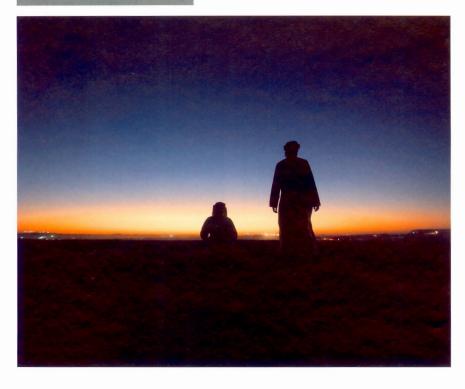
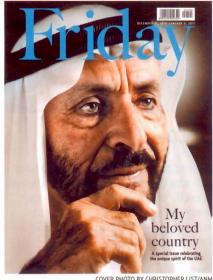


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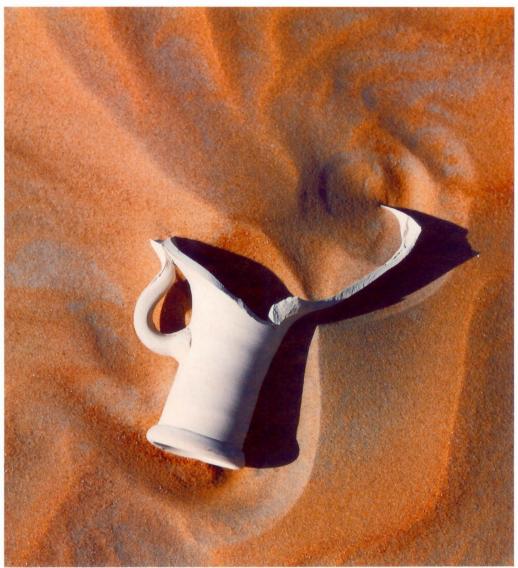


PHOTO FOR ILLUSTRATIVE PURPOSES ONLY

In his two decades of exploration in the region, Dr Mark Beech has found ample evidence that the landscape of the Middle East in ancient times was dramatically different from what it is today

r Mark Beech could have been a storyteller if he were born in an earlier time, a hakawati reciting folklore to a huddled audience in the town square. His voice has a mesmerising quality as he recounts the story of the Middle East, and how the landscape of the UAE, as we see it today, was formed literally out of water and fertile land.

According to Dr Beech, and backed up by geological and palaeontological evidence, the sea of sand we see around us in the UAE today, was in the past literally under water.

Water, water everywhere

"Originally, an ancient sea, called the Tethys Sea, covered this area that we now know as the UAE," says Dr Beech. "The earliest evidence we have for this are the fossils discovered in Abu Dhabi at Jebel Hafeet. Ancient marine fossils such as ancient corals and gastropod shells prove its existence."

Some of these fossils, called Nummulites, as well as primitive sea creatures called Rudists, are the earliest evidence we have for life in this region. "It's quite ironic that all... the emirates was under the sea 70 million years ago."

The formation of Arabia happened later, and when it did, it was originally attached to Africa. Tectonic shifting, or the collision of the earth plates beneath the African and Asian continents, led to more changes, and the formation of the Red Sea, which split the Arabian Peninsula away from Africa around 40 million years ago. This set the stage for the formation of the UAE as we know it today.

"The different kinds of huge forces, the tectonics and the formation of the Arabian plate later led to the then Arabia to become populated with animals and fauna," narrates Dr Beech. "The fauna is interesting because it's a mixture of Africa and Asia. In fact, Al Gharbia, or the western region of Abu Dhabi, has this huge area where fossils dating to the late Miocene period – between about six to eight

million years ago - were discovered. These include some sites with elephant footprints as well as numerous fossil localities."

The Historic Environment Department at the Abu Dhabi Authority for Culture and Heritage (Adach), together with a team of palaeontologists from Yale University and the University of Poitiers, are currently investigating these fossil sites.

"The western region of Abu Dhabi was like modern day East Africa, with giant rivers flowing through it," surmises Dr Beech. "So it was quite green closer to the rivers, but more arid further away from them. This kind of geographical development obviously had a big impact on the emergence of life at that point in time, with the earliest human type fossils emerging in Africa, in Chad and in East Africa. So far, we have not come across any early human fossils in this region, though we've discovered some smaller monkeys and other animals. That doesn't necessarily negate their presence in these parts; finding fossils is like finding a needle in a hay stack."

The arrival of early humans following this period was a result of a series of periods of high rainfall and low rainfall.

The earliest known fossil remains of Homo sapiens are from an area known as Omo Kibish in south-western Ethiopia and dates back to around 195,000 years ago, says Dr Beech. "We certainly know that around 120,000 years ago some of the early Homo sapiens came out of Africa. This may have been through the Nile valley, and what is called the Levantine Corridor through Palestine, as fossil remains have been discovered there dating to between 80,000 to 120,000 years ago. We now know from recent archaeological work carried out by Adach at Jebel Barakah, located in Abu Dhabi's western region, that the earliest evidence of people in the UAE dates to around 150,000-200,000 years ago. We have new evidence from Yemen and Oman showing that early humans came across from what is now Somalia to Yemen, and then travelled along the sea coast of eastern Arabia by Oman to the UAE."

Finding roots

The interesting observation Dr Beech makes about the people who first settled along the eastern Arabian shores is their exploitation of the natural resources even in their rudimentary state of development.

"Most of the modern-day settlements in Oman are by the coast, which also have fresh water bodies... Two of the earliest areas to be settled in the UAE by these early humans were Jebel Barakah and the site of Jebel Fiya in Sharjah."

There was no Arabian Gulf at this time. "The sea came much later," points out Dr Beech. "You are looking at the Gulf at this

time as a shallow river basin - there was this ancient river coming down the Gulf, which was actually the Tigris and the Euphrates, the two great rivers in Iraq, joined together. From what is modern-day Saudi Arabia, Bahrain, Qatar and Abu Dhabi, there were a series of smaller rivers running down into the Gulf basin. These early people were hunters and they moved along these ancient river valleys hunting animals, following them on their migratory routes along the river.

"It is amazing to imagine that there was a giant river basin in the Gulf, with trees along the rivers and animals, which are now extinct like the giant cattle Bos primigenius. There is one site dating to around 7,000 years ago in Sharjah where archaeologists discovered a bone of this animal - the giant wild Aurochs. which was the cattle of the time. This is the last trace of this animal, which once must have been common along the ancient river valleys of the Gulf."

Change in the landscape

From around 18,000 years ago there was a global increase in sea level of approximately 120m. This was due to the melting of the polar ice at the end of the last glaciation. By around 8,000 years ago the Arabian Gulf basin had been inundated with seawater via the straits at Musandam, says Dr Beech. The sea level was about one to two metres higher than present-day sea levels. This gave people the opportunity to travel by boat. So, the sea was a kind of motor highway for the prehistoric people and led to connections between adjacent areas.

There was also a significant environmental change which affected human populations at this time. There was a special period between around 6,000-9,000 years ago known as the Holocene Climatic Optimum period. "It affected the entire world, especially Africa, Arabia and Asia," reveals Dr Beech.

This was caused by a shift in the pattern of the monsoons due to the shift in the Earth's axis, which resulted in the monsoon belt impacting 1-1.5 degrees further north than it presently does. This resulted in the Arabian Peninsula experiencing a much wetter period with higher rainfall than today. The same situation is true for the Sahara desert in North Africa. During this period the Sahara was partly green and certain sub-Saharan animals were able to live there."

The impact of the Holocene Climatic Optimum period was very dramatic in the Arabian Peninsula and this gave birth to various areas with lakes. "You can imagine this was a paradise for ancient people to settle in," he postulates. "The interesting thing is that this wasn't discovered until the late 1960s to early 1970s."



SILVIA RAPON/ANM

Dr Mark Beech "Originally, an ancient sea, called the Tethys Sea, covered this area that we know as the UAE."

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Searching for answers

Dr Beech has been carriying out archaeological research in the deserts of Abu Dhabi since the early 1990s. "I was doing some work in the south-eastern desert of Abu Dhabi at Umm az-Zamul and we discovered a number of early Neolithic sites dating to over 7,000 years ago," he reveals. "We are now looking for and documenting these sites."

Dr Beech explains that the inhabitants were in actual fact pastoral nomads rather than hunters. "Stone arrowheads [found there] are only one part of their toolkit. More importantly, they reared their own animals such as domestic sheep and goats, as well as cattle. It was a complex economy using animals and marine resources on the coast. The key thing actually of course was their mobility and the search for water."

Beginning of the UAE

The story of the UAE took a different turn with the creation of the Arabian Gulf. Islands and coastal locations, which had water became the prime areas to settle. This led to the formation of the earliest settlements known along the coast of Abu Dhabi on Marawah and Delma Islands. "In historic times Delma Island became famous for its 200 sweet water wells, and even up until the 1960s water was brought to Abu Dhabi from there," says Dr Beech.

There was another major change which occurred around 6,000 years ago, which changed the face of the UAE. "The retreat of the monsoon back to what is more like its present position meant that there was less water in the UAE. So, metaphorically speaking the tap that was turned on 9,000 years ago and made this a fertile region, was turned off 6,000 years ago." Archaeologists call the subsequent period the 'Dark Millennium'. "We call this the 'Dark Millennium' because from round 6,000 to 5,000 years ago we have almost no archaeological sites in Abu Dhabi that date to that period. We do, however, have some sites along the east coast of Oman, so we surmise that the people probably had to move to a better area where they could rely on marine resources to survive."

From 'darkness' to light

It was a period of climatic deterioration. "But it started to improve around 5,000 years ago which marked the beginning of the Bronze Age," says Dr Beech. "People discovered that they could exploit copper in the Hajar Mountains. They also discovered oasis farming so this was a key thing for survival. So, 5,000 years ago marked the discovery of oases, the beginning of oasis farming and the change, along with their domestic animals, to a more settled way of life rather than moving around.

"The first evidence we have in the

archaeological record is from Al Ain for growing cereals from the Bronze Age onwards," says Dr Beech. "Different tribal units started settling around the water resources here which extended all the way to Oman, so there was the beginnings of a kind of tribalism.

This was also around the time they started building tower houses made with mud bricks.

Pottery that is found in the UAE points to the influence of many different cultures in the region. The earliest known pottery discovered in Abu Dhabi is that from Marawah and Delma Islands. This is known as Ubaid pottery, which was manufactured in southern Iraq between around 7,000 to 5,000 years ago. Its presence in the southern Arabian Gulf demonstrates that connections by sea were already flourishing by this time.

The beginning of Bronze age

The earliest type of Bronze Age pottery, found during the so-called "Hafit period", is known as Jemdet Nasr pottery named after their place of origin in southern Iraq. Other Bronze Age pottery discovered here includes that from Umm an-Nar, a small island near Abu Dhabi, which was occupied around 4,000-4,600 years ago. Here, local pottery made in the Hili region of Al Ain, as well as imported pottery from Mesopotamia and the Indus Valley was discovered.

"Obviously, the sea and communications occupied a very strategic position in UAE even then," says Dr Beech. "Umm an-Nar was important because the copper from the Hajar Mountains was brought here to be put on ships and sent to Mesopotamia. So, it was like the Jebel Ali of its time."

Salt seasons the landscape

"Another fundamental moment in the history of the formation of the modern coastline of Abu Dhabi, as we see it today, was the creation of the sabkha or flat areas of supratidal salt flats," says Dr Beech. "It formed between around 7,000 to 4,000 years ago.

"Sabkhas provide an important modern analogue for petroleum geologists. [They] are like a giant laboratory for geologists," says Dr Beech. "It is important to preserve such environments as they help modern petroleum geologists to understand the deposits they are trying to exploit for oil, which today in Abu Dhabi, lie anything between two to three km under the ground," says Dr Beech. "The preservation of important natural and cultural landscapes of the UAE is something that I feel very strongly about. The story of the UAE and the development of its landscapes is an important one that needs to be understood."

- Shiva Kumar Thekkepat is Features Writer, Friday