

# Robert Ballard: by MICHELLE LALIBERTE

## TAKING MARINE ARCHAEOLOGY TO NEW DEPTHS



large ceramic jugs called *amphorae*, was likely bound for Egypt or the Phoenician colony of Carthage. Surprisingly, the amphorae were found intact and in pristine condition, preserved by the bitter cold temperatures and lack of sunlight at such depths.

Ballard happened to be in the right place at the right time, as seems to be the case with some of his previous discoveries. Two years ago, investigators set out to locate a lost Israeli submarine in the eastern Mediterranean. With the help of a nuclear submarine from the U.S. Navy, they discovered the barest hints of a shipwreck. Soon Ballard was on the case. His team explored the site with the underwater ROV *Jason*, a global positioning satellite, and a deep-



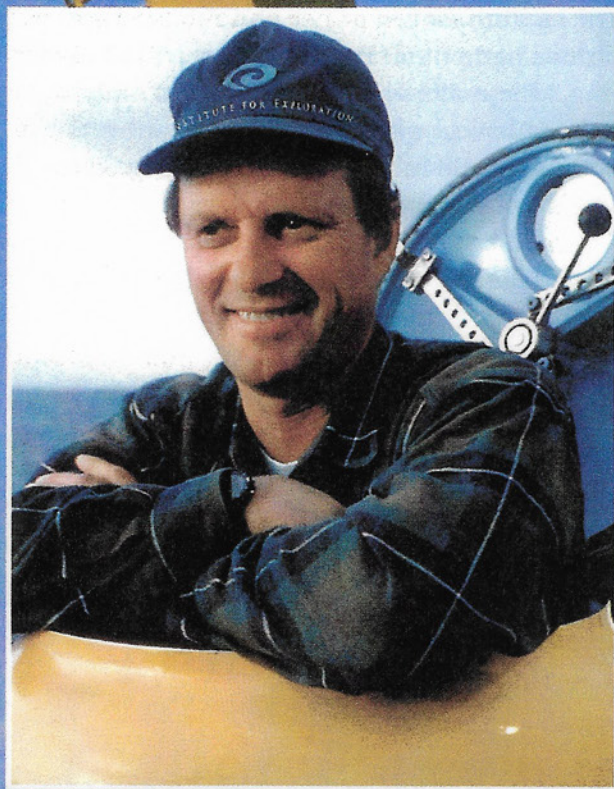
# Titanic Discoverer

Besides the infamous *Titanic*, Dr. Robert Ballard has discovered over 100 other shipwrecks, including the *Lusitania*, *Bismarck*, and American World War II aircraft carrier *Yorktown*. Although Ballard is an oceanographer by training, rather than an archaeologist, he combines both fields in his discovery and exploration of the deep sea's historical treasures.

Ballard has played a major role in making deep-sea archaeology possible, beginning with his discovery in 1985 of the *Titanic*, the luxury liner that had been resting four kilometers beneath the Atlantic since it split apart and sank on its maiden voyage 87 years earlier. To find the *Titanic*, Ballard used technology that included the manned deep-sea-research submarine *Alvin* and two remotely operated vehicles (ROVs) named *Argo* and *Jason*. These vehicles previously had been used only for oceanographic exploration and research.

"[Until now] archaeologists have been limited to [a depth of] 200 feet of water," says Ballard. Now, with the use of this new technology, they will quickly be able to change the field of maritime archaeology.

Using the same techniques he used to locate the *Titanic*, Ballard recently found the world's



**BACKGROUND:** The largest piece of the *Titanic*, a 20-ton chunk of its hull, is recovered. **INSET:** Dr. Robert Ballard aboard the *Delta* submarine, used in the exploration of the *Lusitania* off Kinsdale, Ireland.



oldest known deep-water shipwrecks, in the depths of the Mediterranean Sea, about 48 kilometers from the Israeli coastal city of Ashkelon. Phoenician mariners sailed more than 2,500 years ago into the uncertain waters of the Mediterranean, praying to their storm

god for a successful voyage — only to meet their deaths in a violent storm.

These two ships are believed to have capsized during a storm about 750 B.C., after setting sail from the Phoenician port of Tyre. Their cargo of wine, housed in hundreds of