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Celebrating Five Years of Ocean Exploration

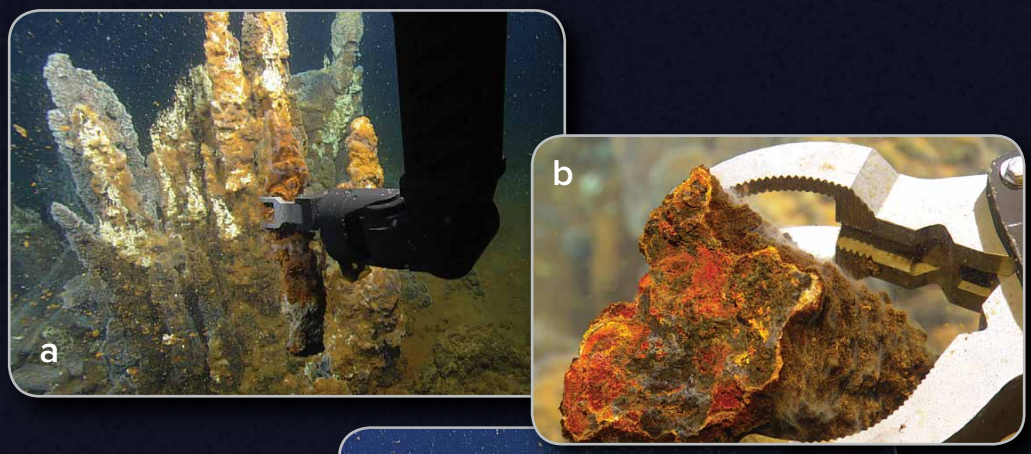
Supplements to *Oceanography*

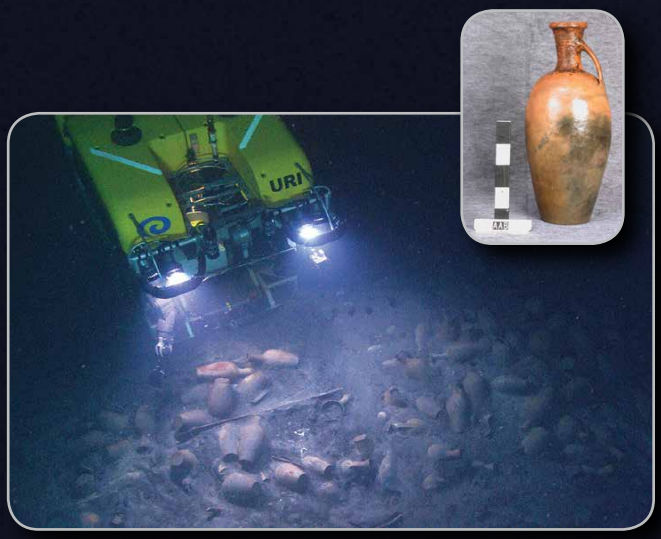
New Frontiers in Ocean Exploration: The E/V Nautilus *2014 Gulf of Mexico and Caribbean Field Season* is the fifth consecutive March supplement to accompany *Oceanography* (see http://www.tos.org/ocean_exploration). These booklets provide details about the innovative technologies Exploration Vessel *Nautilus* deploys to investigate the seafloor and explain how telepresence can both convey the excitement of ocean exploration to global audiences in real time and allow scientists on shore to participate in expeditions. The supplements also describe the variety of educational programs the Ocean Exploration Trust supports in partnership with schools, museums, and aquariums; internships that bring high school students, undergraduates, graduate students, and teachers on board *Nautilus*; and the preliminary results from the past year's field season. Through these supplements, we have explored the geology, chemistry, biology, and archaeology of the Mediterranean, Aegean, Black, and Caribbean Seas. In celebration of these accomplishments, I share just a few of my favorite images captured by *Nautilus* surveys over these past five years. Next March, we look forward to bringing you the story of the first *Nautilus* adventure in the Pacific Ocean.

Ellen S. Kappel

Ellen S. Kappel, Editor

The northern part of the Kolumbo volcano's crater floor, northeast of Santorini in the Aegean Sea, has an extensive hydrothermal vent field where massive sulfide chimneys are venting high-temperature fluids (>200°C) and gases. (a) ROV sampling massive sulfide chimney. (b) Broken vent chimney revealing zonation of hydrothermal minerals. (c) Sampling gases being emitted at a hydrothermal vent using a gas-tight container.





Above. Chersonesos A is a Byzantine shipwreck dated to the ninth to eleventh centuries CE that lies at 135 m depth in the suboxic zone of the Black Sea. This site was the focus of initial excavation, high-resolution mapping, environmental monitoring, and testing for an underwater museum. The inset shows a jar recovered from the site for analysis and conservation.

Below. Wreck of M/S *Dodekanisos*, discovered off the Datça Peninsula, Turkey, with ROV *Hercules* hovering over the bow. Left. Multibeam microbathymetry map of the ship from a high-resolution survey conducted at 15 m altitude with *Hercules*. Sediment mounds resulting from impact with the bottom are visible on the wreck's port side.

Left. The southeast flank of Eratosthenes Seamount, eastern Mediterranean Sea, hosted numerous chemosynthetic vent communities consisting of tubeworms, clams, urchins, and crabs located around cracks with chemical staining.