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## Introduction

Hello, and welcome to the February 2011 issue of DNA Tribes® Digest. This month’s feature article explores the genetic relationships of populations in the Horn of Africa. This region includes modern day Sudan and Somalia, located along the early trade routes linking the civilizations of Egypt, the Arabian Peninsula, the Indus Valley, and Mesopotamia.

Trade contacts between these distant lands facilitated the exchange of goods between neighboring peoples. However, more fundamentally, these peaceful contacts (many of them carried out by everyday merchants, tradesmen, scholars, and artisans) provided a basis for the continuation and development of civilization in the ancient world.

Best regards,  
Lucas Martin  
DNA Tribes

## The Horn of Africa World Region

### Historical Background

The Horn of Africa genetic region characterizes African populations near coasts of the Red Sea and Indian Ocean, including modern day Sudan and Somalia (see **Figure 1**). Since ancient times, this has been a trade hub along sea routes linking the civilizations of Africa, South Asia, and Mesopotamia. From approximately 2000 BCE, Sumerian records describe sea trade with *Dilmun* (possibly near the Persian Gulf), *Meluhha* (possibly the Indus Valley), and *Magan* (possibly Oman or Egypt). During the reign of Ashurbanipal more than a thousand years later, lands called *Magan* and *Meluhha* were described near Egypt and Ethiopia.



**Figure 1:** Landmarks near the Horn of Africa genetic region (highlighted). More information about the world regions currently identified by DNA Tribes® STR analysis is available at <http://dnatribes.com/populations.html>.

Egyptian sources describe contacts with the Land of Punt (*Pwenet*), associated with luxury goods such as gold, ivory, and exotic animals. An early text from around 2200 BCE known as the *Tale of the Shipwrecked Sailor* described a semi-mythical Land of Punt associated with fabulous wealth.

A later expedition to Punt under the Egyptian Queen Hatshepsut recorded contact with a King Parahu and Queen Ati, who sent valuable shipments of incense to Egypt.<sup>1</sup> However, the precise location of Punt is unknown, since Egyptian sources described its borders both to Egypt's north (suggesting the

<sup>1</sup> Information about recent archaeological discoveries in Marsa Gawasis, Egypt related to early voyages to Punt is available at [http://ww2.coastal.edu/cward/drward\\_publications.php](http://ww2.coastal.edu/cward/drward_publications.php).

Levant) and southeast (suggesting a Red Sea location). Less ambiguous is the location of ancient Nubia (near the Upper Nile in present day Sudan), famous in Egypt for its wealth in gold.

Early Biblical traditions also mention contacts with a Queen of Sheba, who journeyed from a kingdom near the Red Sea (possibly near present day Ethiopia or Yemen) to offer tribute to King Solomon of ancient Israel. Nearby at the Gulf of Aqaba (the ancient Aelanites Gulf), the port city of Eilat (near ancient Aila or Aelana) linked Red Sea trade routes with neighboring lands, which had included sites of perhaps the world's earliest large scale copper mines in the Timna Valley.

Archaeological digs near the ancient Timna copper mines have discovered ornate, wheel-made "Midianite" pottery types of foreign origin (also found in the northwestern Arabian Peninsula and Jezirat Faraun or Pharaoh's Island) alongside a simpler, hand-made pottery tradition, both dating to the 14<sup>th</sup>-12<sup>th</sup> centuries BCE. Also nearby are distinctive rock carvings showing ox drawn chariots, bow and arrow hunting scenes, and local ostriches.<sup>2</sup> In later Roman times, this area was home to the populous Nabataeans, living near territories formerly inhabited by semi-nomadic *Maranitae*<sup>3</sup> (recalling the *ashabi Madyana* or "comrades of Madyan" described in later Arab traditions).

Early Greek and Roman sources describe the Red Sea as the Erythraean Sea, named for the legendary king Erythras (meaning "Red"). Erythras was said to be a son of Perseus<sup>4</sup> whose burial mound was on the island Ogyris near Carmania (possibly modern Kerman).<sup>5</sup> However, the ancient "Erythraean Sea" was defined more broadly than the modern "Red Sea" and could include parts of the Indian Ocean and Persian Gulf. Nevertheless, this ancient term survives today in the name of modern Eritrea.

Another figure the ancient Greeks associated with these waterways was the legendary "Sesostris the Egyptian." According to the Greeks, Sesostris first expanded his territories south along the Red Sea coast and Aithiopia and then crossed Arabia to conquer "all of Asia."<sup>6</sup> Statues reputedly of Sesostris in Egypt were also associated with "Memnon of Aithiopia," said to have founded the Elamite-Persian city of Susa and trekked westwards to Anatolia and aided King Priam in the Trojan War. However, no such figure is corroborated in Egyptian accounts, and some of the "Colossi of Memnon" described by Greeks were in fact constructed under the Pharaoh Amenhotep III (the father of Akhenaten).<sup>7</sup>

Possibly related to ancient maritime trade routes of the Horn of Africa (and sometimes also thought to be related to South Asian cultures) was Ophir, mentioned in the Hebrew Bible as well as in Arab and Ethiopian traditions. These legends variously describe a king of Saba, Send, or Sarania named "Pharaoh," "Lophoron" or "Phar'an"<sup>8</sup> who conquered neighboring lands and built a city made of gold.

<sup>2</sup> See *Were These King Solomon's Mines? Excavations in the Timna Valley* by the excavating archaeologist Beno Rothenberg.

<sup>3</sup> See Strabo *Geography* 16.4.18 at [http://penelope.uchicago.edu/Thayer/E/Roman/Texts/Strabo/16D\\*.html](http://penelope.uchicago.edu/Thayer/E/Roman/Texts/Strabo/16D*.html).

<sup>4</sup> Greek tradition associated the House of Perseus with the founding dynasty of Mycenae (the Perseides) and with the Achaemenids of Persia. In legend, Perseus and his rival Phineus (both Danaan related) competed to marry the Ethiopian princess Andromeda. If based on real events, perhaps this legend recalled an early rivalry between Perseids and Punt or Phoenicians for a dynastic alliance linked to Erythraean Sea trade routes. According to Greek and Roman sources, the Phoenicians originally came to the Mediterranean from the Erythraean Sea and still maintained colonies there in the Classical period. See Herodotus *Histories* 1.1, 7.89; Strabo *Geography* 16.3.4.

<sup>5</sup> Strabo *Geography* book 16 ch. 3-4, at <http://penelope.uchicago.edu/Thayer/E/Roman/Texts/Strabo/home.html>.

<sup>6</sup> See Strabo *Geography* 16.4.4 at [http://penelope.uchicago.edu/Thayer/E/Roman/Texts/Strabo/16D\\*.html](http://penelope.uchicago.edu/Thayer/E/Roman/Texts/Strabo/16D*.html).

<sup>7</sup> Perhaps somehow related to these distorted Greek legends was the Hurrian (not Egyptian) king Shaushtatar, son of Parshatatar. Shaushtatar conquered Assyria and northern parts of Syria, but his son Artatama I established peaceful ties with Egypt and was possibly the grandfather of the Egyptian Pharaoh Amenhotep III.

Cultures living in the Horn of Africa today include the Afar people. The Afar speak a Cushitic language, part of the Afroasiatic family of languages that also includes ancient Egyptian, Berber, Hebrew, Phoenician, and Arabic. Another Cushitic speaking culture is the Beja people, who claim descent from ancestors dating to Pharaonic Egypt. Other modern cultures of the Horn of Africa include the Cushitic speaking Somali and Oromo peoples and the Semitic speaking Tigray and Amhara.

In addition, one of several islands near the Horn of Africa is Socotra. Early Greek writers (correctly or not) understood the name “Socotra” as *Dioskouridou*, a reference to the divine twins or Dioscuri that were associated with horses and navigation (similar to the South Asian Ashvins or “Sons of the Sea”). Socotra is home to several endemic plant and animal species and has been designated a UNESCO world natural heritage site. This rich ecology recalls the island of fabulous natural wealth imagined in the Egyptian *Tale of the Shipwrecked Sailor*. In keeping with ancient links to multiple continents that are typical of these waterways, Socotra represents an eclectic mixing of cultures from the Arabian Peninsula, Africa, and South Asia.

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<sup>8</sup> Similar names or titles appear in several early traditions near the Horn of Africa. The title “Pharaoh” (meaning “High House”) came into use as a name for the Egyptian ruler during the New Kingdom. A similar meaning has been proposed for the ancient name *Meluhha* (associated with Indus Valley trade routes), translated from Dravidian as “High Citadel.” See [http://www.harappa.com/arrow/meluhha\\_and\\_agastya\\_2009.pdf](http://www.harappa.com/arrow/meluhha_and_agastya_2009.pdf).

Similar sounding names or titles appear in several legends near the Horn of Africa including: *Parahu* (Egyptian), *Pheron* (Greek), *Ophir* (Hebrew), *Epher* (Hebrew), and *Saphir* (Ge’ez/Ethiopic). A possible link with ancient Ophir has also been suggested for the seafaring Paravar or Bharathar, a Tamil culture of southern India and Sri Lanka.



## Genetic Analysis of the Horn of Africa

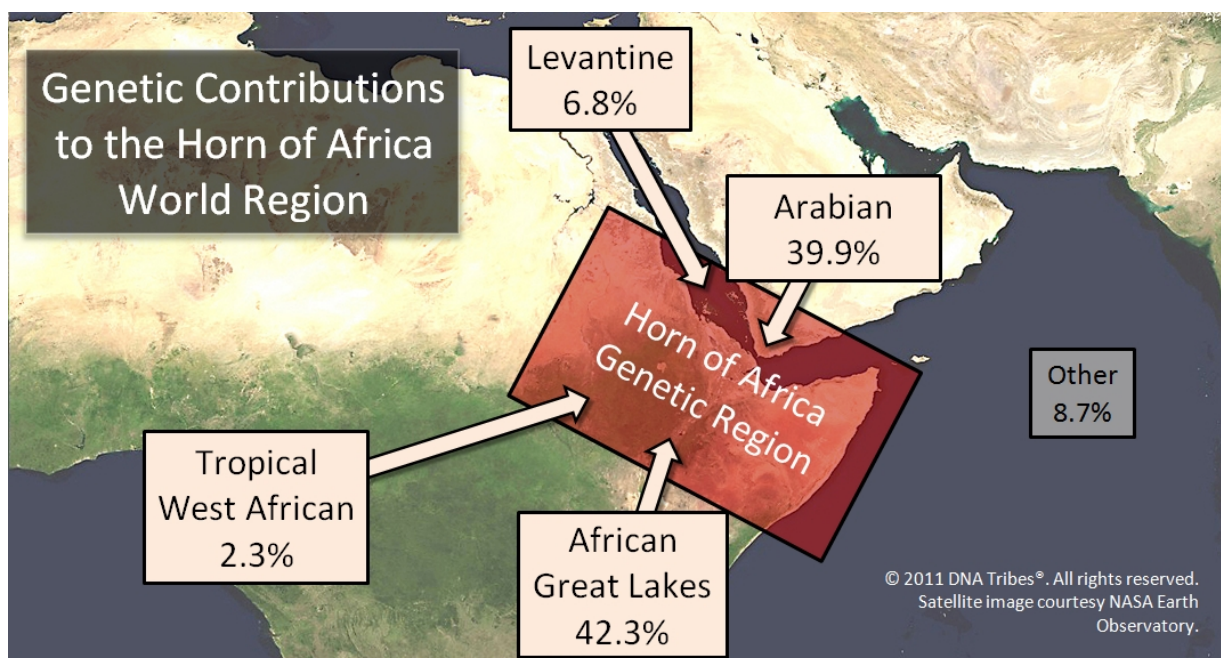
Genetic contributions to the Horn of Africa world region were identified based on DNA Tribes® autosomal STR analysis. Results are summarized in **Table 1** and illustrated in **Figure 2**.

World Region	Genetic Contribution
African Great Lakes	42.3%
Arabian	39.9%
Levantine	6.8%
Tropical West African	2.3%
Other	8.7%

**Table 1:** Genetic contributions to the Horn of Africa region.

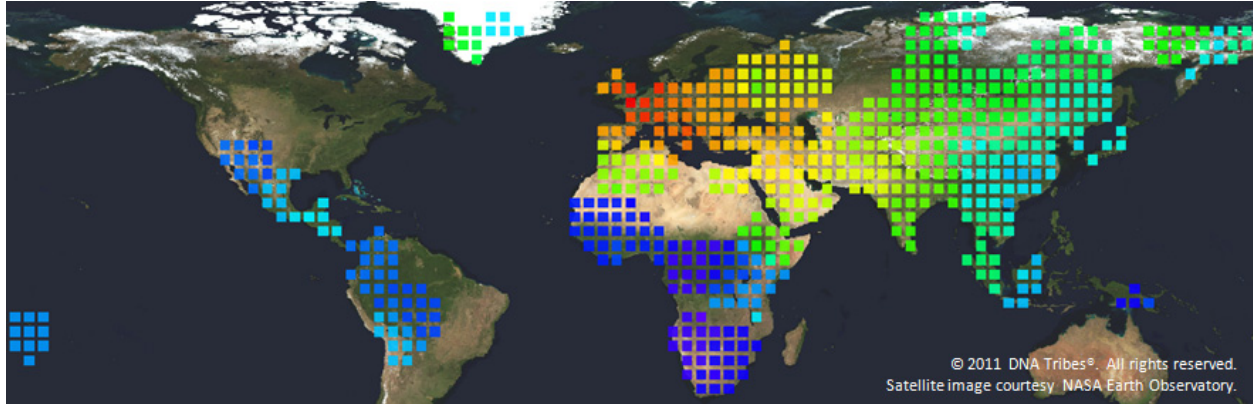
**Discussion:** Results indicate substantial contacts both with inland parts of Africa as well as with neighboring lands linked to the Horn of Africa by the Red Sea. The largest contribution identified was from the African Great Lakes region (42.3%). Together with the Tropical West African contribution (2.3%), this suggests substantial gene flow with neighboring African populations further south along the Great Rift Valley, linking populations of the Horn with the interior of the continent.

Results also indicate substantial contributions from the Arabian (39.9%) and Levantine (6.8%) regions. These genetic links recall the Red Sea trade routes that have linked populations of Africa, the Arabian Peninsula, and more distant lands of Mesopotamia and South Asia since ancient times.



**Figure 2:** Genetic contributions to the Horn of Africa world region.

## Introducing *DNA Tribes*® SNP Analysis



*DNA Tribes*® SNP is a geographical “deep ancestry” analysis that can be performed based on your genotype raw data from any of several SNP microarray tests. *DNA Tribes*® SNP reports include both admixture and total similarity comparisons of your DNA to world genetic structure.

DNA Tribes® proprietary SNP analysis contains several unique features to complement your prior SNP testing. More specifically, these features include:

- Exclusive *DNA Tribes*® SNP **admixture analysis** based on a proprietary multivariate statistical analysis of world genetic structure developed by DNA Tribes®.
- Exclusive *DNA Tribes*® SNP **world grid map** that illustrates the complete spectrum of your genetic similarity to all parts of the world in vivid color.
- **Detailed maps** ranking your total genetic similarity to populations around the world. These include specific population maps for: Africa, East Asia, Europe, the Middle East, Native Americans, North Asia, Oceania, and South Asia, as well as modern diasporic populations.
- Exclusive *DNA Tribes*® SNP **“Match” feature** that identifies populations where your DNA fits in a statistically significant manner. A SNP “Match” does not necessarily indicate your nationality or ethnicity, but does locate populations where your genotype could occur.

More information and sample reports are available at <http://www.dnatribes.com/snp.html>.