



Fatimid gold coins being recovered during February 2015



Excavating Casarea's harbour as part of McMaster University's geological analysis

# ISRAEL'S UNDERWATER MARVEL

TEXT BY JOSEPH FREY

Twice in the last 18 months recreational divers have uncovered spectacular treasures while exploring the sunken ruins of this 2000-year old port, proving that Caesarea still has a few mysteries hidden in her depths

My fascination with Israel's Caesarea began over a decade ago when I saw an aerial photograph of this submerged two millennia-old harbour. Completed in 10 B.C. under King Herod, it was the world's first open sea large artificial harbour, its Roman engineering so advanced that it still inspires marine engineers to this day (even though it started sinking shortly after it was constructed!) Also to this day, like any large underwater archaeological site, Caesarea continues to reveal spectacular ancient secrets.

### Submerged port

After a decade of waiting, the anticipation builds as my dive partner Daniel Rozmarin from the Old Caesarea Diving Center and I complete our pre-dive briefing. Passing tanks down from the breakwater, we finish strapping on our weights in the harbour's middle basin. In the waters around us is an underwater circuit, consisting

of four trails (or tracks) marked by ropes extending from one point of archeological interest to another. There are a total of thirty-six identified points of interest within this Underwater Archaeological Park, the first of its kind in Israel.

It's the first time I've seen Roman-era ruins underwater and it's quite the rush. Considering when it was built, Herod's artificial harbour is massive. Covering 49 acres (20ha) with a 440 yard (400m) breakwater protecting the quay with its piers and warehouses, it's a marvel of Roman marine engineering. Of the four tracks, three are located in the outer basin and contain 30 of the 36 numbered points of interest. The outer basin is a cornucopia of ancient structures and it's to this area that we make our way.

### Marine engineering marvels

There are several ingenious aspects to the advanced marine engineering of Caesarea's harbour, including the self-flushing function of the middle and outer basins to prevent silting.

However, one of the most amazing feats was the laying of the outer basin's underwater foundations. "King Herod – or his engineers – knew that the outer basin had a sand and clay sea floor and they covered the bottom with small rocks and pebbles, and later started to build the breakwater's foundation on top of them," Koby Sharvit, director of the Israel Antiquities Authority's (IAA) Marine Archaeology Unit, tells us during our meeting.

Skilled carpenters built massive wooden caissons measuring up to 49'x36' (15x11m) on shore. These were partially filled with concrete and floated into place and tethered. Then they were filled with additional concrete and sunk to the desired spot on the seafloor, where they formed the foundation. At points 28

Top: Rare bronze Roman statuary recovered at the mouth of Caesarea's outer harbour. Above: Caesarea's middle basin in the foreground and outer basin beyond the breakwater. Insert: Caesarea from above

and 34, the remains of preserved caissons can be seen, and at points 22 and 25 the impressions of caisson cross beams can be seen in these massive concrete foundation blocks.

### 2000-year history

As advanced as the outer basin was, it started sinking shortly after King Herod's death in 4 A.D. Most of the basin's manmade features are now 16-22 feet (5-7 metres) below the surface. As to why the outer basin sank, theories range from strong storms and lack of maintenance, to its weight pressing down on the inconsistent sand and clay bottom, to earthquakes (it straddles a fault line) and tsunamis.

It was a friend of mine, Eduard Reinhardt, a professor of earth sciences at McMaster University, who introduced me to Caesarea. Based on Talmudic sources, Ed feels that Caesarea was hit by a tsunami on December 13, 115 A.D. which led to its sudden demise as an important port. Having

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conducted geoarchaeological research at Caesarea and based on his research, Ed states that, "While a fault ran through the harbour, it wasn't an earthquake that damaged Caesarea as has been proposed. Our excavation and tsunami study dismisses that theory."

"We engaged in underwater excavation and retrieved sediment cores," said Ed. "Geological analysis—paleontology and sedimentology—provided evidence that a tsunami impacted Caesarea and Yavne." The tsunami was probably triggered by an earthquake that destroyed Antioch, and was generated somewhere on the Cyprian Arc fault system. However, Koby believes that decades of powerful storms combined with the lack of maintenance led to the demise of the artificial harbour.

### Spectacular treasures

It could very well have been a combination of heavy storms and the 115 A.D. tsunami that brought about the abrupt end of Caesarea as a major commercial port. But it's another storm during February 2015 that stirred up the bottom of Caesarea's ancient harbour, turning up gold and additional insight into the area's maritime history. While diving just after the February storm, recreational diver Tzvika Feuer noticed a yellow shimmer. Picking the object up, he realized that he has discovered a gold coin. Excited, Tzvika and his dive buddies recovered sixty gold coins before turning them into Koby's IAA Marine Archaeology Unit. Koby's IAA divers subsequently engaged in an underwater survey and excavation and recovered over 2,580 gold coins, weighing almost 17 pounds (8 kilograms)! Archaeological research has concluded that these coins were from a 10th or 11th century A.D. Fatimid shipwreck. The coins were minted by the Fatimid caliphs of Egypt, a wealthy Shi'ite dynasty who engaged in international maritime trade.

Who would have thought that after the Fatimid gold coin discovery, Caesarea's finds could get much better? Well, the day after Daniel and I dove in Caesarea's ancient harbour this past April, two recreational divers, Ran Feinstein and Ofer Ra'anani, noticed a piece of metal on the sea floor. Brushing the sand aside they discovered a bronze Roman statue. While Roman statues made of marble



Photo Credit Israel Antiquities Authority



are common, metal statues are extremely rare, since the Romans recycled their metal statues by melting them down. Most Roman metal statues have been found underwater, buried under sand as part of a shipwreck. Realizing the importance of the find, Koby's IAA team along with volunteer divers quickly mobilized to carry out an underwater archaeological survey and excavations. They uncovered

Discovering one of the two hoards of bronze coins, which would have been contained in an Amphorae jar aboard ship, each weighed 22lbs (10kg). Above: Part of Caesarea's quay pavement

thousands of finds relating to the ship's construction and its cargo, including 55 pounds (25 kg) of bronze coins dated to the early 4th century A.D.

It becomes apparent that like the Fatimid shipwreck, this 1,600-year-old ship from the Late Roman Empire also sank during a storm just outside the harbour's entrance. Having been buried under the sand, the bronze statues on the ship are still in mint condition, "As if they had been cast yesterday," according to Koby. With its historically significant hoard of Roman metal statuary, this ship has become the most important shipwreck to be found in Israeli's waters in the last thirty years.

Caesarea is undoubtedly one of the most important marine archaeological sites in the world. Home to the world's first large artificial harbour, for two hundred years it was the centre of trade between Rome and the Indian Ocean. Even after its demise as a great port in 115 A.D., Caesarea still played a part in international maritime commerce for the next several centuries, as the two shipwrecks discovered this year and last prove. For any scuba diver who is a student of marine archaeology or maritime history Caesarea is a must-dive. [ ]

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