

Chapter 1

Underwater Archaeology in the 20th Century

Filling in the Gaps

JANET F. BARSTAD

MAKING HISTORY

Antikythera

The 20th-century beginnings of modern underwater archaeology were unheralded but auspicious. In 1900 a Greek sponge boat, heading toward its home port of Symi, was caught in a storm and sheltered in the lee of tiny Antikythera Island, midway between Greece and Crete. Taking advantage of the stop, a helmeted diver dove to look for more sponges and found instead a seafloor littered with bronze and marble statuary. As proof of what he had found, the diver hoisted a bronze arm to the surface to show his captain, Demetrios Kondos (Bass, 1966). Kondos sailed home to Symi and asked others what should be done about the find, and it was decided to inform the Greek government. Enlisting the Greek Navy, the government organized an expedition to raise the statues; Director of Antiquities George Byzantinos directed operations from the surface (Muckelroy, 1998).

The recovery was in no way a proper archaeological excavation. The divers never mapped the seabed (Marx, 1975), had no idea what was worth saving, and used only

Janet F. Barstad, *Prose & Images*, Tempe, Arizona 85282.

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ropes to raise the heaviest pieces. Because they worked at dangerous depths, one diver died and two were paralyzed by “the bends” (Bass, 1966).

Nevertheless, the Antikythera operation was successful for several reasons, not least because the expedition was the first to be supervised by an archaeologist and officially sanctioned by a government. Then there were the finds themselves. Among the bronzes was the “Youth of Antikythera,” identified as an original sculpted by Lysippos, last of the great Classical Greek masters, and the only large-scale bronze from the first quarter of the 4th century B.C. (Bass, 1966). The marble statuary turned out to be exact copies of Greek antiquities for the voracious Roman art market. A complex bronze mechanism, studied in 1958 by Derek Price, was discovered to be an astronomical “computer.” It featured days of the month, signs of the zodiac, and pointers to indicate moon phases and positions of the planets at any given time, all apparently operated by a water-clock. Its setting seemed to indicate that it was made on the island of Rhodes (Faracos, 1995). Writing of the artifact, Paul F. Johnston (1997) says: “By an enormous factor, it is the most complex technological artefact from the ancient world... Its existence...implies an astonishingly sophisticated grasp of science and technology that is otherwise undocumented.” Various studies have indicated that the wreck was Roman, sailing around 80–70 B.C. (Johnston, 1997).

Says George Bass (1966), “The story of the discovery and exploitation of the [Antikythera] site deserves a firm place in the history of underwater archaeology, for it was there for the first time in the Mediterranean that divers visited an ancient shipwreck and grappled with the problems of excavating it.”

Cape Gelidonya

Now fast-forward to 60 years later.

Grappling with undersea excavation took on new meaning to Bass in 1960, after Peter Throckmorton found a Bronze Age wreck off the coast of Turkey and Bass became part of a team to excavate it (Bass 1966, 1980). The 1942 invention of SCUBA (Self-contained Underwater Breathing Apparatus) by Jacques-Yves Cousteau and Emile Gagnan allowed Bass and others team members to dive freely on the wreck, in 90–95 ft of water. Before leaving for Turkey from Pennsylvania (where he was attached to the University of Pennsylvania Museum), Bass had to learn to dive—at his local YMCA!

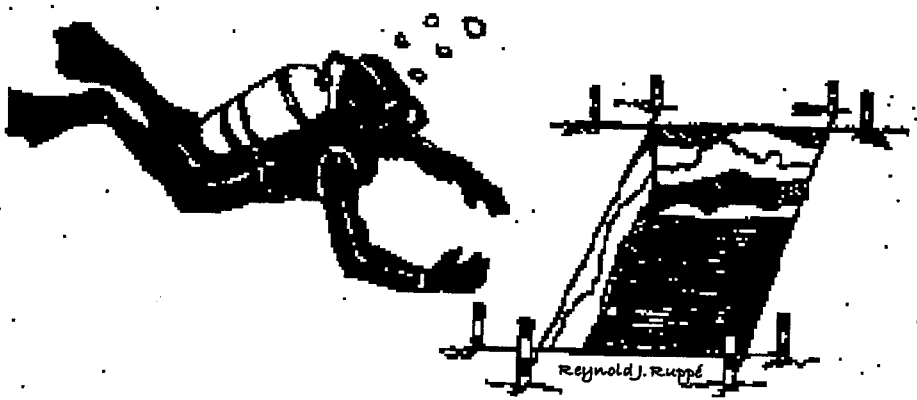


Figure 1.1. Diver and undersea grid. Digitized version of an original drawing by Reynold J. Ruppé.

Work at Cape Gelidonya marked the first time professional land archaeology methods were adapted for work under water, including *in-situ* mapping before excavation took place. It also was the first time pieces were removed from the seabed and “excavated” on land to remove concretions accumulated over the centuries. The artifacts were cleaned, replaced into their original positions (on land this time), and mapped again. At each stage, the team photographed the work.

Bass’s comment, “The results of the Cape Gelidonya excavation were both spectacular and of great historical importance” (Bass, 1966) may be something of an understatement. The archaeologists found copper ingots in mat wrappings; scrap metals in baskets; casting waste; a bronze swage block for drawing out pins and hammering sockets on tools; pottery dating to within 50 years of 1200 B.C.; and accurate stone balance-pan weights in ordered sets. By plotting all the objects in the wreck, the team was able to determine which were personal possessions of the ship’s crew.

The Gelidonya excavation established that the ship had sailed from Syria to Cyprus and that its artifacts were Syrian, Canaanite, or Phoenician, not Greek. Scholars had supposed that the Syrians hadn’t begun their famous sea trade as early as 1200 B.C., and they had dated the writings of Homer much later than the events about which he wrote. Subsequent study of the Cape Gelidonya implements showed that their prototypes were found in Syria or Palestine earlier than in Greece. Homer had written much about the Phoenicians; excavation of the Cape Gelidonya wreck showed that “Phoenician sailors roamed the Mediterranean at the time of Odysseus” (Bass, 1966).

The next year, Bass excavated a Byzantine wreck at Yassi Ada, also off the coast of Turkey, where the team devised new methods for mapping the wreck and handling artifacts. They also saved one crew member from the worst effects of the bends by flying him to a U.S. Navy decompression chamber in Istanbul.

From the Byzantine ship, researchers learned for the first time of the transition between ancient and modern shipbuilding methods. The ship’s artifacts of personal possessions, pottery, oil lamps, and coins dated the wreck to the first half of the 7th century A.D. Weighing devices and even the identity of the ship’s captain (Greek letters punched into the end of a large steelyard read “George Senior Sea Captain”) elucidated a time period in a way never before possible (Bass, 1966).

Even so, even in 1966, Bass still had to say, in *Archaeology Under Water*,

A defence of underwater archaeology as archaeology might seem unnecessary, but by some it has been considered something special, something just outside the field of true archaeology. Unfortunately, a great deal of nonsense has been written about it. One distinguished archaeologist recently said that underwater archaeology is all rather silly, a view which he does not hold alone. Such a man might take great pains to excavate the drainage systems of an ancient public building, studying the joins and diameters of pipes in detail. Is the study of ancient ship construction less serious? The importance of ships to any maritime people is obvious, yet ships are often completely ignored in archaeology handbooks which cover subjects ranging from roof tiles to clothing, from fortification walls to jewellery, and from coins to furniture (Bass, 1966).

H.L. Hunley

One hundred years after the first “underwater archaeology event,” our fast-forward machine carries us to Charleston, South Carolina. A Civil War submarine has been raised after 136 years under 30 ft of water and tons of silt.

At the time of its reappearance in Charleston Harbor in August, 2000, the Confederate submarine *H.L. Hunley* definitely was not ignored, as the Antikythera wreck had been. After the sub was lowered onto the deck of the recovery vessel, a flotilla of small craft, flying the Stars and Stripes as often as the Confederate flag, escorted it into Charleston. News media from around the world touted its discovery and rescue. Its multi-million-dollar funding came from novelist Clive ("Raise the Titanic!") Cussler, the federal government, and the state of South Carolina; the remaining \$10 million needed for the project is being raised privately (Pedersen, 2000). The situation could not have been more different from Antikythera and Gelidonya.

After all the media attention, *Hunley*'s story is well-known. On the night of February 17, 1864, the Confederate submarine, 39 ft long with a crew of eight men who propelled the vessel with a crank, torpedoed the Union's *USS Housatonic*, then reversed before the torpedo exploded. *Housatonic* sank within three minutes; *Hunley* itself disappeared the same night.

In 1995, Cussler and his team located the submarine. In 2000, lifted intact in a protective cradle and placed on a barge, *Hunley* was transferred to a state-of-the-art conservation laboratory, the *H.L. Hunley* Research Center at the College of Charleston (Jacobsen, 2001). Work by archaeologists, forensic scientists, and conservators, which will continue for some ten years, already has included X-ray and videoscope examinations to study construction design and fastening patterns. It was also necessary to find a way into the sediment-filled hull to remove the remains of the sub's eight-man crew and excavate artifacts. The *Hunley* conservation team is using digital photogrammetry to record in 3D the hull, machinery, and navigational gear (Jacobsen, 2001). *Hunley* Research Center has had to be equipped with a large viewing area, since people are fascinated with the proceedings and don't want to wait ten years until *Hunley* finally is put on display but want observe its rescue (Thomas Oertling, personal communication). So far has underwater archaeology field that *Hunley* and other undersea discoveries, such as La Salle's *La Belle* in Texas, have their own Internet websites (Hall et al., 1997) and active "Friends of" groups (www.hunley.org and www.thc.state.us/belle).

WRITING HISTORY

The writing of history can be dangerous. A writer's views on some aspect of history can be disproven by subsequent discoveries and, as philosophers of history know so well, a historian's reach often exceeds his grasp. He or she can never tell the whole story about any aspect of history. History by its very nature is never finished.

So it is that *The International Handbook of Underwater Archaeology* always will be a work in progress. Even now the editors feel that certain geographical areas are missing from the text and deserve coverage. So we attempt to fill in some of the gaps in the story of the past decade's accomplishments.

The Arctic

"The long history of exploration and settlement, the rugged conditions, and the loss of many vessels have combined to create a potentially rich underwater archaeological record in the Arctic," says James Delgado (1997a).

Exploration of the world's smallest and most northern body of water centered on the North Pole began with the Vikings in the 10th century; by the 16th century Europeans

began to probe along its fringes. Subsequent expeditions sought the Northwest Passage, and Great Britain, its Royal Navy, and Hudson's Bay Company mapped the Arctic and finally found the passage. Expeditions in the 19th century came to grief in the unforgiving Arctic: Sir John Franklin, 128 men, and two ships (*HMS Erebus* and *HMS Terror*) disappeared in 1845; the supply ship *Breadalbane* was crushed by ice during Sir Edward Belcher's expedition of 1853–1854; whalers lost vessels in the 1850s and 1860s; and only a handful of men survived an 1879 U.S. Navy expedition. Norwegian Roald Amundsen was the first to sail through the Northwest Passage in 1903–1905; he took the motor vessel *Maud* through the Passage in 1918–1920. Hudson's Bay Company and the Royal Canadian Mounted Police established outposts in the region in the 1930s, losing some ships in the process, including Amundsen's second ship *Baymaud* (ex-*Maud*) in 1930.

After World War II, air transportation and satellite imaging allowed completion of the mapping of the Arctic Ocean. Still, distance and logistics have kept archaeological work in the Arctic to a minimum (Delgado, 1997a).

The first detailed archaeological documentation of an Arctic shipwreck, undertaken in 1995–1996 by a team led by U.S./Canadian archaeologist James Delgado, studied the intact, mostly submerged hulk of *Baymaud* (ex-*Maud*) near Cambridge Bay and Victoria Island. The work documented the wreck's condition, assessed site formation processes, and compared *Maud*'s construction to that of *Fram* and *St. Roch*, two other Arctic vessels.

Further discoveries in the Arctic will involve high cost and tremendous logistics. Searchers continue to look for *Erebus* and *Terror*; but additional work on other ships and land sites associated with early Arctic expeditions, as well as a better understanding of native maritime practices, is needed first (Delgado, 1997a).

Canada

L'Anse aux Bouleaux Wreck. L'Anse aux Bouleaux is a cove near Baie-Trinité, Province of Québec, on the north shore of the Gulf of St. Lawrence. In 1994, a wreck was discovered by a local sport diver and later identified as a 17th-century New England ship from Sir William Phips's fleet that besieged the city of Québec in 1690. After an unsuccessful attack on Québec during the war between France and the League of Augsburg led by England, Phips was driven back to Boston after four of his ships were sunk. Archival research identified the l'Anse aux Bouleaux wreck as Phips's *Elizabeth* and *Mary*, a New England-built barque from Massachusetts.

Archaeological work began in 1995. Twenty-one divers trained by the Nautical Archaeology Society helped Parks Canada's archaeologists map the site and recover artifacts. Parks Canada's Marine Section began systematic excavation in 1996. Divers from the Groupe de Préservations des Vestiges Subaquatiques de Manicouagan collaborated.

Archaeologists established that Dorchester Company, under Captain John Winthrop, traveled on board *Elizabeth* and *Mary* and that the ship was a victualler as well as a troop carrier. Apart from its importance as part of Canada's most famous episode, the wreck is the oldest found in Canadian waters and could also be a very early example of a New England-built ship (Stevens, 1997).

Montagu Harbour. Between 1989 and 1992, the Montague Harbour Archaeology Project tested the hypothesis that archaeological remains related to cultural adaptations have been inundated by rising sea-levels during the postglacial period on the



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