

A New Resolution for Ocean Drilling

With a new and improved ship, a different science operator and a few changes in foreign partners, the United States' research program aimed at unearthing the history of the planet as it is recorded beneath the oceans is about to resume activity after a one-year hiatus from scientific drilling. The *JOIDES Resolution*, the drillship of the Ocean Drilling Program (ODP), an international, cooperative effort, is scheduled to cast off from Miami this week on the first leg of a 10-year journey to collect and study core samples of oceanic and continental crust all over the globe.

The *JOIDES Resolution* was chosen last spring to replace the aging *Glomar Challenger*, the research vessel of the Deep Sea Drilling Project (DSDP), managed for 15 years by Scripps Institution of Oceanography in La Jolla, Calif. (SN: 6/24/78, p. 408; 3/5/83, p. 152). The 470-foot *Resolution*, operated by Texas A&M University in College Station, is larger and stronger than the *Challenger*; it can carry twice the number of scientists, go to higher altitudes where there is ice and brave rougher waters and winds. The *Resolution* will eventually have a 30,000-foot-long drill string, exceeding that of its predecessor by 7,000 feet. Moreover, after its conversion from an oil industry ship last fall by owners Sedco Inc. of Dallas and British Petroleum of London, the *JOIDES Resolution* now has a six-story scientific laboratory outfitted with state-of-the-art computers and instruments including a scanning electron microscope.

Finally, unlike *Challenger*, the new ship has the capability to deploy a marine riser so that drilling muds and blowout preventors can be used. While the program planners don't expect to use the riser for several years, this capability means that in the future they won't have to avoid sites with a potential for the hydrocarbons that cause blowouts.

The agenda for the first two years is set. The first research excursion, Leg 101, will be to the Bahamas to study the sedimentation process of the world's largest modern calcium carbonate deposit. Another scientific highlight is Leg 105, in which the *Resolution* will set sail next August from Norway to Baffin Bay, west of Greenland. This will be the first scientific drilling at such high latitudes, and is possible only because the ship can operate in ice conditions, says Garrett W. Brass, director of the ODP office at the National Science Foundation (NSF) in Washington, D.C. This leg will enable scientists to drill into a dead rift, since Baffin Bay was the original site at which the North Atlantic began to open before the continents decided that they preferred instead to rift apart along a line that is on the other side of Greenland. Cores

After a few months being converted in dry dock, the JOIDES Resolution, née SEDCO/BP 471, is ready to depart for the Bahamas on the first leg of the Ocean Drilling Program.



from both Leg 105 and Leg 114 to the Weddell Sea near Antarctica will also provide records of the fluctuating production of deep cold water at high altitudes as well as variations of the polar climates. (After Leg 114, at the end of the first two years, the ship will venture into the Indian and Pacific oceans.)

During Legs 106 and 109, the *JOIDES Resolution* will drill holes and leave long-term observation instruments at the Mid-Atlantic Ridge. A newly developed bare-rock guide base should permit drilling into the very crumbly new crust right on the ridge — an attempt that has failed in the past, according to Brass. Scientists are interested in seeing if there is any evidence of hydrothermal activity along the ridge, particularly in light of the recent discovery of four seafloor vents in the Atlantic (SN: 10/20/84, p. 246). And studies at both the slow-spreading Mid-Atlantic Ridge and the faster spreading, hydrothermally active East Pacific Rise next year will help develop and refine theories describing how ocean crust is born.

Essential to all this scientific exploration, of course, is funding. ODP got a financial go-ahead recently after receiving membership commitments of \$2.5 million a year from a requisite of four non-U.S. nations. West Germany signed a bilateral agreement with the United States last March, followed by France in October. On Dec. 28 Canada announced its intention to

become a member of ODP, and Japan told a planning committee on Jan. 8 that it intends to join the program on Oct. 1. (Japan would have joined sooner, but its funds were already committed by the time program officials knew when a new drillship would set sail, according to Brass.)

Great Britain and a consortium of countries through the European Science Foundation are trying to raise funds to be partners as well. If that comes to pass, says Brass, "we'll be much better off and could do things in somewhat better style—more site survey work or better down-hole measurements — that just adds cream to the coffee, but the coffepot is essentially satisfied." NSF, the U.S. sponsor of ODP, is kicking in about \$29 million a year. The international participants of the previous DSDP included France, Japan, West Germany, Great Britain and the Soviet Union.

Excitement about the maiden cruise of *JOIDES Resolution* — which was named after the flagship of the English explorer Captain James Cook and the Joint Oceanographic Institution for Deep Earth Sampling (JOIDES), which advises the program — is running high. As for the *Glomar Challenger*, it was retired in November 1983 after logging more than 375,000 miles on 96 voyages (SN: 10/8/83, p. 231). Sadly, says Brass, recent attempts to save the ship as a historical landmark were too late: The *Challenger* had already been scrapped.

—S. Weisburd

Organism causing horse fever found

It may sound like a politicians' disease, but Potomac fever is strictly equine. Six years after the disease was first reported, researchers from the University of Illinois in Urbana and Virginia-Maryland Regional College of Veterinary Medicine in Blacksburg, Va., have placed the blame on a newly identified member of the rickettsia family, parasitic microorganisms that share properties with both viruses and bacteria.

The disease, believed to be transmitted by insects, causes fever, weight loss and destruction of immune system cells. It has killed hundreds of horses in the middle At-

lantic states, and recently has been found in Wisconsin and Idaho.

Both groups of researchers identified the organism in infected horses' blood last fall following the discovery that the blood reacted with another rickettsia; in the Feb. 1 *SCIENCE* the Illinois group describes isolating the agent from an infected pony, growing the organism in a cell culture and passing it on to another pony.

Since the disease is now known to exist beyond the Potomac River region, they suggest the more descriptive but less euphonic name "equine monocytic ehrlichiosis." □