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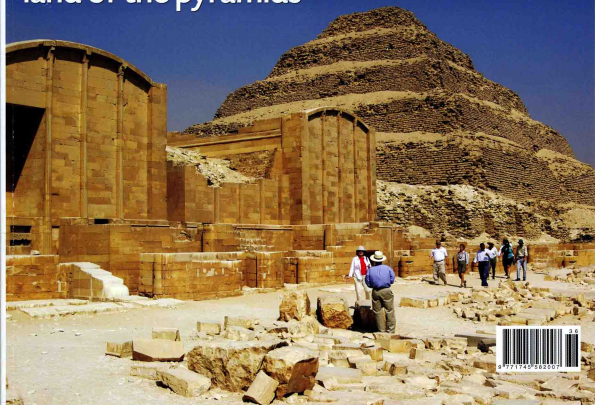
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# Wonders of Egypt

Phenomenal finds from the  
land of the pyramids



**EGYPT SPECIAL: SAQQARA • NILE DELTA • ROYAL CITY OF SAIS • LUXOR • TELL EL-AMARNA**



PHOTO: Sarah Tishkoff

**LEFT** Datog women from the Arusha district of Tanzania are among the 121 distinct populations of modern-day Africans whose DNA has been sampled by Prof. Sarah Tishkoff of the Departments of Genetics and Biology, University of Pennsylvania, in the most comprehensive study of its kind yet undertaken.

Pennsylvania, is co-author of a report in *Science* summarising the results of ten years of research involving trips to some of the most remote parts of Africa to collect blood samples. She has also identified genetic markers in the DNA of the present-day inhabitants of East Africa living near to the Red Sea, linking them to Asian and European populations, suggesting that this is the group that migrated out of Africa to populate the rest of the world. West Africans speaking the Niger-Kordofanian language were found to share many genetic traits with African-Americans, indicating they were the ancestors of most of the slaves sent to the New World. Another finding is that, while South Africa has the population with the longest genetic lineage, it also has the highest levels of mixed ancestry on the globe: the so-called 'Cape-coloured' population is characterised by a blend of African, European, East Asian and South Indian ancestry,' Tishkoff said. \*

## Ancestral San

One of the most comprehensive and detailed studies of African DNA to date has identified the San people of southern Africa as the most genetically diverse group among the 121 distinct populations of modern-day Africans.

Working on the theory that genetic diversity accumulates over time, this would make the San the oldest population of humans on the planet. The same study has succeeded in identifying 14 ancestral populations

from whom all of Africa's modern population are descended, and, remarkably, they have found that differences and similarities in their genes closely follows the differences and similarities of their spoken languages, even when they live many thousands of miles apart: the Sandawe and Hadza of Tanzania, for example, shared genetic traits with the Khoisan speakers of southern Africa, and all three groups speak 'click' languages.

Sarah Tishkoff, of the University of

## TEMPLE SHEDS LIGHT ON 'DARK AGE'

The discovery of a monumental temple constructed during 10th/9th Century BC at Tell Tayinat, on the Plain of Antioch in south-eastern Turkey, suggests that not all was as dark in the so-called 'Dark Age' of Near Eastern archaeology as has been previously suggested.

In some parts of the Near East, the transition from the Late Bronze Age to the Early Iron Age was marked by widespread famine, ethnic strife and population movement, including the battles of Homeric epic and the migrations of the Sea Peoples (or biblical Philistines) and of the Israelites.

But the discovery of a remarkably well-preserved temple reveals that some ruling dynasties survived the collapse of the great Bronze Age powers. Tayinat, which later historical sources suggest was the site of

Kunulua, royal city of the powerful Kingdom of Palestine, is known from excavations carried out by the University of Chicago in the 1930s to date to the Early Bronze Age (c.3200–2000 BC). The building of this monumental temple during the critical transition period to the Iron Age suggests continuity rather than collapse in a city strategically situated at the junction between the Anatolian highlands to the north and the lowland steppes of Syria and the Levant to the east and south.

Excavations in 2008 uncovered the temple's southern approach, which once faced a broad stone-paved courtyard, and consisted of a monumental staircase and porticoed-entrance, supported by a large, ornately carved basalt column base. Fragments of monumental stela

PHOTO: James Osborne, University of Toronto

# NATIVE AMERICANS ALL RELATED?

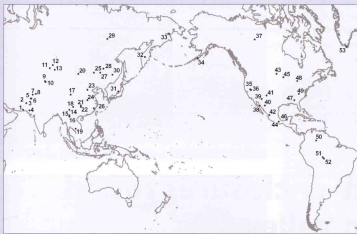
**C**ontradictory data have fuelled a debate in America concerning the dates of migrations from Asia into the American continent, whether migration took place just once, or on numerous occasions, perhaps even before the last Ice Age, and whether today's Native American people derive from one ancestral population or several.

A recent DNA study appears to settle the question: 'our work provides strong evidence that, in general, Native Americans are more closely related to each other than to any other existing Asian populations, except those that live at the very edge of the Bering Strait,' says Kari Britt Schroeder, of the University of California, Davis, one of the authors of a

paper in the May issue of the journal *Molecular Biology and Evolution*. A specific genetic marker, dubbed the '9-repeat allele', was found in all of the 41 populations that they sampled from Alaska to the southern tip of Chile, as well as in Inuit from Greenland and the Chukchi and Koryak people native to the Asian (western) side of the Bering Strait.

This same genetic variant was absent in all 54 of the Eurasian, African and Oceanian groups the team sampled. The most straightforward explanation for the distribution of the 9-repeat allele was that all modern Native Americans, Greenlanders, and western Beringians descend from a common founding population. The fact that the allele was absent in other Asian populations probably means that America's ancestral founders had been isolated from the rest of Asia for thousands of years before they moved into the New World.

'While earlier studies have already supported this conclusion, what's different about our work is that it provides the first solid data that simply cannot be reconciled with multiple ancestral populations,' said Schroeder, who added that unlike many genetic studies that are based on mitochondrial DNA (passed from mother to daughter) or Y-chromosome DNA (passed from father to son), this study 'is the first definitive evidence we have that comes from DNA that is carried by both sexes.' •



**ABOVE** This world map shows some of the 53 Eurasian and New World populations whose DNA was sampled for this study. A distinct DNA signature was found among all but one of the populations shown as points 32 to 53 on this map. (The Fox tribe, point 48, was the exception, but DNA samples of only two Fox people were tested, too few to provide a valid result.) Further North, Central, and South American populations than those shown on this map have also been sampled and all have the 9-repeat allele at a high frequency. The signature was absent in all Asian groups sampled, points 1 to 32.

were also found, carved with inscriptions in the Luvian hieroglyphic script once used in city-states of Southern Anatolia and Northern Syria.

The central room beyond the porch had suffered an intense fire and was filled with heavily charred brick and wood, as well as a substantial quantity of carved ivory fragments and bronze (including riveted pieces) from furniture or wall fixings. Fragments of gold and silver foil were also found, along with the carved eye inlay from a human figure.

'Our ongoing excavations have not only begun to uncover extensive remains from the Dark Age, but the emerging archaeological picture also suggests that Tayinat continued to be the capital of a powerful Iron Age Kingdom controlling much of the North Orontes Valley and Western Syria during this period,' says Timothy Harrison, Professor of Near Eastern Archaeology at the University of Toronto and the director of the Tayinat

Archaeological Project (TAP) project. 'We may well learn more during this year's excavations when focus is on the northern section of the temple, where we believe there is an inner room, perhaps the temple's cells, or "holy of holies",' he added. •

**BELOW** The paved courtyard and stepped entrance to the 10th/9th century BC temple, with its carved column base.

