

## **Prehistoric Era, 90,000 BP to 5000 BCE: Human Migration Around the Indian Ocean**

### **How the Ocean Came to Be**

The Indian Ocean became an enclosed sea by the action of Continental Drift. This theory of earth's formation is also called Plate Tectonics. According to this theory, the landmasses that form the continents moved over millions of years of geologic time, as plates, or sections of earth's crust separated and pushed against each other. India, Australia, and Antarctica separated from the ancient super-continent called Gondwana and drifted toward their current locations. The Indonesian islands separated from the continent of Asia, and Madagascar drifted away from Africa. In the process, mountains were pushed up, like the Himalayas, and they are still rising, forming the highest peaks in the world. The Mediterranean and the Red Sea formed as the complex plates in what is today the Middle East shifted and collided. Earthquake zones are still active there today. Though these changes are still happening, continental drift is very slow, and major movements of the continents happened on a geologic timescale far longer than human history.

### **Changing Climate on Earth**

Climate change, in contrast, is on a shorter time scale. Change in earth's warming and cooling patterns has affected plants, animals, and human history a great deal. Ice ages and periods of warming have been traced through study of Antarctic ice cores, giving a picture of the past 400,000 years. During much of this period, temperatures were between 4 and 8 degrees cooler than today's average, but there were several major warming spikes. These changes made a big difference in earth's tropical zones, though they may seem small to us. Such changes affected rainfall, the extent of deserts and grasslands. They affected sea levels around the world, which fell as more water was locked up in polar ice caps and glaciers. This action exposed land that had been under water. Sea levels rose in periods of warming, creating islands where dry land had been. The picture of climate change over the past 70,000 years is a general trend of cooler temperatures than today. Since about 20,000 years ago, however, the climate has been warming significantly. At the Last Glacial Maximum (LGM), ice sheets during the last Ice Age reached their maximum size, then stayed at that size for several thousand years. Climate changes affected regions of the world where early human migration out of Africa began. It determined where forests and edible plants could grow, and where herds of large animals found rich grasslands. Plants, animals and human populations adapted, migrated, or died out during these periods.

### **Peopling the World**

The major event of the prehistoric era is the spread of human population to all of the continents. Over 160,000 years ago, modern human beings lived in Africa. Scientists no longer believe that many different populations emerged around the earth, since genetic similarities among all humans point to a common origin. Between 160,000 and 135,000 years ago, groups of people spread out in Africa. About 150,000 years ago, when the Sahara was

## Prehistoric Era, “Historical Overview”

greener, people moved up the Nile Valley and into the eastern Mediterranean. By 90,000 years ago, a cold climate phase had caused them to die out. Neanderthal humans probably migrated to this region later. Between 90,000 and 85,000 years ago, a group of people migrated from Africa into the Arabian Peninsula through the Bab al-Mandeb, which means “Gate of Grief.”

All present-day humans are thought to descend from this group. These people—identified today by the traces of their genetic relationships to current people—made their way along the Red Sea and crossed onto the Arabian Peninsula. From there, they moved across the Strait of Hormuz to Asia, tracing the shores of the Indian Ocean. Leaving behind shell middens, they moved slowly, generation after generation, until their descendants reached Southeast Asia and China. Sea level was lower then, and where the Indonesian islands are today was mostly dry land. By 65,000 years ago, people had crossed over a narrow waterway to Australia and New Guinea. Farther north, warmer climate around 60,000 to 50,000 years ago allowed people to migrate into Southwest Asia, populating the Fertile Crescent and southern Europe. By 25,000 years ago, people had migrated deep into Australia, and into Central and Northern Asia as far as Siberia. By about 20,000 years ago, people migrated into North America, across a land bridge that connected it with Asia at that time.

### **Beginning of Farming and Humans on the Sea**

Gradual warming after 20,000 B.P. (the LGM) meant important changes for Indian Ocean history. Sea levels were about 150-100 meters lower than today, but they rose, and by 8000 to 6000 B.P., areas that were dry became seas, such as the Arabian (Persian) Gulf. The weather became wetter, and the monsoon rains were intense. Seafood must have increased, along with edible plants. A somewhat drier period followed after 6000 BCE. Between 10,000 years ago and 6000 BCE, farming emerged in several places around the Indian Ocean. The earliest known sites are in Southwest Asia between the Nile and the Tigris-Euphrates Rivers—the Fertile Crescent, then the Indus Valley and Southeast Asia. Grains such as barley, wheat, and rice were early crops. Recent evidence points to New Guinea and some other islands as places where yams and bananas were cultivated. Fishing and gathering shellfish from the seacoast were early activities in or near the ocean that persist today. Migrations must have required boats or rafts to cross short stretches of water. Few indications have been found. During this time, people living near the sea became familiar with the patterns of wind and rain and the shift of seasons that would lead to experiments on the seas.