ANTHROPOLOGY

Anthropologists 1, Army Corps 0

American anthropologists won a round in an important legal battle last week, when a U.S. District Court in Portland, Oregon, ordered the Army Corps of Engineers to reopen the case of a 9300-year-old human skeleton found on federal land in Washington state. The corps, which has jurisdiction over the skeleton—one of the oldest in the Americas—had planned to turn it over to American Indian tribes for reburial last October under the 1990 Native American Graves Protection and Repatriation Act (NAGPRA). But scientists sued to prevent the handover until they had studied the bones.

Now, although the court stopped short of allowing study of the skeleton, it opened the door for future research by recognizing that the scientists have a legitimate claim that must be considered. "It's a landmark ruling," exulted Alan Schneider, the Portland attorney for the scientists. "This is the first case where a court has held that a third party like a scientist has standing to challenge a government agency's overenforcement of NAGPRA."

The male skeleton, known as "Kennewick Man" for the town where it was discovered in the bank of the Columbia River last summer, is a rare representative of the earliest people to inhabit the Americas. It also had a projectile point embedded in its pelvis and facial features that may be Caucasoid-like, offering clues about early Americans (*Science*, 11 October 1996, p. 172).

As soon as the skeleton was discovered, Smithsonian Institution skeletal biologist Douglas Owsley sought permission to study it, and a team at the University of California, Davis, extracted ancient DNA from a bit of its finger bone for analysis. Owsley and others say that without scientific study it's impossible to know whether the skeleton has a biological or cultural tie to any living people—knowledge needed to determine which tribe, if any, should receive it.

But Owsley says he was told by the corps "flat-out that there would be no scientific study." The corps ordered a halt to the DNA work as soon as it learned of it in October, and announced that it would hand over the skeleton to the Confederated Tribes of the Umatilla Indian Reservation under the auspices of NAGPRA, which requires remains or cultural objects to be given to a culturally affiliated tribe. It later rescinded that order but has kept the skeleton locked away and unavailable for study. Court documents suggest that corps officials were concerned about alienating the Indians. In an 18 September 1996 e-mail message, a corps official wrote: "All risk to us seems to be associated with not repatriating the remains."

In the new decision, U.S. District Court Magistrate John Jelderks invalidated all the corps' orders in the case and criticized the "flawed" procedures used by the agency, which he said "acted before it had all the evidence or fully appreciated the scope of the problem." Jelderks also asked the corps to report back to him with its decision on the case and to answer several questions, including whether repatriation under NAGPRA required a biological or cultural link between bones and living tribes, and how such a link would be determined.

Corps attorney Daria Zane declined to comment for the record. As for the scientists, although they still can't study the skeleton, they're pleased. "Hopefully, the Army Corps will come to its senses," says Owsley. "They are using government lawyers and taxpayers' dollars to argue against academic freedom."

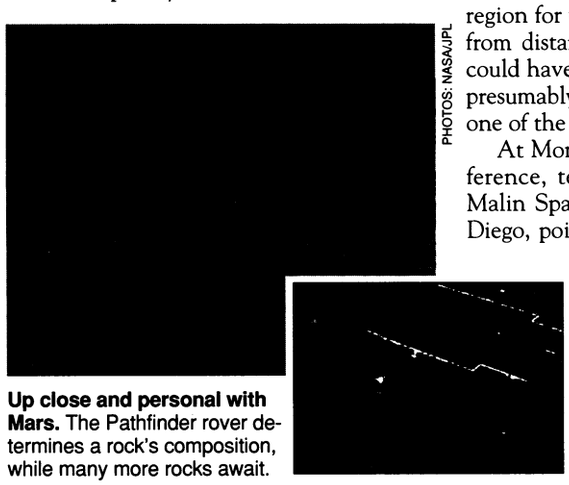
–Ann Gibbons

PLANETARY SCIENCE

Pathfinder Strikes a Rocky Bonanza

As exhausted but exuberant scientists got their first closeup look at the surface of Mars in 21 years earlier this week, the Mars Pathfinder mission could already boast a long list of successes. Team members had picked a safe spot to drop their lander, demonstrated a new means of putting instruments on Mars, and exercised the first "mobile geologist" on another planet. With the $196 million price tag of the mission, they had also justified NASA's new commitment to "faster, better, cheaper" missions to the planets and made the Jet Propulsion Laboratory (JPL), long known for multibillion-dollar "bigger is better" missions, a player in the new era of planetary exploration on the cheap. Even if the mission never extracted much science from its rock-strewn landing site, it would have proved out the technology and philosophy likely to dominate future planetary missions.

But team scientists were already doing impressionistic science on images from the site, finding evidence that it was swept by one of the largest floods—or mud slides—in solar system history. Images from the Viking craft that orbited Mars in 1976 had made it obvious that something had flowed across Ares Vallis, the vast plain that contains the site. That added to the appeal of the site by suggesting it would hold a wide variety of rock types, and the Pathfinder team has not been disappointed. "It really looks like we have a grab bag suite of rocks," says project scientist Matthew Golombek of JPL. "This site is completely different from either site" visited by Viking landers in 1976. At press time, Pathfinder's rover had begun nuzzling nearby rocks with the alpha proton x-ray spectrometer in its snout, collecting data on composition.



PHOTOS: NASA/JPL

Up close and personal with Mars. The Pathfinder rover determines a rock's composition, while many more rocks await.

Meanwhile, planetary scientists—some of them practicing armchair geology on images broadcast via CNN—were debating the nature of the event that had deposited the rocks. Golombek and his colleagues believe that the first images confirm their suspicion that billions of years ago a great flood of a billion cubic meters per second swept the region for weeks, carrying a variety of rocks from distant highlands. Determining what could have unleashed the water, which was presumably stored beneath a dry surface, is one of the enduring mysteries of Mars.

At Monday's daily Pathfinder press conference, team member Michael Malin of Malin Space Science Systems Inc., in San Diego, pointed out 4-meter-high ripples in the nearby terrain, spaced 20 meters apart—the type of marks left by the late stages of a catastrophic flood. The direction of flow suggested by the ripples matched the alignment of several large boulders stacked against each other, as if by a flood. The flow direction Malin infers from Pathfinder images is also the same one suggested by Viking orbiter images. The coincidence of all three directions is "one piece of evidence that water flowed through here," says Malin. Once he gets some sleep after 24 hours of watching images come down from Pathfinder and planning