Peopling the Past Video 20: Beer in Ancient Egypt with Amr Shahat

Transcript

Video begins with instrumental music played over the title card which reads “Peopling the Past”

There is a man with brown hair facing the camera. He is wearing a light jacket and a dark shirt. The main screen shows the Peopling the Past logo.

We hear Shahat speak: “Hello, I'm Amr Shahat. I'm an Egyptian archaeologist specialized in plants and food remains from Egyptian tombs and settlements. I'm also a research associate at the Cotsen Institute of Archaeology, University of California, Los Angeles. Welcome to Peopling the Past. What topic are we talking about today?”

The slide now shows the Neumagen Relief, which is a late Roman tomb sculpture that shows a school scene with pupils and a teacher. The text reads “What topic are you talking about today?”

Shahat: “Today I'm speaking to you about Paleoethnobotany. "Paleo" means ancient, "ethno" people, and "botany" means plants. And basically we speak about how plants shaped people's culture and health in the past.”

The slide shows figures from a model of beer making in ancient Egypt. Over the image is text reading “Paleoethnobotany. How plants shaped people’s culture and health.

Shahat: “What sources or data do we look at?”

The slide shows three images. On the left is a statue in stone of a seated scribe from ancient Egypt. In the center is a cuneiform clay table from Mesopotamia. On the right is a wall painting from Pompeii known as the Sappho Tondo. Though it does not depict the famous author, it shows the portrait of a well-dressed woman with a writing utensil poised to her lip. The text on the slide reads “What sources or data do you look at?”

Shahat: “So paleoethnobotany investigates social history of past societies through close analysis of the cultural uses of plants in food, medicine, rituals, clothing, trade, and also in the cultural exchange network. And we find plants by two ways in archaeological sites. First technique is called flotation. Basically you put soil that we take from the excavation sites, as you see here, and we pour the soil from the top and we pump the water

from the bottom. So this water is connected here, and actually stirs the water softly and smoothly from the bottom up. So the plant remains have less density than the density of the water. And because of this density difference the plant remains float on the top and then they come out here in this small container that I take, I dry, and put under the microscope to identify the ancient species of plants discovered from this site."

The slide is titled "Paleoethnobotany", and on the left, has a block of text that was read out by Shahat. On the right is an image of Shaht dry sifting plant samples, and in the center is an image still from a video that shows Shahat and two colleagues standing in front of a flotation device.

Shahat: "And I have a song here in Arabic and in English that explains the process. (singing in Arabic) "Flotation, my friend, flotation. So we don't lose any information. Zan zan" And the other way to find archaeobotanical remains is called dry sifting. So we take the soil, dry as it is, and we put it in multi layers of sieves and we put the bigger mesh size on the top and the smaller mesh size like 1 millimeter and 0.5 millimeter down in the bottom. And the plants'... the plant remains go down, usually we find them in the 2 millimeter, one millimeter, and half millimeter mesh size of sieves. After we do this, we also take the plants and put them under the microscope to identify them based on how they look anatomically and in terms of plant morphology. So basically this science is a combination of archaeological science and plant science or botany. How can this topic or material tell us about real people in the past? And this is an important question because every day each of us thinks about something healthy and delicious to eat or drink. A lot of scientific research also is concerned about the relationship between health and diet and the impact of climate change on healthy food supply to our community today."

Slide shows four images. On the left is a Greek marble grave stele of a little girl holding a bird. To the right of this is a Greek vase painting scene that shows women weaving at a loom. To the right of that are model figures of bakers preparing and baking bread from ancient Egypt. On the right is a painted "mummy portrait" of a young man from the Fayum in Egypt. The text reads "How can this topic or material tell us about real people in the past?"

Shahat: "So today I'm excited to share with you lessons on healthy food derived from the past. And as an archaeobotanist I study ancient cultures from the lens of food and how ancient populations use these plants in different recipes to mark their identity and to maintain their health. I'm gonna take you to an example of a site called Nag ed Deir dating to 3000

BC—it means over 5 000 years old—in the south of Egypt (in upper Egypt), as you see here. And it is north of Luxor (Thebes) the famous site as you see here."

Slide shows a map of Upper Egypt with full map of Egypt in the bottom left. The aerial view shows the river Nile bend around the area of Thebes, which is identified on the map. Also identified are the sites of Dendara and Deir el-Ballas on the right, as well as Nag ed Deir near the top.

Shahat: "And the site is known for non-elite people who left behind no text, no record, no fancy coffins. But we still can have an idea about their lifestyle in terms of food and their health and their regional identity based on the variation of the recipes they have different than other regions in Egypt."

The slide shows a black and white image of the excavated site, with holes and objects visible. The slide is titled "Nag ed Deir Cemetery N7000."

Shahat: "So I'm excited to share with you the finding or special finding from this site and speak about what a 5,000 year old beer buried in an Egyptian tomb like this tells us about food and health of people in the past."

The slide shows another model of figures participating in making beer. The text reads "What a 5,000 year Egyptian beer tells us about healthy food."

Shahat: "So in this tomb, the archaeologist discovered a jar that you see here with a wavy handled jar and he noted that he found oily ... oily sediment or basically sandy soil that he found, oily soil. But he didn't leave any other notes or studied this soil and what it could be."

The slide shows a black and white image of the jar as it was found in the soil.

Shahat: "So after the jar came to the Hearst Museum of Anthropology in the University of California, Berkeley, I decided to do my research on this sandy sediment. And surprisingly after putting it under the microscope, I found a fragment of fermented barley. You can also see that the barley is deformed here because of being buried for thousands of years and also because of the process of fermentation for beer making."

The slide shows an image of the jar standing upright on the right, and close-up images of the barley on the left. The slide is titled "Beer Mash from Tomb N7402."

Shahat: "Then to make sure that this beer and the seeds we see from this soil is actually ancient, I conducted carbon dating to make sure. And the

carbon date was around 3600 BC so this is basically over 5000 year old beer mash.”

The slide shows the same two images as the previous slide with a graph of the carbon dates added overtop.

Shahat: “But how can this topic or material tell us about the life of people in the past? Well beer was consumed as a main staple and nutrition in ancient Egypt and sometimes it was safer than drinking pure water—because you consider filtering the water from impurities and other things—so it was sometimes safer to drink fermented beer than water. And in the settlement of the pyramid builders archaeologist Mark Lehner and his team have found the granaries and beer vats to supply food and drinks for the workers and also pay them in the form of food ration. But what do you think could be the difference between the ancient and modern beer? Was it the more alcohol content? More bitter? More nutritious? Different thoughts can come to our mind.”

The slide shows a picture of the excavation of the settlement of pyramid workers on the left, with labels identifying the granaries and beer vats. On the right are images of barley and wild fruit remains. The slide is titled “Beer Vats in the Lost City of the Pyramids.”

Shahat: “but in my research I use interdisciplinary methods including nanotechnology like using this microscope to identify the beer recipe which was made of fermented barley, as we mentioned before, and like today's beer, but what is the difference then? This is where the second exciting part of my research comes in. The first difference is that the ancient beer was rich in fiber. The chaff of the grain that includes the fibers and vitamins was not totally removed, which we eventually find sometimes in the gut of mummies. But there is another surprise. The beer recipe also included wild fruits as natural sweetener and also rich in fiber. So kind of Harry Potter's sweet beer (Butterbeer) that people drink and tourists drink in Universal Studios in Los Angeles today.”

The slide has two images. On the left is an image of a computer and a microscope used in Shahat’s analsyis. On the right are close up images of barley and wild fruit remains. The slide is titled “Regional Recipe of Beer.”

Shahat: “This study of the beer and food remains from ancient Egyptian tombs also show that how ancient Egyptians exploited large biodiversity of wild plants in their diet as you see in this image. They had different fruits, they didn't just rely on beer and barley, but they exploited different fruits from the region like Sycamore Fig, Christ’s Thorne – we call it "Nabak" in

Arabic—in Egypt—dates, persea fruits, and grapes. But sometimes also they import different plants like watermelon as part of their interaction with other cultures. And in the case of watermelon, it's a part of interaction with eastern Africa. Other fruits like pomegranate and juniper reflects interaction with societies in the ancient Near East, like Lebanon and Syria and other and southern Levant (Israel / Palestine). So the question now is what is the connection between high fiber content that we find in ancient Egyptian food and beverages like beer having fibers and wild fruits? Our modern society today and especially the western diet, besides being high in its sugar and fats content, is actually marked by its poor fiber consumption compared to the ancient population. Also climate change endangers plant biodiversity which comes with health impacts in the form of decline in our gut microbiota that maintains our immune system and mood health. And a lot of these plants that we find from archaeological record unfortunately either endangered or completely went extinct because of climate change mainly and other issues of managing the Nile River and the agricultural cycle. In few words, what a 5,000 year old Egyptian beer tell us about healthy food and gives us lesson for our diet today, is that the more... the more fiber intake and more diversity of plants you eat in your diet the better gut and mood health you have like an ancient Egyptian."

The slide is titled Large Plant Biodiversity, and on it are pictures of remains of different grains and fruits. They include, from top left to bottom right, Sycamore Fig, Emmer Wheat, Watermelon, Parthenocarpic Dates, Grapes, Christ's Thorn, Date, and Persea Nut.

Shahat: "I would like to thank the Cotsen Institute of Archaeology and the Community Archaeology Initiative led by different faculty members there especially the Buccellati family. And I would like to thank the American Research Center in Egypt for their funding and support of this research."

The slide shows logos for the Costen Institute of Archaeology at UCLA and the American Research Center in Egypt.

Shahat: "Finally I would like to thank all of you for watching and thanks for Peopling the Past."

Cut to the last slide which shows the credits for this episode:

Video Content and Narration: Amr Shahat, Instagram @amrkhalafshahat
Video Editing and Captioning: Christine Johnston, Twitter @archaeologuest

Intro Music: Marika Papagika, Kremetai I Kapota (Free Music Archive, CC BY-NC-ND 3.0)
Peopling the Past Logo: Caitlin Mostoway Parker, Instagram @artbycaitlinmp
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