the colonies. "Now we have a piece of paper verifying the source. We didn't have the paperwork before and were not in a position to come down on the contractor."

Mayo is circumspect about where genetic contamination arose. "There's no way to trace it out," he says. An NIH document, dated 1 October 1982, summarizing these incidents is considerably less ambivalent: Mice from NIH's foundation stocks "have been shown to be homogeneous and typical for the BALB/c strain. . . . There has never been any evidence of genetic contamination involving the pedigreed colonies of [these] mice," it says, thus attributing the responsibility to the contractor, Charles River, without spelling that conclusion out.

Mayo, other NIH officials, and lab animal users elsewhere praise Charles River for its quality breeding programs, especially for its reputation for supplying healthy animals. Partly because of this reputation, Charles River not only is considered the giant of the lab animal–breeding industry in general, but also holds a lion's share of government contract work in this arena. About 18 percent of the company's business is done under federal contract, including annual contracts with NCI for $2.5 million and with the National Institute on Aging for $2 million. (There has been no problem of genetic contamination in the colonies maintained by Charles River for NIA, according to an institute official.)

Charles River has recently taken steps to preserve its reputation for quality by instituting a major new genetic monitoring program with the help of consultants, including geneticists from Texas A&M University and the University of Pittsburgh. One outgrowth of this program was a "Genetic Monitoring Bulletin" issued a year ago reporting another instance of genetic variation in BALB/c mice "sometime between May 1, 1982 and August 16, 1982. . . . The incidence of this finding is very low (approximately 5%), however, we have discontinued the colony much as we would for a microbiological contamination," says the report dated 20 August 1982. Charles River's efforts to make sophisticated genetic monitoring a routine service have been applauded widely by those who do business with the company and also by its competitors.

Nonetheless, company practices in the period before such programs were instituted are what Kahan and others are challenging. And her argument that "career and publication opportunities were lost" could strike a chord in the research community, particularly among those scientists who had to do considerable sleuthing before they realized that genetic contamination could explain difficulties they had with experiments.

It is scientists in the basic research community, and not other users of inbred animal strains, such as toxicologists or researchers in drug development programs, who have felt the main impact of genetic contamination problems. For example, a spokesman for the Food and Drug Administration (FDA) says: "Toxicology is not sophisticated enough so that a difference in strains will affect the safety of our determinations. Such differences wouldn't affect anything because experiments are internally controlled." Thus, even if a protocol called for an inbred strain, the presence of genetically impure animals would likely be distributed randomly among control and test animals.

By contrast, in experiments like those done by Kahan, difficult transplant procedures precede extended animal growth periods. Hence, all sorts of reasons why a procedure failed might be invoked and checked before genetic contamination would be considered. Other scientists who have had difficulties with genetic contamination of animals, including several representatives of pharmaceutical companies, paint more or less the same picture.

"Where Charles River is *today* is what's relevant," says vice president Foster. The company has implemented increasingly sophisticated genetic monitoring programs but, all along, has used "proper methods at relevant times," he says. Those capabilities are becoming "more and more refined."

Foster suggests that scientists bear a responsibility to notify the vendor when problems arise. "It's incumbent on both parties to work together, to provide as much information as they can," he says. Says Kahan, "They told me what they did to check genetic integrity but never told me their results."

Information promises to be a key issue in the case Kahan has brought against Charles River: How is information properly and amicably shared between animal supplier and user; how quickly can and should either party alert the other over potential problems; and by what means? By establishing monitoring programs, Charles River has lessened the likelihood of genetic contamination in the future. But establishing how problems arose in the past and whether the company is responsible for them now is a matter for the courts to decide.

—JEFFREY L. FOX

Redemption for Social Science Tomes

The social and behavioral sciences have enjoyed a modest stroke of good fortune in the form of a decision by the publishers of *American Men and Women of Science* not to cancel issuance of a new directory of U.S. social scientists.

Editor-in-chief Gary Ink says that, because of poor sales of the last couple of editions, it was decided to postpone the planned 1982 edition indefinitely. Biographies of physical and biological scientists, now occupying seven volumes, are issued every 3 years.

Ink says the decision was reconsidered following a market research survey and a meeting with the Consortium of Social Science Associations (COSSA) in Washington, which persuaded the publishers there was a strong, indeed "desperate," demand for a new edition. Ink says this was manifested despite the fact that reductions in federal social science spending have forced libraries to reduce purchases, and despite the proliferation of online information services.

He adds that help in contacting relevant buyers has been pledged by COSSA, a lobby group set up 2 years ago in reaction to the budget cuts. The plan now is to issue the two-volume set on the social and behavioral sciences in September for $150, and to update it every 5 years.

—CONSTANCE HOLDEN

Stone Age Sites Saved from Flooding

A recent decision by the High Court of Australia has effectively halted a massive hydroelectric power project that would have flooded significant ecological and archeological resources in southwest Tasmania. The decision, by a vote of four to three, appears to resolve a long and often bitter wrangle over the separate powers of the state and federal governments (*Science*, 3 December 1982, p. 988).

The discovery in the past several