

Hunter Gatherers to Agriculture

Dr D.M. Suratissa



Agriculture did not start suddenly. It came to practice after several million years ago through human evolution and transition of culture and technology. The transition to agriculture has always been hard to explain. Why should have people given up an enjoyable lifestyle and a varied diet and adopted lifestyles and diets which were often very tedious and limited? In the words of Mark Nathan Cohen “the adoption of agriculture probably resulted in an increased per-capita work load and a decline in the quality of the diet”.

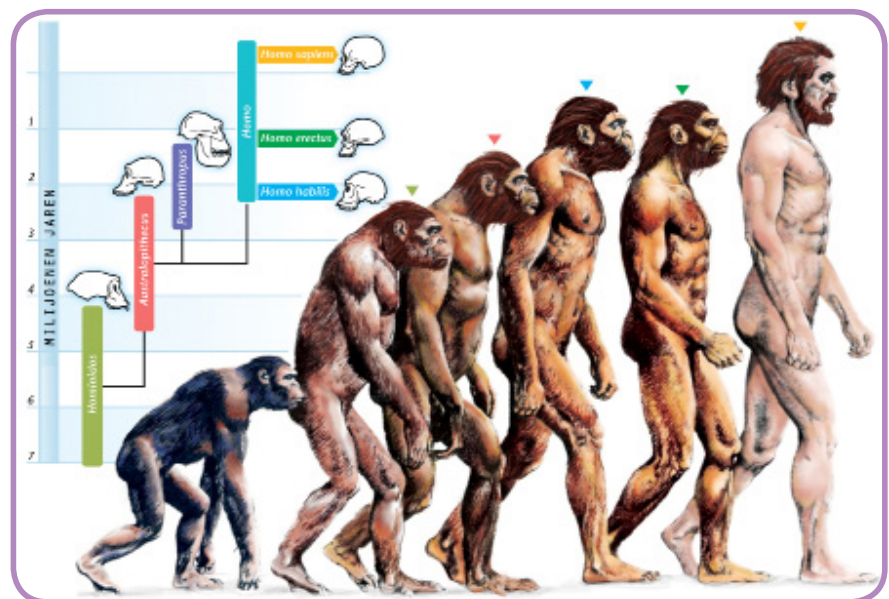
Pre-agricultural peoples had a varied diet and their food-gathering activities must have often been satisfying for their own sake. The “hunter-gatherers” were after all, using their mental and physical resources for the purposes for which they were intended by nature. Their lives were sometimes short, but they were probably happy. By contrast agriculture, particularly before the employment of draft animals, involved a great deal of mechanical back-breaking toil. Food preparation was hard work too, given that cereals had to be ground by hand. And the

final result for most people was a monotonous staple diet and not much else. Why did people adopt agriculture? It was to come from first to last as hunter gatherers, horticulturalists, pastoralists, and to intensive agriculturalists. Before we get into the topic, first of all we should understand briefly about human evolution and special features of their eras.

History of Evolution of man

Human evolution is part of biological evolution concerning the emergence of humans as a distinct

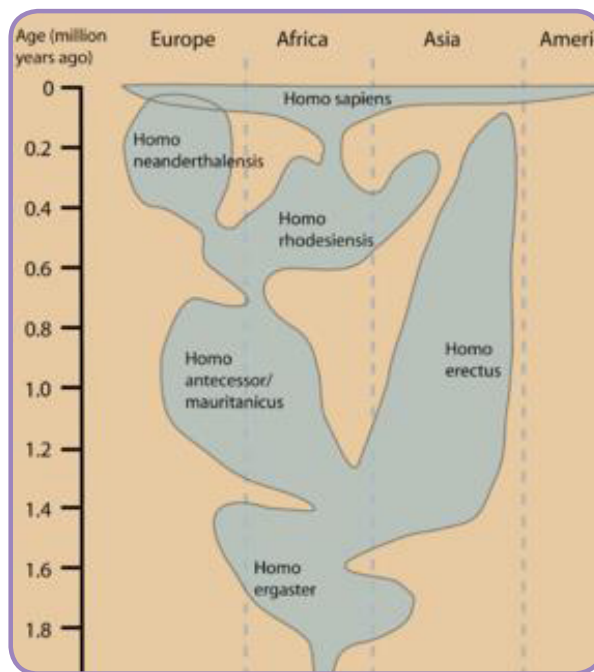
species from other primates. It is the subject of a broad scientific inquiry that seeks to understand and describe how this change occurred. The evolutionary history of the primates can be traced back to some 85 - 65 million years, as one of the oldest of all surviving placental mammal groups. The oldest known primates came from North America, but they were widespread in Eurasia and Africa as well, during the tropical conditions of the Paleocene and Eocene. It is generally agreed that the earliest primate may have emerged by the paleocene, 65 – 55 MYA, and perhaps earlier in the late cretaceous.



The origin of Culture and emergence of Homo

Making stone tools, is considered one sign of the emergence of a culture. Tool making was associated with expansion of brain, modification of female pelvic to accommodate bigger-brained babies, and reduction in the teeth, face, and jaws. But some sites available with stone tools were dated back Australopithecus period. The australopithecines are now thought to be immediate ancestors of the genus *Homo*, the group to which modern humans belong. Both australopithecines and *Homo sapiens* are part of the tribe *Homini*, but recent data has brought into doubt the position of *A. africanus* as a direct ancestor of modern humans; it may well have been a dead-end cousin. *H. habilis* lived from about 2.4 to 1.4 million years ago (mya). *H. habilis*, the first species of the genus *Homo*, evolved in South and East Africa in the late Pliocene or early Pleistocene, 2.5–2 mya, when it diverged from the Australopithecines. *H. habilis* had smaller molars and larger brains than the Australopithecines, and made tools from stone and perhaps animal bones. One of the first known hominids, was nicknamed 'handy man' by its discoverer, Louis Leakey. *H. erectus* lived from about 1.8 mya to 70,000 years ago. Often the early phase, from 1.8 to 1.25 mya, is considered to be a separate species, *H. ergaster*, or it is seen as a subspecies of *erectus*, *Homo erectus ergaster*.

H. erectus was the first human ancestor to walk truly upright. This was made possible by the evolution of locking knees and a different location of the foramen magnum (the hole in the skull where the spine enters). They may have used fire to cook their meat. A famous example of *Homo erectus* is Peking Man; others were found in Asia (notably in Indonesia), Africa, and Europe.



H. neanderthalensis lived from about 250,000 to as recent as 30,000 years ago. Also they are proposed as *Homo sapiens neanderthalensis*. *Homo sapiens* have lived from about 250,000 years ago to the present. Between 400,000 years ago and the second interglacial period in the Middle Pleistocene, around 250,000 years ago, the trend in cranial expansion and the elaboration of stone tool technologies developed, providing evidence for a transition from *H. erectus* to *H. sapiens*. Hunters who lived in this period can be named as Paleolithic age.

What does the Paleolithic Age mean?

The cultural period of the Stone Age that began about 2.5 to 2 million years ago, was marked by the earliest use of tools made of chipped stone. The Paleolithic Period ended at different times in different parts of the world, generally around 10,000 years ago in Europe and the Middle East. Also called Old Stone Age.

Where was the Paleolithic era?

It extended from the earliest known use of stone tools, probably by *Homo habilis* initially, 2.6 million years ago, to the end of the Pleistocene around 10,000 BP. The Paleolithic era was followed by the Mesolithic.

Why is the Paleolithic age important?

The Paleolithic Era is significant because people established the process of hunting-gathering, which has supported humans for the majority of their existence on earth. The Paleolithic Era also involved the development of simple tools, including the hand axe, and tool-making industries.

How did people live in Paleolithic?

They hunted animals, caught fish, ate insects, and gathered nuts, berries, fruits, grains and plants. They were always on the move because they did not have fixed homes.

Why were the people during the Paleolithic era nomads?

Palaeolithic people lived in temporary shelters like tents or caves because they were nomads. A nomad is a person who does not have a permanent home and moves around a lot. Paleolithic people were nomads because they moved around to follow their food sources.

A hunter-gatherer is a human living in a society in which most or all food was obtained by foraging (collecting wild plants and pursuing wild animals), in contrast to agricultural societies, which relied mainly on domesticated species.

Palaeolithic and Way of Life of *Homo species*

The economy of a typical Paleolithic society was a hunter-gatherer economy. Paleolithic humans hunted wild animals for meat and gathered food, firewood, and materials for their tools, clothes, or shelters. The human population density in the Paleolithic was very small and numbered around only one person per square mile. At the end of the Paleolithic specifically the Middle and or Upper Paleolithic, humans began

Paleolithic (Stone Age) Lower Paleolithic

Lower Paleolithic

Homo

Control of fire, Stone tools

Middle Paleolithic

Homo neanderthalensis

Homo sapiens

Upper Paleolithic, Late Stone Age

Behavioral modernity, Started dog Domestication

Mesolithic

Microliths

Bow

Canoes

Neolithic

Pre-Pottery Neolithic

Farming

Animal husbandry

Polished Stone tools

Pottery Neolithic

Pottery

to produce works of art such as cave paintings, rock art and jewelry, and began to engage in religious behavior such as burial and ritual activities.

Lower Palaeolithic

The Lower Paleolithic is the earliest

subdivision of the Paleolithic or Old Stone Age. It spans the time from around 2.5 million years ago when the first evidence of craft and use of stone tools by hominids appears in the current archaeological record. *Homo habilis* remains, such as those from Olduvai Gorge, are much more recognizable as humans. Stone-tool use was developed by these people around 2.5 million years ago before they were replaced by *Homo erectus* about 1.5 million years ago. Members of *Homo habilis* used Oldowan tools and had learned to control fire to support the hunter-gatherer method of subsistence.

Middle Palaeolithic

The Middle Paleolithic (or Middle Palaeolithic) is the second subdivision of the Paleolithic or Old Stone Age as it is understood in Europe, Africa and Asia. The Middle Paleolithic and the Middle Stone Age broadly spanned from 300,000 to 30,000 years ago. There are considerable dating differences between regions. The Middle Paleolithic/Middle Stone Age was succeeded by the Upper Paleolithic subdivision which first began around 50,000, 45,000 or 40,000 years ago. During this time





period *Homo neanderthalensis* thrived in Europe between 300,000 and 30,000 years ago, and the earliest anatomically modern humans appeared around 195,000 years ago. Paleolithic groups such as the Neanderthals who possessed a Middle Paleolithic level of technology appear to have hunted large game just as well as Upper Paleolithic modern humans and the Neanderthals in particular may have likewise hunted with projectile weapons. Nonetheless Neanderthal usage of projectile weapons in hunting occurred very rarely (or perhaps never) and the

Neanderthals hunted large game animals mostly by ambushing them and attacking them with weapons such as thrusting spears rather than attacking them from a distance with projectile weapons

Also the use of fire became widespread for the first time in human prehistory during the Middle Paleolithic and humans began to cook their food during the early Middle Paleolithic (c.250,000 years ago). Some scientists have hypothesized that Hominids began cooking food to defrost frozen meat which would help ensure

their survival in cold regions. Gathering and hunting comprised most of the food supply during the Middle Paleolithic, and people began to supplement their diet with seafood and began smoking and drying meat to preserve and store it. Cannibalism in the Middle Paleolithic may have occurred because of food shortages. However it is also possible that Middle Paleolithic cannibalism occurred for religious reasons which would coincide with the development of religious practices thought to have occurred during the Upper Paleolithic.



Upper Palaeolithic

The Upper Paleolithic is the third and last subdivision of the Paleolithic or Old Stone Age as it is understood in Europe, Africa and Asia. Very broadly it dates to between 40,000 and 10,000 years ago, roughly coinciding with the appearance of “high” culture (behavioral modernity) and before the advent of agriculture. Modern humans (i.e. *Homo sapiens sapiens*) are believed to have emerged at least 130,000 years ago in Africa. Though, these humans were modern in anatomy, their lifestyle changed very little from their contemporaries such as *Homo erectus* and the Neanderthals.



After 50,000 years ago, firstly in Africa, it was found that he could easily sort the human artifacts into many different categories, such as projectile points, engraving tools, knife blades, and drilling and piercing tools. These new stone tool types have been described as being distinctly differentiated from each other as if each tool had a specific name. 3000 to 4000 years later this technology spread to Europe resulting in a population explosion of modern humans and also the extinction of the Neanderthals.

The invaders commonly referred to as the Cro-Magnons left many sophisticated stone tools, cave art and Venus figurines. This shift from Middle to Upper Paleolithic is called the

Upper Paleolithic Revolution. The Neanderthals continued to use Mousterian stone tool technology. The earliest remains of organized settlements in the form of

However, there is little direct evidence of the relative proportions of plant and animal foods in the diets of Paleolithic humans.

According to some anthropologists and advocates of the modern Paleolithic diet, Paleolithic hunter-gatherers consumed a significant amount of meat and possibly obtained the majority of their food from hunting. However, the relative proportions of plant and animal foods in the diets of Paleolithic peoples probably varied between regions (for instance Paleolithic hunter gatherers in



tropical regions such as Africa probably consumed a plant based diet while by contrast, Paleolithic populations in colder regions such as Northern Europe most likely obtained the majority of their food from meat).

campsites, some with storage pits, are encountered in this period. These were often located in narrow valley bottoms, possibly in order to make hunting passing herds of animals easier. Some sites may have been occupied year round though more generally they seem to have been used seasonally with people moving between them to exploit different food sources at different times of the year. Advanced darts and harpoons also appear in this period, along with the fish hook, the oil lamp, rope, and the eyed needle. Artistic work also blossomed with Venus figurines, cave painting, petroglyphs and exotic raw materials found far from their sources suggest emergent trading links.

Diet of Palaeolithic People

The diet of the Paleolithic hunting and gathering peoples consisted primarily of meat, fish, shellfish, leafy vegetables, fruit, nuts and insects in varying proportions.

tropical regions such as Africa probably consumed a plant based diet while by contrast, Paleolithic populations in colder regions such as Northern Europe most likely obtained the majority of their food from meat).

Mesolithic

The Mesolithic or Middle Stone Age was a period in the development of human technology in between the Paleolithic or Old Stone Age and the Neolithic or New Stone Age. Mesolithic adaptations are cited as of relevance to the question of the transition to agriculture, including sedentism, population size and plant foods.

These people made microlith, which is a small stone tool, typically knapped of flint or chert, usually about three centimetres or less long they are typically one centimetre long and half a centimetre wide when finished. Microliths were produced during the middle stone

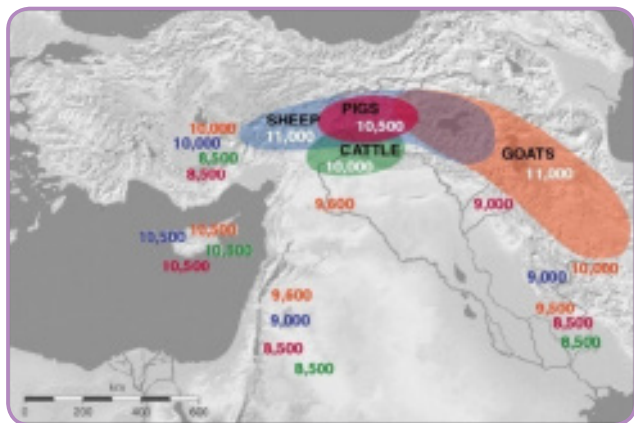
Neolithic Revolution
The Neolithic Revolution was the first agricultural revolution—the transition from hunting and gathering communities and bands, to agriculture and settlement. Archaeological data indicate that various forms of domestication of plants and animals arose independently in at least 7-8 separate locales worldwide, with the earliest known developments taking place in the Middle East around 10,000 BCE or earlier



age (Mesolithic) (from the end of the Ice Age (about 9200BC) until the introduction of agriculture (8000BC)). Some types of microliths, such as trapezes, were used in the Neolithic as well. They were probably used as barbs on arrows, spears and other composite tools. Microliths are found throughout Europe and Asia.

Neolithic Period

The Neolithic or “New” Stone Age, was a period in the development of



human technology beginning about 10,000 B.C. in the Middle East that is traditionally the last part of the Stone Age. The Neolithic era follows the terminal Holocene Epipalaeolithic periods, beginning with the rise of farming, which produced the “Neolithic Revolution” and ending when metal tools became widespread in the Copper Age (chalcolithic) or Bronze Age or developing directly into the Iron Age, depending on geographical region.

Neolithic culture appeared in the Levant (Jericho, modern-day West Bank) about 8500 BC. It developed directly from the Epipaleolithic Natufian culture in the region, whose people pioneered wild cereal use, which then evolved into true farming. The Natufians can thus be called “proto-Neolithic” (11,000–8500 BC). As the Natufians had become dependent on wild cereals in their diet, and a sedentary way of life had begun among them, the climatic changes associated with the Younger Dryas are thought to have forced people to develop farming. By 8500–8000 BC farming communities

arose in the Levant and spread to Asia Minor, North Africa and North Mesopotamia. Early Neolithic farming was limited to a narrow range of crops, both wild and domesticated, which

included einkorn wheat, millet and spelt and the keeping of dogs, sheep and goats. By about 7000 BC it included domesticated cattle and pigs, the establishment of permanently or seasonally



inhabited settlements, and the use of pottery. Not all of these cultural elements characteristic of the Neolithic appeared everywhere in the same order: the earliest farming societies in the Near East did not use pottery, and, in Britain, it remains unclear to what extent plants were domesticated in the earliest Neolithic, or even whether permanently settled communities existed. In other parts of the world, such as Africa, South Asia and Southeast Asia, independent domestication events led to their own regionally-distinctive Neolithic cultures that arose completely independent of those in Europe and Southwest Asia.

Present Day Hunter Gatherers

Food collection may be generally defined as all forms of subsistence technology in which food-getting





is dependent on naturally occurring resources that is wild plants and animals. A few remaining food collectors in the world today, also referred to as foragers or hunter gatherers, live in what have been called the marginal areas of the earth-deserts, the arctic, and dense tropical forests- habitats that do not allow easy exploitation by modern agricultural technologies. Two groups of present day hunter – gatherers are living in Australia and Aleska, Australian Arboragins – Ngatatjara and Eskimos.

Domestication/ Food production

This began about 10,000 Years ago with cultivation, and then with domesticated plants and animals. There were three types of food producers; Horticulturalists, Pastoralists, and Intensive Agriculturalists

Horticulturalists

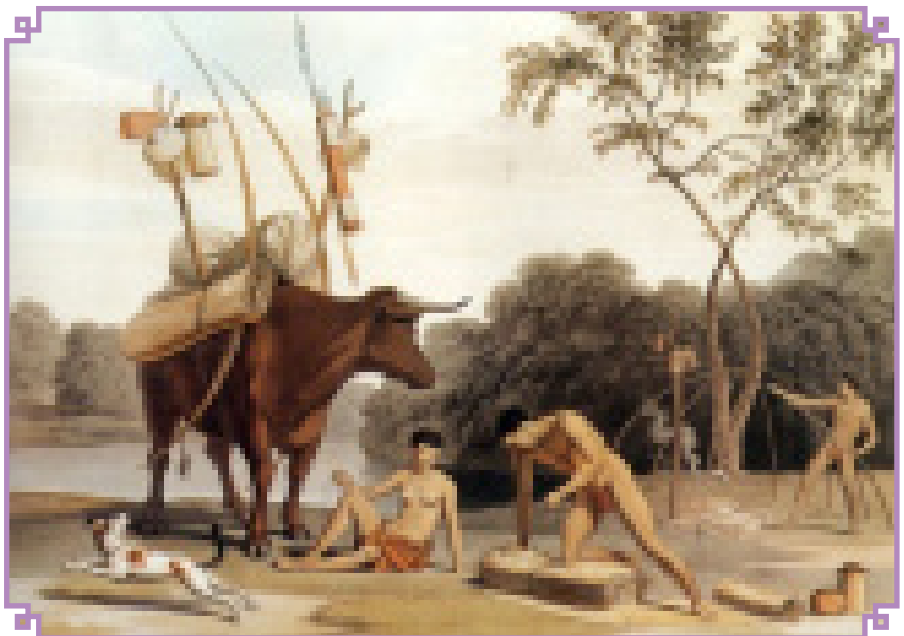
During this period we have archaeological evidences of growing of crops of all kinds with relatively simple tools and methods,

in the absence of permanently cultivated fields. Tools were usually hand tools (Digging Stride or Hoe). No fertilization, irrigation or other was used for restoring soil fertility after the growing season. There were two types: Extensive/ Shifting (Slash and burn technique), and long growing tree crops. They were not depending only on crops, hunting and fishing were also practiced. These people were mostly nomadic. They live in one place for around three months.

i.e. Kayapo- Brazilian Amazon. Some horticulturalists raised small domestic animals. The Yanomamo and Samoans can be considered as the present day Horticulturalists in the world. Yanomamo crops do not provide much protein, so hunting and fishing are important to their diet. Samoans mostly planted three crops for long term food production. i.e. Breadfruit, coconut, banana. Samoans also practiced some shifting cultivation too.

Pastoralists

Most agriculturalists raise animals (practice animal husbandry), but a small number of societies depend directly or indirectly on domesticated herds of animals for their living- called pastoralism. We might assume that pastoralists breed animals to eat their meat, but most do not. Pastoralists more often get their animal protein from live animals in the form of milk, and some take as blood (Secondary consumption). Herds also indirectly provide food because they trade



animal products for plant foods and other necessities. The Basseri - Southern Iran and Lapps – Scandinavia can be considered as a present day pastoralists.

Intensive Agriculturalists

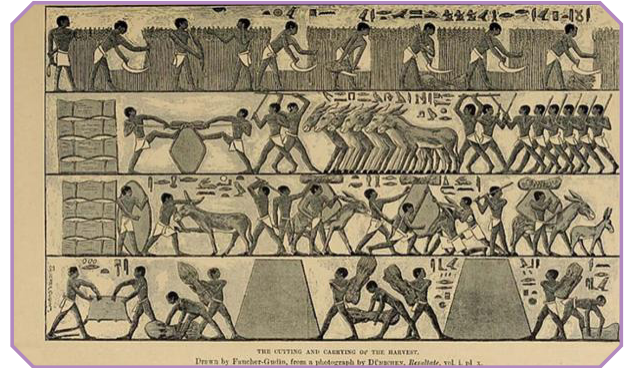
Intensive agriculture was started around 10,000 years before the present day Tribal societies with 100s of people in villages. When this type of agricultural practicing increased, human population also increased larger and larger communities and new social organizations. They did mixed hunting with harvesting of wild wheat and barley. During this

period they had a knowledge of storage, planting, and seed selection, and hunting decreased.

First Centres of Food Productions

According to archaeological evidence, three independent centres were identified.

1. Domestication of plants and animals began in the Fertile Crescent of South-western Asia (today northern Iraq and parts of Syria, Lebanon, Israel, the West



Bank, Jordan and Turkey) some 10,000 - 11,000 years ago (perhaps 8,500 BCE).

2. Yangtze River Basin
3. Yellow River (Huang He) Basin

Evidences in Sri Lankan domestication

According to excavations done by Dr.Premathilake at Horton Plain region, incipient domestication in Sri Lanka had been identified during the period 15,000 years ago by the presence of pollen of Barley, Millet and some other cereals used for feeding domestic animals. Therefore, if we can establish this in several places in Sri Lanka, our country can also be considered as one of the independent centres of domestication in the world.



Dr D.M. Suratissa
282, Sudarshana Mawatha,
New Kandy Rd,
Malabe
0724258715

