

# Scientists Attacked for 'Patenting' Pacific Tribe

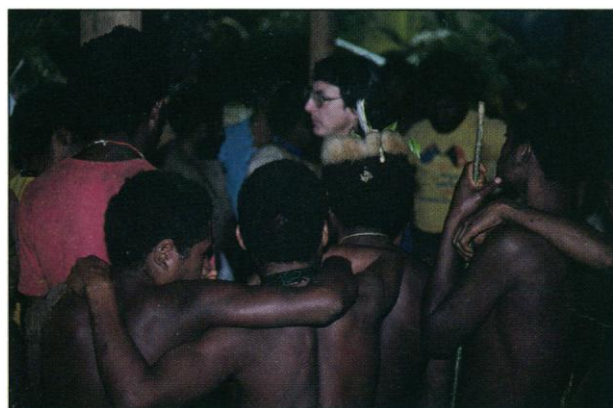
For the past 10 years, medical anthropologist Carol Jenkins has been working with the Hagahai tribe in the highlands of Papua New Guinea, trying to identify and treat diseases that are inexorably reducing the small group to the vanishing point. Yet one morning last month, Jenkins woke up to find that she and her employer, the Papua New Guinea Institute of Medical Research (IMR), and collaborators at the National Institutes of Health (NIH) had been accused of stealing Hagahai genes. "Indigenous Person From Papua New Guinea Claimed In U.S. Government Patent," blared an electronic press release, distributed around the world on the Internet. The press release also made disquieting allusions to scientific "vampires." Within the week, the chorus was taken up by local and international press—"Is Nothing Sacred?" asked one headline, protesting the patent as a theft of human genetic material. Jenkins and her colleagues have been weathering a small storm ever since.

There is indeed a patent, but not for a human. Researchers had patented a virus-infected cell line from Hagahai blood and had actually agreed to give the Hagahai half the patent royalties. The accusations and press release came from a small Canadian-based group known as the Rural Advancement Foundation International (RAFI), which says it is dedicated to the socially responsible development of "technologies useful to rural societies." By distributing the release via the Internet—a medium prized by scientists for its ability to disseminate information, but one proving equally adept at spreading misinformation—RAFI ensured a wide and rapid airing. Consequences to date have been of the nuisance variety, but what is disturbing about the episode is that such charges found a receptive audience, says Temple University anthropologist Jonathan Friedlander, former director of Pacific anthropology at the National Science Foundation. It "reflects on the widespread distrust of the scientific-technological enterprise and on the willingness of many to believe the worst of people with scientific knowledge," he says.

The IMR appears an unlikely target for such distrust. Institute staffers, Friedlander says, have been responsible for "the identification and [prevention] of a formerly widespread and lethal disease, known as 'pigbel,' very important malaria research, ongoing and important public health education efforts in nutrition, [pneumonia], AIDS, and ecological degradation." The institute direc-

tor, Michael Alpers, has won international awards in tropical medicine, and Jenkins, a MacArthur Foundation grantee, is considered an international authority on AIDS behavioral research and interventions.

In the early 1990s, the IMR researchers, working with NIH virologist Carleton Gajusek's group, discovered that the Hagahai were infected with a variant of the human T cell leukemia virus, or HTLV-I. The virus



**Middle of a storm.** Anthropologist Carol Jenkins (center, surrounded by Hagahai people) patented not an individual person, but a virus-infected cell line.

usually produces a severe form of leukemia, but the Hagahai variant—previously unknown—is benign and thus interested researchers. Following then-NIH guidelines, the researchers applied for a patent on an HTLV-infected cell line. The aim of the NIH policy, says Amar Bhat, program officer for Southern Asia and the Pacific at NIH's Fogarty International Center, was to clarify the commercial rights for private companies that might want to use the cell line to develop diagnostic tests for HTLV, for example.

Jenkins notes that she discussed the idea of the patent with the Hagahai, who she says have a clear understanding of the concept of ownership, and only proceeded after securing their approval. They came to an agreement that the tribe would be the beneficiary of any royalties due the researchers. "I think most people would agree," says Alpers, "that the rights of people in the Third World should be respected when biological discoveries of potential commercial benefit are made from biological samples of any kind. ... In the Hagahai case, these rights have been respected." The patent was approved on 14 March of this year.

RAFI saw things in a different light. The

six-person group learned of the patent approval months later through a patent reporting service and decided to act. Pat Mooney, RAFI's head, says, "Once you allow patenting of any life form, you pretty much end up patenting all life forms. This was an especially outrageous example," because it involved a small non-Western culture. As the press release put it, "the United States Government has issued itself a patent on a foreign citizen. On March 14, 1995, an indigenous man of the Hagahai people ... ceased to own his genetic material."

That's just wrong, says Henry Greely, a law professor at Stanford University and chair of an ethics subcommittee for the Human Genome Diversity Project, a proposed effort to collect and analyze genes from the breadth of the human species (*Science*, 4 November 1994, p. 720). (The biodiversity project was also pilloried in the RAFI release as another example of "bio-colonialism.") For a start, says Greely, "the patent doesn't patent a person. It doesn't even patent human genetic material. It's the cell line, a viral preparation derived from the cell line, and three different bioassays to see whether people are infected by this virus. And the idea that the U.S. government owns this person or his genetic material is absolute rubbish."

While RAFI is right that the DNA of the Hagahai is part of the invention because it is present in the cell line, says Greely, "the donors involved can continue, obviously, to use their own DNA to run their bodies. They could also, if they chose, patent anything they wanted to patent that was an 'invention' from their DNA ...," except an HTLV cell line.

Such distinctions were absent from the Internet release and subsequent statements by RAFI. Indeed, RAFI representatives, quoted in local newspaper stories, even said they want the Papua New Guinea government to bring this "theft" before the World Court in The Hague.

Since RAFI first circulated its charges, those attacked have been trying to convince everyone from newspaper reporters to their colleagues that the patenting of the cell line was not an egregious act. Jenkins says she finds the spate of distorted publicity truly distressing. "There is a certain hysterical quality to all of this which smacks of a Frankenstein-like fear of molecular biology," she says. "It shows how poorly scientists have educated the public"—and how easily the Internet can be used to spread that fear.

—Gary Taubes