Lesson N°02 : Prehistoric times

It is impossible to know a science without knowing its history. Internal factors (experiments, discoveries, observations, demonstrations, knowledge, etc.) and external factors (politics, philosophy, economic power, etc.) have all contributed to the evolution of the history of science.

1. Prehistory

Is generally defined as the period between the appearance of humanity (2.5 million BC) and the appearance of writing. The sciences that have contributed to providing evidence of this period are **archaeology**, **anthropology**, excavation (fossils, paintings.....) and molecular biology (DNA). Prehistory is divided into different periods characterized by particular techniques [**5**] :

A- Paleolithic period

This term derives from the Greek ***palaios***: **ancient** and / ***lithos*** (**stone**). This period is characterized by the technique of sculpted stone, and represents the oldest and longest period of prehistory (5 to 6 million years). Humans were unaware of agriculture and animal husbandry, and lived a nomadic lifestyle based on collecting and killing. Among the techniques developed during the Paleolithic period were the domestication of fire, the manufacture of clothing and containers from animal skins, and the production of hunting tools and canoes [**6**].

Early prehistoric humans lived naked in the nature. Like many animals, they sleep at night in a cave, a refuge. They never set up camp too far from a pond or river to drink, and always spent a lot of time in search of food: wild fruits, roots, the meat of dead animals or small animals they had captured. They also defend themselves from large carnivores that chase them to eat them [**6**].

B- Neolithic period

Is a prehistoric period characterised by major technical, economic and social transformations, due to the adoption by human groups of a subsistence mode based on agriculture and animal husbandry., and usually involving sedentarization [**7**].

2. Origins of contemporary Biology

These origins begin with an inventory (examination) of the plants and animals present on historical remains (engraved rocks, clay ceramics, frescoes, etc.). These can be grouped into two categories [**8**] :

A- Prehistoric data related to the animal world

Prehistoric Paleolithic man was able to observe and represent animals that no longer exist today: walking or running, in a hunting posture, fighting.

Neolithic man practiced stone polishing and also became an animal farmer.

B- Prehistoric data related to the plant world

- Prehistoric man used plants for a variety of purposes because plants:

→ Constitute a source of alimentation (food).

→ Have secret therapeutic properties

- Man became a cultivator of plants in the Neolithic period.

3. The main types of human

It's generally acknowledged that there have been 4 main types of human (there are others) up to the present day. Even if we are genetically very close to certain apes (+ or - 99% common DNA with the chimpanzee), the evolutionary differences with our "cousins" are enormous: bipedalism, increasingly precise tool manufacture, control of fire, speaking... the list is very long [**9**].

The first hominids appeared in Africa 7 million years ago. The study of fossils shows a progressive evolution into the *Homo* genus, localized in Africa, with *Homo habilis* then *Homo ergaster* (craftsman) who, appearing almost 2 Ma ago, ventured as far as Asia [**9**].

Homo sapiens has physical characteristics identical to our own. The further we go back in time, the more numerous, varied and precise the traces become. If we have a lot of traces, we can answer a lot of questions. The first appearance of sapiens traits (learned man) was between 500 and 200,000 years ago in Africa, and around 100,000 years ago in the Middle East and Asia; while Cro-Magnon Man appeared in Europe 40,000 years ago. The anatomy of the human species 40,000 to 90,000 years ago is indistinguishable from our own [**10**].

4. The lifestyle of humans at that time

A. These men look like us : 40,000 years ago, they were sculpting stone or wood. They could not yet write, but they could speak and bury their dead. They made axes for chopping wood, spear points for hunting, sharp scrapers for scraping animal skins, sharp flints for piercing leather or bone, crochet hooks for fishing, clothing, tents and huts, containers [**4**].

B. **Producing food** : 10,000 years ago, our ancestors made an important discovery: they harvested wheat and barley they had sown themselves, and farmed goats and sheep. For the

first time, humans produced part of their own food. Gradually, in all inhabited lands, experiments multiplied [**4**].

C. **Living in a village** : chasing game requires a lot of time and energy. By becoming farmers, men settle down and multiply their innovations. They build houses for their families, schools for their herds. They spun the sheep's wool. They drank sheep's milk. They made their first potteries from earth. They hammered copper and gold and invented metallurgy. In the villages, life became organized [**4**].