Claim-Jumping Charges Ignite Controversy at Meeting

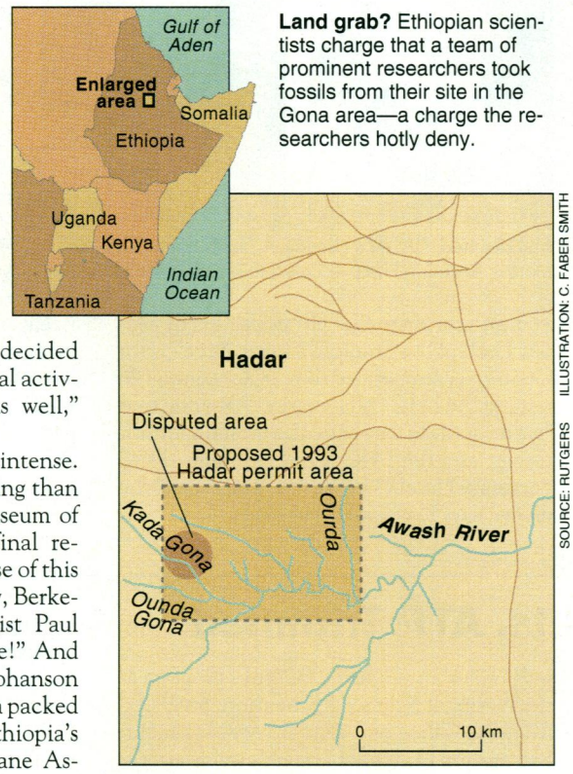
OAKLAND, CALIFORNIA—When Ethiopian archaeologist Sileshi Semaw rose to address his colleagues at a recent meeting here,* the audience settled back to listen to a routine status report on Semaw's Ethiopian archaeological site. But Semaw's talk was anything but routine. "I'd like to bring to your attention a violation of professional ethics," announced Semaw, a graduate student at Rutgers University.

Semaw proceeded to accuse one of the world's most prominent anthropologists, Donald Johanson, and his team of researchers at the Institute of Human Origins (IHO) in Berkeley, California, of claim-jumping and fossil theft. While slides of his site in the Gona River region flashed on the screen behind him, Semaw—who has collaborated with the IHO—alleged that Johanson's team had taken hominid teeth from the area in October 1994, even though they knew Semaw had been working there for 2 years. "We have filed our complaints to Ethiopian authorities, and in the meantime we decided to expose this professionally unethical activity to the scientific community as well," Semaw announced.

Reaction was immediate—and intense. No sooner had Semaw stopped talking than Ian Tattersall of the American Museum of Natural History protested: "The final remarks were a totally inappropriate use of this scientific forum!" From the back row, Berkeley Geochronology Center geologist Paul Renne countered: "I totally disagree!" And matters only grew worse. Although Johanson flatly denied Semaw's allegations at a packed luncheon talk 3 days later, one of Ethiopia's leading paleoanthropologists, Berhane Asfaw, then used his own scientific presentation to support Semaw and warn that Ethiopians would not tolerate "neocolonialist paleoanthropologists."

It was not just the inflammatory nature of the charges that raised temperatures. Some researchers were upset that the paleoanthropology community, which has a history of bitter scientific rivalries, was now wracked by public allegations of ethical violations. Worse, some worried that this dispute could end up imperiling the rights of foreign scientists—particularly those working for IHO—to do research in Ethiopia, at the richest hominid fossil beds in the world. Semaw and Asfaw "are opening a Pandora's box," says Tattersall. "This may result in the narrowing of access to Ethiopia."

The dispute over the Gona site boils down to some apparently overlapping excavation permits granted by the Ethiopian government. Both teams had been working in the general area for some time: Johanson off and on since the early 1970s, when his team found the 3.2-million-year-old hominid female known as "Lucy" at an adjacent site called Hadar, and Semaw starting in 1987 at Gona with his adviser, Rutgers University paleoanthropologist Jack Harris.



Land grab? Ethiopian scientists charge that a team of prominent researchers took fossils from their site in the Gona area—a charge the researchers hotly deny.

SOURCE: RUTGERS ILLUSTRATION: C. FABER SMITH

The IHO asked for and—in 1991—was granted a permit that included Hadar and part of the eastern Gona region. In 1994, however, Semaw and Harris began complaining that the IHO was encroaching on their permit area. So that year both teams requested clarifications of their site boundaries. "We didn't want to get into a fight with Sileshi Semaw," says IHO paleoanthropologist William Kimbel, co-director of the Hadar project and the institute's designated spokesperson on this controversy. "The notion that we'd go out of our way to anger an Ethiopian colleague is just ludicrous." Kimbel says that Ethiopian officials drove around their area on 8 October and reconfirmed that the IHO permit area included the eastern corner of the Gona region. Moreover, he says, the particular site in dispute bore no signs of previous excavation.

Semaw, however, says he had received verbal assurance from the government confirming his permit to work in the Gona area. The issue of who has the right to dig where will ultimately be decided by the Ethiopian Ministry of Culture, although when reached by telephone last week, Minister Leule Selassie Temamo said an investigation was "not familiar to me." The ministry's permit officials could not be reached for comment. The teeth, meanwhile, are in the National Museum of Ethiopia.

But the real issue, say Harris and Asfaw, isn't legality but ethics. They claim the IHO team knew Semaw was working in the area, yet applied for permits that covered the same ground—a case of senior researchers muscling in on a graduate student. Kimbel responds that "we asked and were given that area in 1991—8 months prior to the time that Semaw and Harris excavated in east Gona. They're clearly trying to rewrite history."

Behind these charges and countercharges lies the sensitive issue of credit and professional recognition. Johanson's discovery of Lucy made him one of the world's best-known scientists, but Ethiopian researchers claim they have been laboring in relative obscurity. One reason for this, Asfaw says, is that the IHO team has not done as much as other foreign researchers have to make sure that Ethiopian scientists get co-authorship of scientific papers and chances to direct their own excavations. But "this kind of practice is coming to an end because of the growth of qualified Ethiopian professionals in the field. Collaborative research on equal status is the order of the day." The message, he says, is particularly important to get across to the up-and-coming generation of researchers.

And some younger scientists at the meeting were sympathetic. One young assistant professor who works in Africa (and who asked not to be identified) says: "I understand Berhane's frustration, and he speaks for many African prehistorians. It's wrong for people to go there, grab these fossils, and use them to make their fame and fortune and not to return more to their Ethiopian colleagues."

But IHO researchers and several other scientists say there is little merit in these charges. Kimbel says the IHO has provided money and resources for Ethiopian scientists, giving more than $224,000 in donations of computers and other equipment to the Ministry of Culture and in scholarships to Ethio-

* Paleoanthropology Society, 4th Annual Meeting, 28–29 March, and the American Association of Physical Anthropologists 64th Annual Meeting, 28 March to 1 April, in Oakland, CA.

pians—much of it going to Semaw. As for credit, Kimbel says, the IHO is currently supporting fieldwork at Hadar by an Ethiopian graduate student—Tesfaye Yemane of Iowa State University—who was co-author of two papers given at the fall meeting of the Geological Society of America.

A number of anthropologists felt that these simmering resentments toward Johanson had personal, not professional, roots and were out of place at the meeting. Says John Fleagle of the State University of New York, Stony Brook: "You don't submit a paper on a new site or a new jaw and use it to settle a personal dispute."

Asfaw, who insists there is no danger that scientific work in Ethiopia will be restricted by this outbreak of hostilities, makes no apologies for raising these issues at a public meeting of anthropologists. A meeting of a professional society, he says, is an appropriate place to discuss proper professional conduct. "Unless we stand up and enlighten our scientific colleagues, this will never change," says Asfaw. "Where else can we do this?" One anthropologist, who said he was disgusted by the childishness of the whole affair, had a suggestion: "They should all be locked in a room and left there until they resolve it like adults."

–Ann Gibbons

GREENHOUSE GASES

Rio Signatories to Negotiate New Goals

BERLIN—When representatives of more than 150 nations hammered out the world's first climate treaty in Rio de Janeiro in 1992, they went home believing they had laid the groundwork for stabilizing atmospheric concentrations of greenhouse gases in the next century. Last week, however, when delegates from most of those countries—including the 116 that have ratified the Rio agreement—met here to review their handiwork, they agreed that the commitments made at Rio are "not adequate" to achieve that goal. But when it came to deciding what steps to take to further limit emissions, the Berlin delegates couldn't agree on specifics, but pledged to keep talking.

After 11 days of intense discussions, including presentations from climate-change researchers, the delegates approved what U.N. officials call the "Berlin Mandate": an agreement to negotiate a new set of targets for reducing greenhouse-gas emissions. In Rio, developed nations had pledged to reduce industrial emissions of greenhouse gases to 1990 levels by 2000. Last week, they agreed to try to set specific longer range targets "within specified time frames, such as 2005, 2010, and 2020." These new targets will be negotiated over the next 2 years.

Steered middle course. U.S. delegation leader Tim Wirth.

The delegates also moved to set up a pilot program of "joint implementation"—a concept that eventually might allow nations with advanced technology to offset some of their own emissions-reduction quotas by helping less developed nations lower their own emissions. And they decided to establish the U.N. climate-change conference's permanent secretariat in Bonn, Germany, starting next year.

Environmental groups and some delegations—especially those from small-island nations concerned about rising sea levels—pushed for stronger action at the Berlin meeting: a commitment by industrial countries to cut emissions 20% below 1990 levels within 10 years. But political consensus on setting strict limits proved unattainable. Most oil-producing countries tried to block stricter limits, and cautious U.S. delegates—concerned about reaction from Congress—mainly pushed for "joint implementation" and further negotiation. Undersecretary of State Tim Wirth, who led the U.S. delegation, said, "Frankly, we were worried that the process might fall apart." In the end, he said, the Berlin meeting "came out better than we thought it would."

The 2-year timetable for negotiating new targets will give delegates an opportunity to review the massive scientific analysis being conducted by a multinational team of scientists, called the Intergovernmental Panel on Climate Change (IPCC). In 1990, the IPCC's first major report had confirmed the scientific basis for climate change; last year, its special report noted that atmospheric concentrations of greenhouse gases would continue to rise even if the Rio goals were achieved—a conclusion generally accepted by the Berlin delegates.

At a meeting in Rome in December, the IPCC will issue its second major assessment report evaluating scientific evidence linking greenhouse gases to climate change and analyzing how global warming might affect the environment, health, and agriculture. The report—which is being reviewed by scores of scientists—will also examine options for mitigating these problems. Some of the report's authors attended the Berlin meeting to offer advice on science questions.

Daniel L. Albritton, director of the National Oceanic and Atmospheric Administration's Aeronomy Lab in Boulder, Colorado, and a lead writer on the upcoming IPCC report's chapter on the potential for global warming, outlined the current scientific consensus: "Mainline scientists generally agree that, if the greenhouse gases continue to increase in the atmosphere, then there very likely will be a surface warming in the range of 1.5 degrees to 4.5 degrees centigrade by the end of the next century." Albritton, an adviser to the U.S. delegation, quickly added: "What should be done about that—where it should be mitigated or tolerated—is a political decision, not a scientific one."

G.O.P. Obasi, secretary-general of the U.N.'s World Meteorological Organization—the IPCC's umbrella organization in Geneva—provided a more controversial viewpoint. Although "there are still some uncertainties about climate change attributable to human activities," Obasi told delegates, "there are many signals of possible climate change reflected in an increasing number of extreme-weather–related natural disasters that are occurring more frequently, some with increased intensities." As examples, Obasi mentioned the increased frequency of cyclones in the southwest Indian Ocean and the Pacific in recent years, the severe floods in Europe this winter and in the U.S. Midwest in 1993, and the observation that the ozone hole over Antarctica last October "was the severest ever recorded" in 35 years. But Albritton cautioned that "the jury is still out" on linking specific extreme-weather events to greenhouse gases. Most climate models are unable to predict with confidence the impact of global warming on regional weather events, Albritton said, although scientists are now developing more sophisticated models.

The IPCC's analysis on these issues will be available to delegates before they complete the intensely political task of negotiating new emissions limits. But both Wirth and Angela Merkel, Germany's environment minister and president of the Berlin conference, said they are already convinced that the scientific evidence so far shows the need for further action on greenhouse-gas emissions. "I don't think the question is any longer *if* we are experiencing, or are going to experience, climate change. The questions are: How much? How fast? And where?" Wirth told *Science* in an interview.

–Robert Koenig

Robert Koenig is a journalist in Berlin.