

# US court gives original owners the right to deep-sea treasure

**Washington.** High-technology adventurers may think twice before seeking sunken treasure after the US Supreme Court let stand a ruling that insurance companies have a claim on the booty. The possibility of extended legal battles, salvagers say, may stifle the technological and scientific progress that accompanies the recovery of shipwrecks.

IMAGE  
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REASONS

**Gold coins and bars lie amid soft coral stalks covering timbers from the SS *Central America*.**

The supreme court declined to hear a case involving a ton of gold recovered so far from the SS *Central America*, resting in 8,000 feet of water off the coast of South Carolina after being sunk by a hurricane in 1857. Their action let stand a decision by the Fourth Circuit Court of Appeals in Richmond, Virginia, that property lost at sea can be abandoned only through the failure of insurers to appear in court or through a written statement relinquishing title.

Several groups have tried to locate the wreck in the past 20 years since technology made possible the recovery of its contents. They discussed purchasing the rights to the treasure with the insurance companies, but no contracts were signed.

The district court originally gave the gold to the successful salvage team, the Columbus-America Discovery Group of Columbus, Ohio, by applying a finders-keepers rule known as the law of finds. It said that the Atlantic Mutual Insurance Company and eight other insurers had abandoned their stake by destroying or losing all records of paying the claims.

The appellate court instructed the district court to apply the law of salvage instead, determining the share of salvagers and insurers according to the cost of recovery and the care taken by the salvagers to preserve the historical and archaeological value of the wreck. As an incentive to preserving wrecks, court awards to conscientious salvagers often approach the total value of the treasure, according to Porter Hoagland, an expert on marine policy for the Woods Hole (Massachusetts) Oceanographic Institute.

But the lawyer for Columbus-America, Richard Robol, says that the law of salvage undermines the financial incentives to develop the necessary technology for a high-risk venture that requires large amounts of capital. Columbus-America investors spent

more than \$12 million, in large part to develop a sophisticated unmanned submersible, called Nemo, for a return that may be worth as much as \$1 billion.

Columbus-America designed Nemo to remain at depths of 1.5 miles for several days. In addition, the group developed robotic equipment, using three-dimensional video monitors, that is sensitive enough to pick up single gold coins and to lift heavy beams.

Biologists have studied the nutrient-rich environment created from the wood and iron in the shipwreck in an otherwise barren area by using hundreds of hours of tape from Nemo's cameras. "Having three-dimensional viewing has almost taken away my desire to go down there myself", says Bob Evans, director of the group's science projects. The new equipment has also enabled them to recover biological samples, including a crab holding eggs tucked under its tail and sponges that are being tested for medically active chemicals.

**Jenna Roberts**

## Catalonia plans for synchrotron

**Barcelona.** The autonomous region of Catalonia has decided to build a synchrotron facility near Barcelona following rejection last December by CERN, the international particle physics laboratory in Geneva, of a request by Spain for support of a facility to produce large numbers of tau and charm particles.

Pure and applied research in microelectronics, biochemistry and material sciences, areas of particular economic importance to Catalonia, will be conducted by a large permanent staff as well as by visiting scientists from the rest of Spain, Portugal and southern France. The synchrotron should also offer an entry point into Europe for scientists from Latin America.

The Spanish government has promised to pay some of the Pts11 billion (US\$95 million) cost of building the Barcelona synchrotron, and the European Communities have been asked to provide half of the money. But Catalonia says that it will bear the entire cost if necessary.

An international advisory group headed by Catalonian physicist Manuel Cardona, a director at the Max Planck Institute for Solid State Research in Stuttgart, Germany, is developing specifications. The 2.5 GeV synchrotron, which will have a perimeter of 250 metres and 20 workstations, is to be built 20 km from Barcelona. The site is near the Autonomous University of Barcelona and the Vallès Technological Park and close to two large centres for microelectronics and material sciences. Construction is expected to begin next year and the first experiments could be under way as early as 1998.

**Xavier Duran**

## Genome project 'to be done by 1994'

**Washington.** The human genome project, which aims to identify the make-up of all human genes, could be completed in a purpose-built US laboratory by the middle of next year, according to a leading participant in the work.

Craig Venter, the former NIH official who set up the \$70 million Institute for Genomic Research in Maryland specifically to pursue the project, told a *Nature Genetics* conference in Washington last week that he hopes to have "a nearly complete description of the human genome, in the freezer and on computer, within twelve to eighteen months".

Mark Adams, head of gene sequencing at the institute, said that the latest estimate compared with a three- to five-year estimate when work started last summer, thanks partly to more resources being

devoted to the project and partly to better methods for finding new genes quickly and without redundant effort.

Venter says that his facility, which employs some 50 robotic DNA sequencers, is finding between 500 and 1,000 new gene sequences a day, including partial sequences. He estimates that the project is already 20-25 per cent complete, and that the total number of human genes may be around 75,000. "We'll know the number for sure in a few months as we get closer to completion", he says.

The institute is responding to concern about the wider social and medical consequences of the project by establishing an ethics division, and by releasing groups of its gene sequences for general research use.

**Colin Macilwain**