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Maritime History of ANZAC Cove

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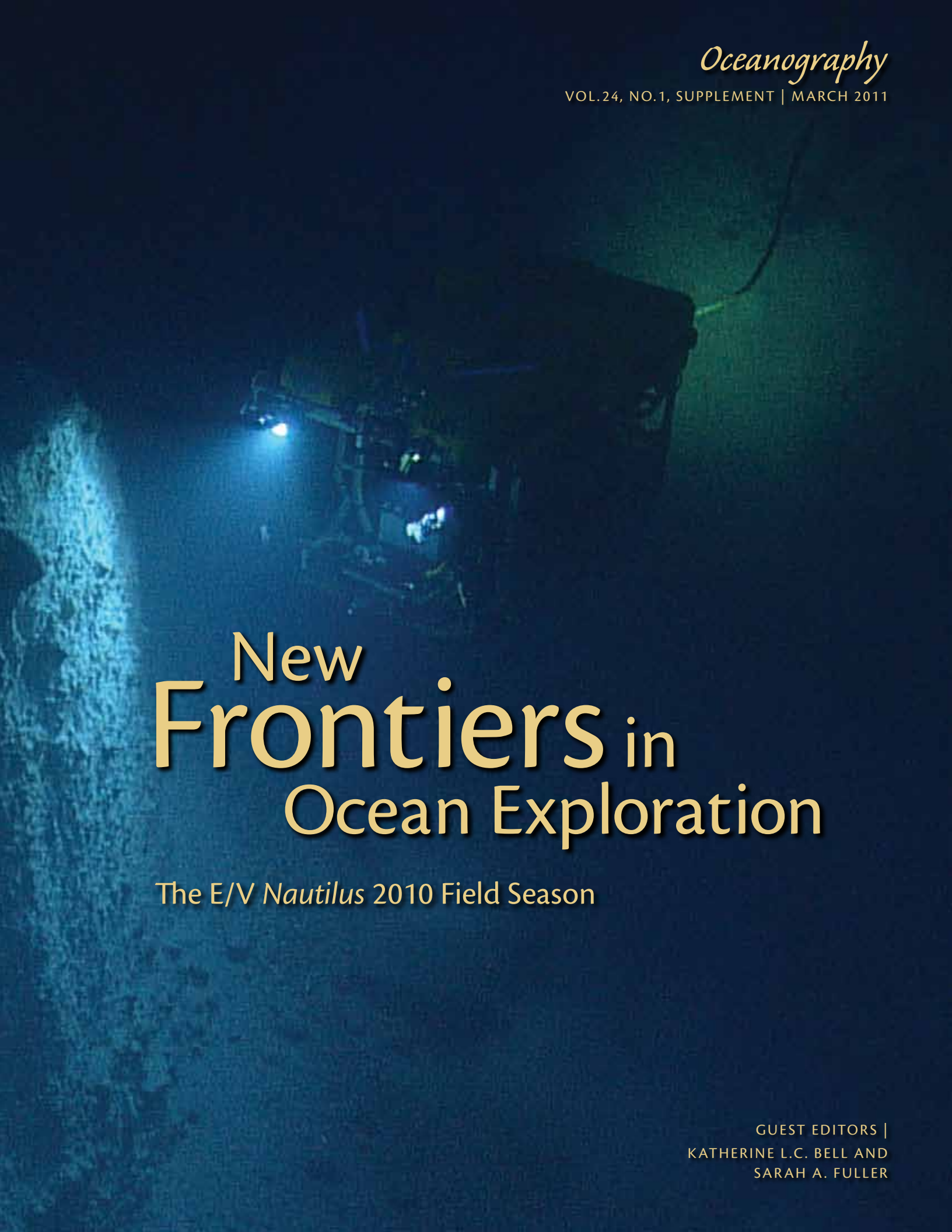
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A deep-sea underwater photograph showing a submersible or ROV on the left, illuminated by a bright blue light. To the right is a large, dark, textured rock formation. The water is dark blue and slightly hazy.

New Frontiers in Ocean Exploration

The E/V *Nautilus* 2010 Field Season

GUEST EDITORS |
KATHERINE L.C. BELL AND
SARAH A. FULLER



Maritime History of ANZAC Cove

By Michael L. Brennan, Dwight Coleman, Christopher N. Roman, Tufan Turanli, Dan Davis, Alexis Catsambis, James Moore, Maureen Merrigan, Brennan Bajdek, Daniel Whitesell, and Robert Ballard

The entrance to Dardanelles Strait in the North Aegean Sea was the site of one of the greatest maritime battles of World War I. Mines sank a large number of warships during the Allied fleet's attempt to storm through to Istanbul in March 1915, and U-boats sank others a few months later during the ANZAC (Australian and New Zealand Army Corps) landing on the Gallipoli peninsula (Rudenno,

2008). In 2009, the first expedition of *Nautilus* filmed and documented some of these wrecks for a National Geographic documentary. *Hercules* and *Argus* dived on HMS *Irresistible* inside Canakkale Strait, the submarine AE2 in the Sea of Marmara (Figure 1a), SMS *Breslau* outside the Dardanelles (Figure 1b), and HMS *Triumph* off Anzac Cove, where a landing craft from the battle was also filmed (Figure 1c). Battleships *Irresistible* and *Triumph* lie capsized on the seabed, while *Breslau* is upright with portions of its superstructure and guns still visible (Figure 1b). We also located and filmed a landing craft near Anzac Beach.

During the side-scan sonar imaging survey of the World War I battle area, we found a circular feature on the seabed in close proximity to the *Triumph* wreck (Figure 2; page 17, Figure 4). *Hercules* explored this feature, which is made up of a ring of various-sized rocks with a small pile in the middle, visible in the lower right corner of Figure 2. The rocks are well rounded and partially encrusted by a muddy matrix, indicative of an erosional shoreface environment. While the exact nature and origin of this feature is unclear, the North Aegean Sea is an area where ancient settlements could be preserved, having been inundated by post-glacial sea level rise (Kraft et al., 1983).

In July 2010, *Nautilus* returned to Anzac Cove and conducted a more comprehensive acoustic survey of this area. Approximately 30 of these stone features were found with side-scan sonar. Each varied in morphology, but all were roughly circular and measure about 40 m in diameter. In addition, we found all of these features at depths from 55 to 70 m within a 1-km radius of the *Triumph* shipwreck (Figure 3). This area of the Dardanelles and the Aegean shelf to the south was exposed subaerially during

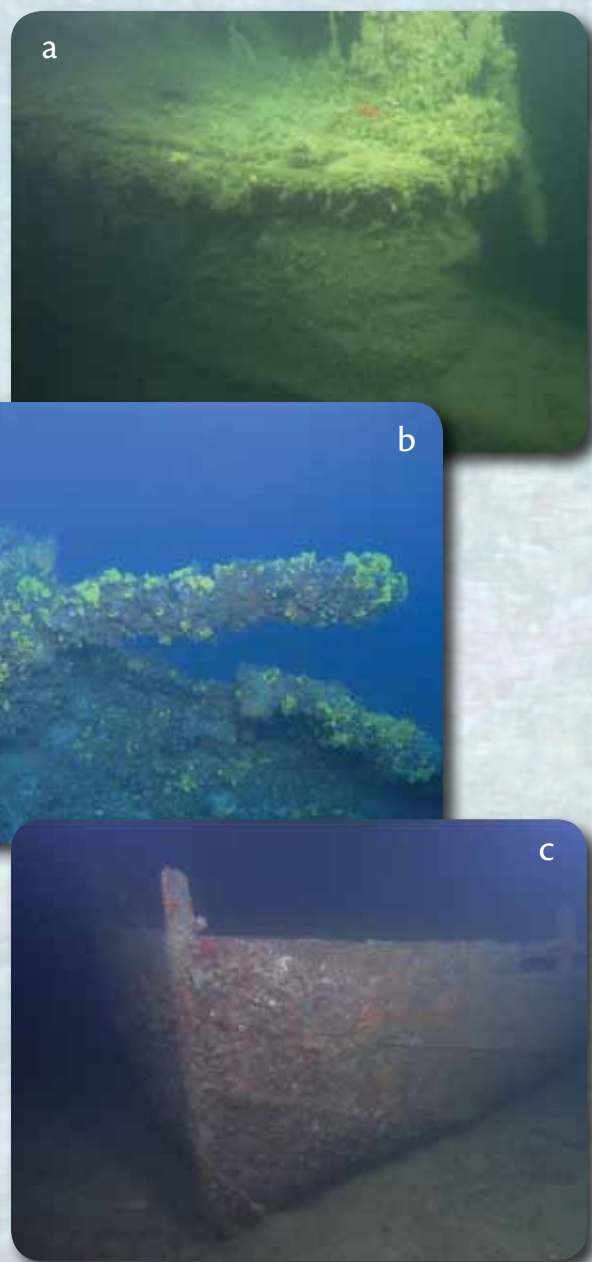


Figure 1. High-definition image captures of warship wreck sites: (a) Australian submarine, AE2, (b) light cruiser, *Breslau*, and (c) landing craft.

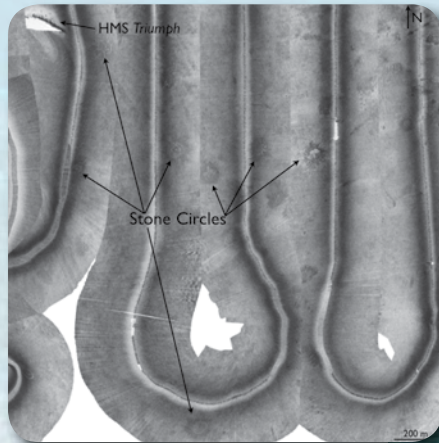


Figure 3 (above). Section of side-scan sonar mosaic showing *Triumph* shipwreck and positions of stone circle features to the southeast.

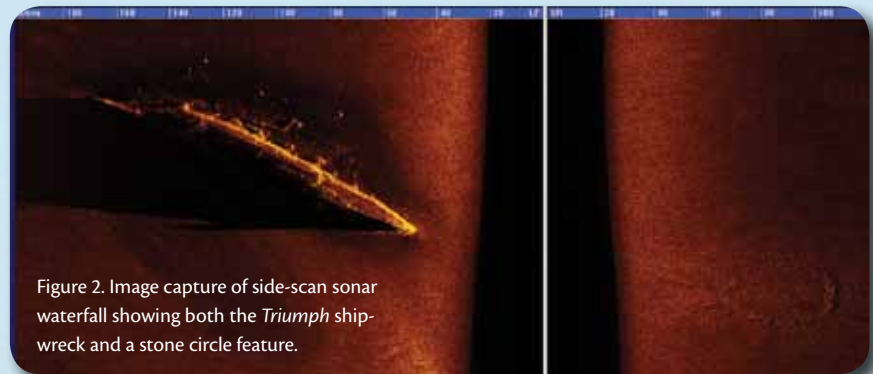


Figure 2. Image capture of side-scan sonar waterfall showing both the *Triumph* shipwreck and a stone circle feature.



Figure 4. High-definition image capture of ancient shipwreck, *Gallipoli A*. Handles and mouths of amphoras are visible beneath the encrustations.

the Quaternary. The present-day seafloor represents an erosional surface created as the water level in the Aegean Sea rose (Gokasan et al., 2010). Anzac Cove's substrate lies stratigraphically above the bedrock sill, which was eroded during the evolution of Çanakkale Strait; little sediment has built up here due to the swift currents associated with the strait. *U-21* sank *Triumph* in May 1915. The U-boat's captain, Otto Hersing, wrote in his log that his submarine was damaged by depth charges dropped by the destroyers protecting the battleship during the attack (Hersing, 1932). Such explosions on or above the seabed could have displaced the beach rocks that form the erosional surface and redeposited them, thus accounting for the multitude of features in the vicinity of the battleship wreck. Further investigations will include a closer examination with divers, as well as processing of subbottom profile data to image any geological structures of these features that may lie beneath the surface.

During the survey of the cove, we observed and recorded an ancient shipwreck, dubbed *Gallipoli A*, south of *Triumph*. The wreck site consisted of a large mound of heavily concreted amphoras of Thasian or North Aegean type roughly dating to the Hellenistic period. The stacks of amphoras appear in part to remain in their original orientation, possibly held in place by the encrustations. The wreck was in good condition compared to other similar wreck sites in the Aegean (see page 15). *Gallipoli A* lies within 2.5 km of shore in an area where bottom trawling is prohibited. This location, as well as the designated no-dive zone around the wreck of *Triumph*, have protected the ancient wreck from damage. Trawl scars were observed with side-scan sonar farther out from shore during the survey, but this wreck's fortunate location in close proximity to both the battle site and the coast illustrate the tangible benefits of such fishing restrictions on submerged cultural resources.