



A colossal statue of Hapy, the ancient Egyptian god of Nile flooding, being raised from Abu Qir Bay.

**Sunken Cities:  
Egypt's Lost  
Worlds**

*British Museum,  
London.  
Until 27 November  
2016.*

operation by the European Institute for Underwater Archaeology (IEASM) in Paris, directed by Franck Goddio. The team used side-scan sonar,

nuclear magnetic resonance magnetometers and sub-bottom profilers to reveal slices through the geological strata beneath the sea bed, allowing them to begin partial excavation. Divers uncovered buildings, massive sculptures and a huge range of objects, from bronze incense burners to gold jewellery. More than 750 ancient anchors and 69 ships were also detected in the ooze, most of them from the sixth to second centuries BC, in Thonis-Heracleion's harbour.

An exhibition of this extraordinary trove, *Sunken Cities*, is the first large-scale show of underwater discoveries at the British Museum in London, and the most complete presentation of this complex Egyptian-Greek society so far.

More than 200 IEASM finds are exhibited, denoted on the information panels by a hieroglyphic zigzag symbolizing water. Many of them were displayed in Berlin's Martin-Gropius-Bau and the Grand Palais in Paris in 2006-07, but much has been discovered since. Among the stone statues of deities and rulers in pharaonic or Greek dress is a 5.4-metre figure of Hapy, god of the Nile inundation, which greets visitors as it once greeted Greek sailors approaching the mouth of the Nile. Nearby are inscriptions in hieroglyphic and Greek on stone and gold, intricate jewellery in recognizably Greek styles and delicate lead models of votive barques used in the cult of Osiris. These exhibits are supplemented by objects from other sites, lent by a number of museums in Alexandria and by the Egyptian Museum in Cairo, as well as the British Museum's renowned Egyptian collections (notably, those from the upstream ancient Greek port of Naukratis). Ethereal silent underwater film footage strategically positioned throughout the exhibition shows divers investigating and rescuing a few key objects, including a sycamore barge of Osiris.

The hybrid culture on show may surprise, and at times confuse, visitors familiar with the art and objects characteristic of earlier Egyptian dynasties found at sites such as Luxor and Abu Simbel. Says exhibition curator Aurélia Masson-Berghoff: "People sometimes assume that when two cultures mix, the essence of each is diluted and, as a result, weakened; *Sunken Cities* demonstrates the opposite." She notes that ancient Egypt was not isolated, as is sometimes thought, but an "outward looking, influential and inclusive" society. This is amply borne out in the history and culture of Ptolemaic and Roman Egypt. Alexander and his friend and general Ptolemy — who became Ptolemy I

FRANCK GODDIO/HILTI FOUNDATION/CHRISTOPH GERIGK

ARCHAEOLOGY

# Soaked in history

**Andrew Robinson** tours an enthralling exhibition of finds from two ancient cities, long sunk in the Nile delta.

In Egypt's Nile delta at Abu Qir Bay lie the remains of two cities. In 500 BC, Canopus and Thonis-Heracleion were crucial ports for trade with Greece and Greek settlement. Even their names reflect Greek mythological figures: Kanopos, pilot of Spartan king Menelaus's ship in the Trojan War, and the hero Herakles. The cities continued to flourish until at least the late fourth century AD, through Alexander the Great's founding of Alexandria in 332 BC, the Ptolemaic

period of Greek rule that ended in 30 BC, and Roman rule.

At some point, however, they began to sink. By the eighth century AD, the cities were submerged several metres under the Mediterranean sea bed, their precise locations lost for centuries.

In the late 1990s, they were found as part of a technically challenging and scientifically sophisticated

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in 306 BC — worshipped at Egyptian shrines; and Cleopatra and her lover the Roman general Mark Antony presented themselves as the living Egyptian–Greek deities Isis–Aphrodite and Osiris–Dionysus. A terracotta lamp with an Egyptian Isis motif, dating from the second century AD and on show from the British Museum collection, was found in far-off Roman Britain.

Ancient Egyptian science also appears. The black granite of a fascinating shrine from the fourth century BC known as the Naos of the Decades is heavily inscribed with hieroglyphs and a large figure of a lion. In submerged Canopus, it broke apart and the pieces spread far and wide: the roof ended up in the Louvre in Paris in 1817; the base and rear wall were found on site underwater in 1933 and deposited in the Graeco-Roman

**“Ancient Egypt was not isolated, but an outward looking, influential and inclusive society.”**

Museum in Alexandria. Amazingly, the IEASM team stumbled on four further pieces in 1999. Egyptologist Anne-Sophie von Bomhard examined the Naos, reconstructed after

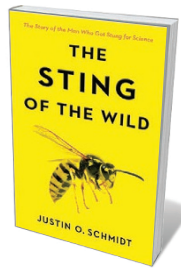
more than a millennium. Its external surfaces depict a calendar dividing the Egyptian year into ten-day sections (‘decades’), connected with the successive rising of certain stars (‘decans’). This proved that ancient Egyptian astrology was based on astronomical observations.

The exhibition discusses theories about why Canopus and Thonis-Heracleion sank without favouring any one cause, for lack of definitive historical or contemporary evidence. Possibilities range from tsunamis and earthquakes to floods, variations in sea level and geological subsidence, all known to have occurred in the region. There was, for instance, an earthquake in AD 796 or 797 that damaged the top section of Alexandria’s Pharos lighthouse, according to ninth-century AD Arab historian al-Tabari. These natural forces may have contributed to another, human-made, phenomenon revealed by core samples taken from the sediments under Abu Qir Bay: the liquefaction of the clay soils, triggered by pressure from the cities’ heavy temple buildings.

According to Goddio, perhaps as little as 5% of the area around the sunken cities has been investigated. As he writes at the exhibition’s end: “What we know now is just a fraction. We are still at the very beginning of our search.” ■

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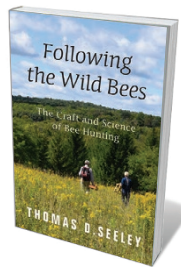
## Books in brief



### The Sting of the Wild

Justin O. Schmidt JOHNS HOPKINS UNIVERSITY PRESS (2016)

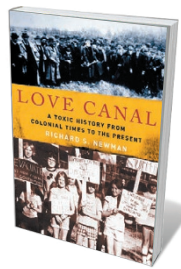
Entomologist Justin Schmidt takes an immersive approach to his work. Notching up the stings of 83 insect species, he ranks them on a pain index from ‘ethereal’ to ‘satanic’. His low-down on sting biochemistry and physiology is relentlessly zestful, even as he recounts the swelling, burning consequences of his curiosity. We also meet perpetrators such as the bullet ant (*Paraponera clavata*), equipped with a fearsome sting and chemical warnings smelling of burnt garlic; and the tarantula hawk wasp (*Pepsis* spp.), whose scream-inducing jab delivers mysteriously non-toxic venom.



### Following the Wild Bees: The Craft and Science of Bee Hunting

Thomas D. Seeley PRINCETON UNIVERSITY PRESS (2016)

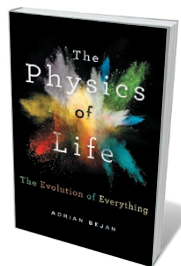
Beekeeping is modish. But as melittologist Thomas Seeley reveals in this captivating study, there is another, uniquely thrilling window on *Apis mellifera*: the sport and science of ‘hunting’ for wild-bee trees. Seeley’s passion for the social insects blazes as he quotes historical accounts by Henry David Thoreau and describes the intricacies of the chase, from baiting with anise-scented sugar syrup to patiently amassing location data. And he delivers the timely reminder that wild honeybee colonies with genetic resilience are key in an era of widespread colony collapse.



### Love Canal: A Toxic History from Colonial Times to the Present

Richard S. Newman OXFORD UNIVERSITY PRESS (2016)

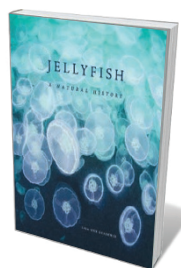
In this chronicle of a notorious US environmental crisis, historian Richard Newman focuses on how community activism forced policy change. In 1978, a health emergency was declared at Love Canal, a suburb of Niagara Falls, New York, when clusters of birth defects and other health issues were discovered — a legacy of chemicals leaching from a 20,000-tonne toxic-waste dump. Protests over the extent and impact of contamination helped to spur the 1980 ‘Superfund’ federal statute that enabled the clean-up of hazardous-waste sites. Newman stresses, however, that the legal and medical saga is not over.



### The Physics of Life: The Evolution of Everything

Adrian Bejan ST MARTIN’S (2016)

Energy scientist Adrian Bejan defines life as freely evolving movement in both the inanimate and animate worlds — from a lightning strike to a sprouting seed. This organizational phenomenon is, he argues, underpinned by a principle of physics: “constructal law”, which holds that “power and dissipation conspire to facilitate all movement on earth, animate and inanimate, animal, human, and machine”. Bejan’s treatise crackles with ideas, but seeing analogous patterns in river systems, the spread of ideas and the shift to sustainability can seem a stretch in places.



### Jellyfish: A Natural History

Lisa-Ann Gershwin UNIVERSITY OF CHICAGO PRESS (2016)

One resembles an exquisitely ruffled and pleated confection of pale silk chiffon; another, a tangle of bioluminescent necklaces cascading from a bauble. Both marine drifters (*Desmonema glaciale* and *Physalia*) feature in jellyfish expert Lisa-Ann Gershwin’s absorbing coffee-table book on this transparent group with three evolutionary lineages. Succinct science is intercut with surreal portraiture — from the twinkling Santa’s hat jellyfish (*Periphylla periphylla*) to the delicate blue by-the-wind sailor (*Velella velella*). **Barbara Kiser**