained as technicians under the guise of being trained as paleontologists," says William Hay of the Research Center for Marine Geosciences in Kiel, Germany.

After this self-analysis, attendees offered some remedies. One is to get in the big-science game. "We have to learn from our colleagues in other disciplines that large, ambitious projects are good vehicles for increasing funding," says Flessa. One idea that drew widespread support is to seek $1 million for an international postdoc program for about 20 budding paleontologists a year, focusing on broad training in systematics—the common language of paleontology, biology, and other fields. The notion that paleontologists must raise the level of their systematics "was a fundamental part of the meeting," says Erwin.

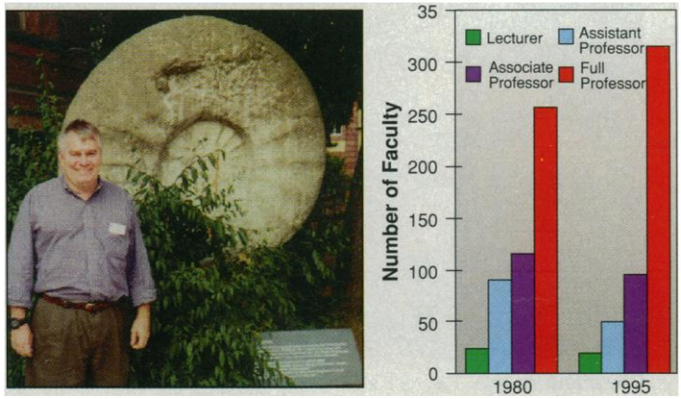
The postdoc program "is a terrific idea" that could open up jobs in other fields to paleontologists, says David Jablonski of the University of Chicago. More generally, those at the meeting felt that paleontologists must do better at initiating multidisciplinary projects, "not just waiting to be asked for our participation," says Mike Simmons of the University of Aberdeen in the United Kingdom. Simmons warns: "If we don't integrate, paleontology will die."

One of the more ambitious proposals aired at the meeting is to compile on the World Wide Web a comprehensive database of paleontological holdings. That way, says Allmon, "in theory, every collection in the world can alert us to their existence." Norman MacLeod of the Natural History Museum in London is planning a drive to create a prototype database. "Paleoinformatics is something that anyone in the paleontology community can get behind," he says.

There was also much discussion on how to refashion paleontology's public image. Many favored finding a spokesperson of sorts to serve as their own Carl Sagan, someone who could rekindle the passion for paleontology that often dies out at puberty. And whoever takes the stage "should not be bad mouthed by others in their profession," says Jere Lipps, director of the Museum of Paleontology at the University of California, Berkeley.

Although there was some grousing among paleontologists not invited to the meeting, the overall tone at the end was positive. "I came in quite skeptical," says John Flynn of the Field Museum of Natural History in Chicago, who says the attendees achieved a "pretty remarkable" consensus. This consensus will be put to the test in the coming weeks, as proposals are sharpened and posted on the Web for comment (www.nhm.ac.uk/paleonet/paleo21).

–Richard Stone



Professional stratification. H. Richard Lane asked colleagues for ideas to bring new blood—and funds—into a graying field *(right)*.

* "Paleontology in the 21st Century," Senckenberg Natural Research Institute, Frankfurt, 4 to 9 September.