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Prehistoric migration and the rise of humanity

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The focus in this first volume of the *Encyclopedia of Global Human Migration* is on the founding, through migration, of the human world as we can reconstruct it at the dawn of written history. Using information from human biology, archaeology, and comparative linguistics (the latter discipline only available for societies within the past 10,000 years), the authors travel in time and space from the initial migrations of the incipient genus *Homo*, around two million years ago, to the relatively recent but still prehistoric migrations of populations such as the Eastern Polynesians and Thule Inuit. They introduce to us an enormous array of past human groups, both hunter-gatherer and agriculturalist. The prehistoric migrations of many of these populations were essential foundations for the ethnic and linguistic patterning that spanned the globe before 1500 CE, and indeed still does in many regions today.

In global terms, when was "prehistory," and when was "history"? In fact, there was no universal chronological divide. History began in many diverse times and places across the world as a result of the development of coherent historical recording, via the use of writing. This was a development of profound significance for humanity, but one that only occurred after 1500 CE in most regions. However, there were small pockets of more ancient scribal enterprise. Pictographic writing had commenced by 3000 BCE in the Middle East, including Mesopotamia, Egypt, and Pakistan, by 1500 BCE in China, and by 100 BCE amongst the Mayas of Mesoamerica. Coherent recording of history in a narrative sense usually followed long after the first appearance of any given ancient script, but occasionally the converse happened, as when putative historical events recorded in the Rigveda (Pakistan and northern India) or by Homer (Greece) were only recorded in writing long after they were created as recited epics. Even so, historical records were mostly confined to western Eurasia and China until around the birth of Christ, after which they became much more widespread across other regions of Eurasia and northern Africa, from Britain at one extreme to Indonesia at the other. But vast areas of Africa, northern Eurasia, Australasia, Oceania, and the Americas remained essentially prehistoric until European explorers intruded after 1492 CE.

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For this volume, the rather loose rule of thumb is that human migrations are included if their verifiable existence *does not* depend on historical records to any significant degree. Hence, migrant Eurasian populations such as the many Germanic and Turkic-speaking groups who invaded the declining Roman empire in the early Middle Ages are considered in the later historical volumes of the *Encyclopedia*. But we do consider Bantu speakers in Africa, the Thule Eskimos in the Canadian Arctic, Apache and Navajo speakers in the US Southwest, and the Eastern Polynesians, all of whom were still migrating when Gothic architects in Europe were busily designing their cathedrals and contemplating the development of the Renaissance. Indeed, many chapters in this volume refer on occasion to history from written records because there was, of course, no massive change in the evolution of human affairs just because something was written down.

In terms of the definition used for this volume, "migration" should be regarded as permanent translocation, rather than the kind of cyclical or seasonal movement engaged in by some groups of hunters, pastoralists, or shifting agriculturalists. Ancient migrants entered new territory and stayed there, or moved on further. In doing so, they found that new territories were either already inhabited, or devoid of other humans. It takes little imagination to understand that the consequences of migration would have been different in each of these cases. Previous inhabitants naturally demanded some kind of accommodation from incoming migrants, even if some situations were rather one-sided, whereas previously empty landscapes would have allowed a much freer rein for expansion where environments were suitable.

Migration in human prehistory

In terms of the overall course of human migration through time, the very first bipedal hominin (proto-human) migrants from Africa began to colonize tropical and temperate latitudes of Eurasia, as far as Indonesia and China, soon after two million years ago. *Homo sapiens* did the same from its African origins much later, within the past 100,000 years, and also traveled much further than its archaic forebears, across oceans and into very cold latitudes. Since 50 kya (see below for abbreviations), the Native Australians, Pacific Islanders, and Native Americans have been the most significant populations whose ancestors colonized uninhabited lands, only completing the process around 1300 CE in the case of the Eastern Polynesians. Most importantly, many of the tropical and temperate regions of the world have also witnessed extensive expansions and migrations of agricultural populations during the past 10,000 years, initially in many cases through landscapes already peopled much earlier by hunter-gatherers. These early farmer expansions were deeply involved in the initial dissemination of many of the world's largest language families, especially in Africa, Eurasia, and Oceania.

The great enemy for the prehistorian of ancient migration is time – the more of it, the less information that survives, and the greater become the chances of other migrations and expansions erasing the traces of the first-comers. We would have few coherent data on the origins and dispersals of the Indo-European-speaking peoples if archaeologists had not discovered the lost writings of the ancient Anatolians of Turkey and the

Tocharians of Xinjiang in western China. The immense historical migrations of Chinese southwards from the Yellow and Yangzi basins since 100 BCE erased many layers of linguistic history in southern China, especially those related to the remote ancestry and initial migrations of the modern Austronesian, Austroasiatic, and Tai-speaking peoples. But here again, historical and comparative linguistic records come to the rescue. Further back in time there were no such records, and sadly, not all episodes of past human migration will have left evidence behind. Luck has always been a major factor in the survival of evidence, but broad and multidisciplinary perspectives can sometimes winkle out remarkable, if almost erased, colonizing achievements from deep in time.

Differing perspectives and sources of data on prehistoric migration

This volume brings together essays by human biologists, archaeologists, and linguists, but it also keeps them separate from each other. The human past is best understood if authors are encouraged to present data and interpretations, in the first instance, from within their own disciplines. When this has been done, all can discuss how to compare the perspectives from each discipline in order to draw the most convincing inferences about the unfolding of the human past. This is how knowledge grows, with constant debate – and often dispute – between specialists, both within and between disciplines. Because the major disciplines operate independently of each other and with independent data sets, we can try to avoid the confusion that derives from circular reasoning if we keep their conclusions separate.

Some of the major reasons for disagreement within and between disciplines stem from the fact that most migrants in prehistory, except for the very first ones in each region, had to negotiate with, interbreed with, and/or fight with indigenous inhabitants. Because of this, we often find that the conclusions drawn from different disciplines do not always match each other very well, owing to the complications caused by such population mixing. For instance, humans can sometimes change their primary language without moving, in such a way that a language can migrate without a distinct human population in train. However, language shift of this type has generally been rather localized in recorded history, and it is more likely that humans moved together with their languages when the dispersals were on the scales of the major language families, whether associated with hunter-gatherers or farmers. In addition, with any coherent colonizing movement of a new population into a new territory, especially one that was previously uninhabited, we can expect that the pertinent records from biology, linguistics, and archaeology will match quite well. The situation obviously becomes more complex if dense indigenous populations were already in place.

Indeed, there is no guarantee that all the authors in this collection agree precisely on every point of past migration. Human prehistory offers very few significant situations in which one perspective is obviously the final one. Readers must make their own decisions about who is right or wrong, although there are very few cases of open opposition, mostly just faint glancing blows. Some of the chapters overlap a little in time and place content, but not extensively; this is also healthy since it can allow slightly different perspectives on a single situation to be presented.

Can we ever "understand" an ancient migration in anything but the vaguest terms? What really happened when humans crossed the Bering Strait land bridge from Siberia in freezing temperatures, about 15 thousand years ago, to face the enormous glaciers that still blocked much of the way into the Americas? How did they hunt and kill mammoths and other large mammals? Did they use boats to travel down the western coastline, eventually to reach South America? How did they survive under trying circumstances, not just the most able men and women, but also the geriatric and the very young? How did early Micronesians and Polynesians survive Pacific crossings of thousands of kilometers in small boats with no compasses or GPS technology? Alas, none of them carried notebooks or video cameras. None wrote history. In the chapters that follow, the individual or family migration "events" that must once have occurred in day-to-day prehistoric reality tend to be submerged within more generalized narratives, since the surviving data on ancient migrations are, by their very nature, more easily related to the activities of large populations through broad time spans than to those of single individuals on single journeys.

One way we can understand ancient migrations, at least to a comparative degree, is to examine the records of migrations by pre-urban populations in both the historical and the ethnographic records. The Greek historian Herodotus referred to the migration of the Scythians from their probable homeland in Iran, before 500 BCE, across the Araxes River and through the Caucasus Mountains into the northern littoral of the Black Sea. The Roman general Julius Caesar recorded in great detail the failed migration of the whole population of the Helvetii, with an immense baggage train, from Lake Geneva into the Rhone Valley of Celtic Gaul in 58 BCE (they failed because the Romans attacked them and turned them back). The Vandals, Goths, and Mongols were quintessential conquerors and would-be migrants, but let us not forget that the kind of far-flung conquest that these groups favored led to very little actual settlement on a permanent basis, and precious little linguistic or genetic replacement. Genghis Khan is reputed to have sired many children, but modern Eurasian populations throughout the regions that his armies conquered do not speak Mongolian, or even carry significant genetic influence from his 13th-century conquests. Migration, if it is to have serious consequences, must be backed up by substantial demographic growth by the immigrant population in the newly settled areas. In addition, it also helps if the numbers of migrants are greatly in excess of the numbers of natives and (unfortunately) if they can bring in diseases that will reduce those natives to small numbers, as happened so tragically in the New World after 1492 CE. In many medieval migrations in Africa and Eurasia, significant demographic superiority on the part of the conquerors simply did not develop, so absorption rather than domination was their ultimate linguistic and genetic fate. The Iberians and British after 1500 CE had things a little easier, because they were able to find in Australia and the Americas whole continents in which populations were often only lightly settled (especially in Australia), with indigenous populations who had very little resistance to Old World diseases.

The ethnographic and early colonial historical records also detail some quite significant examples of migration by tribal peoples. The rice-cultivating Iban of Sarawak and Brunei spread over 850 km through equatorial Borneo during the 19th century, opening up new rice fields along rivers and incorporating weaker indigenous groups

as they did so. The Nuer of Sudan spread across 75,000 sq km of territory in the upper Nile basin during the 19th century in the search for more cattle pasture, in the process invading and incorporating many of their Dinka neighbors, especially women and children. Bantu-speaking populations were also undertaking major expansion into South Africa just before the arrival of European colonists. Such expansions usually involved warfare and capture, so that conquered populations became incorporated genetically into the conquering groups on a large scale. After all, superiority in population numbers would always have mattered to any population that was trying to expand into new territory, and numbers could either be increased from within or captured from without. In the premodern world, many women and children captured from defeated groups may perhaps have preferred life in relative servitude amongst the conquerors than life in permanent refuge, for ever in fear of fresh attack.

Important definitions and abbreviations used in this volume

In all following chapters, the abbreviations *mya* and *kya* are used for millions and thousands of years ago, respectively, until the past few thousand years, when we switch to the use of BCE (before Common Era, replacing BC meaning "before Christ") and CE (Common Era, replacing *anno domini*, or AD in Latin – in the year of the lord). Chronology is always "calibrated," in the sense that the radiocarbon dates that form the backbone of the archaeological chronology for the past 40,000 years are calibrated against real solar time by the dating of annual growth rings counted backwards from the present in overlapping series of ancient trees. Other dating methods, such as palaeomagnetism, optical luminescence, potassium-argon, electron spin resonance and uranium series are significant mainly for the Pleistocene, before 12 kya, and technical descriptions should be sought in archaeological textbooks.

The Pleistocene epoch of geological time, within which all major human biological evolution described in this *Encyclopaedia* took place, has three biostratigraphic divisions of unequal length:

1 Early or Lower Pleistocene (2.58–0.8 mya);
2 Middle Pleistocene (0.8 mya–125 kya, marine isotope stages 20 to 6 in Figure 2.2);
3 Late or Upper Pleistocene (125–12 kya, marine isotope stages 5 to 2).

The Pleistocene is followed by the Holocene (marine isotope stage 1 in Figure 2.2), that commenced about 11,650 years ago (c. 9500 BCE) with dramatic warming after the Younger Dryas mini-glaciation that marked the end of the Pleistocene. The Holocene is essentially the period marked by the world climatic pattern that still exists today.

The Middle and Late Pleistocene witnessed the most severe of the Ice Ages, swinging through 100-millennium cycles from extreme glacial drought and cold into warm wet interglacial conditions like those of the Holocene, then back into glaciation again. The Pleistocene glaciations were periods of low sea level across the world, down to as much as 130 m below the present level at glacial maxima, giving rise to land bridges across

exposed continental shelves. Climatic slides into glacials were fairly gradual, although bumpy, but ameliorations into interglacials were extremely rapid. Hence the incredible growth in the rate of cultural complexity since the world swung back dramatically from the last glacial maximum, at 24-18 kya, into the present Holocene interglacial, with temperatures slightly warmer than today attained in some regions by about 10 kya. Unfortunately, many scientists believe we are now extending the Holocene interglacial beyond its current time span of 11,500 years by uncontrolled global warming. In the future, as deserts expand, as permafrost and glaciers melt, and as sea levels rise further, we can perhaps look forward to lots more human migration.