III. THE PALAEOLITHIC AND MESOLITHIC
INTRODUCTION
Katalin T. Biró

The Old Stone Age, or Palaeolithic, to use a word borrowed from Greek, was the longest period in human history. The various disciplines dealing with human evolution associate the beginning of the Palaeolithic with different events. From an archaeological point of view, the decisive factor is the human manipulation of the environment and tool making, whose traces can be identified on excavations.

The chronological framework of the Palaeolithic is provided by the Ice Age (Fig. 1). Several glacial can be distinguished in geohistory; their cause can usually be associated with astronomical events. The current Ice Age began about 2 million years ago. The Palaeolithic saw the alternation of cold (glacial) and warm (interglacial) periods. Short climatic oscillations (called stadials and interstadials), often lasting for several hundred years, can be observed within longer glacial. At present we are living in a period of warming, whose onset – about ten thousand years ago – marked the end of the Palaeolithic.

Several processes leading to the emergence of man date to the Palaeolithic: the evolution of man in the biological sense, the development of speech and conceptual thought, as well as the appearance of tools. The people of the Lower Palaeolithic were familiar with fire, as shown by the almost half a million year old hearths at Vértesszőlős. The burials of the Middle Palaeolithic reflect a belief in an afterworld – the remains of Neanderthal man found in the Subalyuk Cave are perhaps all that survived of a burial. There is little either in biological appearance or in thought to distinguish Upper Palaeolithic man from his modern contemporaries. Aside from anthropological analyses, this is also evidenced by Upper Palaeolithic art, such as cave paintings and small sculpture, many of which continue to fascinate modern artists. Our ancestors were by no means primitive brutes; they were creative and resourceful men and women, who struggled hard for survival and coped admirably in a world that was much harsher than our own.

Hungary is not particularly rich in the finds of this period. As far as we know, the Carpathian Basin was not continuously occupied, with population groups appearing in successive waves, especially in the warm periods.

Fig. 1. Chronology. The phases of the Ice Age and the most important Palaeolithic cultures in Hungary
It was for a long time believed that Palaeolithic man had never settled in Hungary, the main argument being that this region had been unsuitable for settlement in the Ice Age. Ottó Herman was the first to challenge this view within the academic community with evidence to contrary. He was followed by the palaeontologist Ottokár Kadić who, during his excavations in the Szeleta Cave, uncovered a find assemblage in an unambiguous stratigraphical position together with characteristic Ice Age fauna. His findings finally resolved the debate on the existence of the Palaeolithic in Hungary. The contribution of geologists, palaeontologists and other specialists of the earth sciences to this field of research was decisive, especially in the early period of research. Palaeolithic studies would be unimaginable without a close co-operation with specialists working in related disciplines, primarily scholars studying the fauna, the flora, the climate and the environment of the Quaternary. The sites investigated using archaeological methods usually yield an impressive source material for their own studies.

The lack of continuously occupied sites and the scarcity of finds is only relative. Even the territories that are extremely rich in Palaeolithic sites lack continuous layer sequences. Some of the key sites of this period, such as Vértesszõlõs from the Lower Palaeolithic, Érd and Tata from the Middle Palaeolithic, have been unearthed in Hungary. The campsites of Upper Palaeolithic hunters on river terraces offer an excellent opportunity to study the settlement patterns of the period. Recent research has confirmed earlier assumptions that the population of the transitional period at the close of the Ice Age (called the Mesolithic) played an important role in mediating the innovations of a production economy towards the northern and western regions of Europe.

**VÉRTESSZŐLŐS: THE FIRST PEOPLE IN HUNGARY**

Viola T. Dobosi

Vértesszõlõs is a small village between Tata and Tata-bánya at the foot of the Gerecse Hills. Although difficult to pronounce for non-Hungarians, the name of the village became a household word in the scholarly community in the 1960s owing to a major archaeological discovery made here.

Palaeontologists often visited the quarry opened on the outskirts of the village from the early 1900s. The quarry was a rich source of 4–500 thousand years old animal bones; splendid leaf imprints were also collected from the calcareous tuff from the end of the 1950s. The sensational archaeological finds remained concealed until 1962. The excavation of the site was conducted by László Vértes between 1963 and 1968. Vértesszõlõs remains the single authentic Lower Palaeolithic site in Hungary. The finds were embedded under exceptionally favourable conditions. The prehistoric settlement was hardly damaged, offering the possibility for a wide range of complex investigations and analyses.

The recovered find material is rich and varied, allowing the reconstruction of the one-time organic and inorganic environment, the settlement conditions, the various modes of food procurement, tool-making activities and even the

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Fig. 2. Open-air museum of the Hungarian National Museum. Vértesszõlõs.
occupants of the site. Evidence for various cultural phenomena were also recovered – their importance points well beyond the significance of the site itself.

Realizing the educational potentials of the site, the Hungarian National Museum built an open-air museum for presenting the settlement to the wider public (Fig. 2). This museum differs from traditional museums and does not always meet the necessary standards in some respects. Still, the evocation of the one-time atmosphere of the campsite, the presentation of the find circumstances in their original environment and the genius loci can no doubt contribute to a better understanding and a ‘feeling’ for the past.

The calcareous tuff enclosing the prehistoric site has always been a popular building material. It is easy to carve and its loose, porous structure has excellent heat retaining qualities. Many generations have used this valuable rock since the Roman Age and there are still countless deposits that can be quarried in a wide zone from Buda to Dunaharaszti. Freshwater limestone was precipitated by springs during various periods of the Ice Age and its formation can still be observed in the cavities hollowed out by karstic waters and in spring craters. Its location (the surface formations, the composition of the over- and underlying layers) and the archaeological, anthropological, botanical and palaeontological remains found there together determine the age when these tuff layers were formed or embedded. This evidence allows the fitting of a particular site into the known sequence of geological events and to determine certain phases of a sequence spanning several hundreds of thousands of years (Fig. 3).

One important phase is marked by the period when the area and the direct environment of the present-day village was the setting for the life of prehistoric man. This setting differed markedly from the present environment. The Tata trench was not the deep and broad valley we see today. The lukewarm springs at the edge of the piedmont built a series of deep basins with a diameter of several meters from the minerals dissolved in their waters. The water discharge of the springs fluctuated and they sometimes dried up completely, together with these basins. An area with a diameter of 8–9 metres enclosed by steep walls provided an ideal settlement site for group of people roaming the region. The early hominids who discovered and exploited this environment are called early archaic Homo sapiens by the anthropologists studying human evolution. In the traditional evolutionary tree they are the first representatives to satisfy the criteria of modern man. These early hominids were the first to populate the habitable areas of the Old World, from the southern tip of Africa to Central Europe.

A community of these early hominids lived in this varied and attractive region for a long time, experiencing successive climatic changes. They probably relocated their camp from one basin to another. Archaeological finds were collected from some eight or nine locations among the basins, most of which were destroyed by modern quarrying operations. These early hominids returned to the basin preserved for the exhibition five times. Tools, hearths, kitchen refuse (splinters from animal bones cracked for extracting the marrow and subsequently crushed for use as fuel, pebble fragments, the waste from tool-making) and the tangible remain of various other activities occasionally accumulated to a thickness of half a metre. This undisturbed prehistoric settlement surface is the culture-bearing layer, the discovery of which is the ultimate goal of every settlement excavation. There were long intervals between the different periods of occupation in the basins at Vértesszőlős. The formation of the 3–4 m thick lime loam, sand, loess and clay embedding the culture-bearing layers was a long process that took place under diverse environmental conditions.

Campsites in calcareous tuff basins have rarely been observed. Prehistorians have long known that this settlement type was more common a few hundred thousand years later, during the time of Neanderthal man. The finds from Vértesszőlős proved that the antecedents of this settlement form could be traced back far into the past. These “basin residences”, as well as the awareness of the favourable environmental conditions and their repeated exploitation reveal much about the mind-set of the communities settling here.

The weather changed gradually, corresponding to the climatic cycles of the Ice Age. The calcareous tuff formations of the moist and warm climate were replaced by loess, the characteristic deposit of a dry and cold period.

The settlement was not abandoned since traces of occupation have also been found in the loess and it would appear that lifeways did not change radically in spite of the transformed environment. The way in which the resources necessary for survival were procured and the fact that the quantity of these resources rarely exceeded the amount needed for survival did not upset the delicate balance between the renewal of the natural resources and the carrying capacity of the territory. Food resources were never exhausted and, as a result, there was nothing to force this small community to move to new territories.

One element of the inorganic environment was at least as important in the life of this prehistoric community as the
basin that sheltered them: the presence of ample raw material for making stone tools. For Vértesszőlős man this source was the fluvial deposit of the nearby river. A wide pebble deposit runs parallel to the Átalér up to its mouth a few kilometres away. During its course from the Vértes Mountains to the Danube, the river rounded and rolled the sharp-edged stone rubble transported in its water. The occupants of Vértesszőlős collected good quality quartzite and silex pebbles – choosing pieces the size of an egg or a smaller potato – from this thick gravel layer lying no more than a few hundred metres from the settlement. The rounded pebbles were split, halved or broken into smaller pieces. The edges of the segments and flakes were further worked with a few strikes and the simple tool was ready for use for various tasks. These few centimetres long tools were used for skinning and butchering animals, for processing hides, as well as for bone, antler and wood carving. Most of them still have a smaller or larger cortex.

Tool-making was perfected over time. By the end of the use-life of the settlement, Vértesszőlős man was more circumspect in selecting the raw material for his tools and more skilful in shaping the cutting edges. A strive for perfection, the improvement of knapping techniques and manual dexterity can thus be traced through time in the archaeological record.

The choice of the site was also excellent in terms of food acquisition. The valley dividing the two hill ranges (Gerecs and Vértes) connected differing regions. The meeting point of the hilly region and the plainland, the nearby forest and the proximity of springs providing water for drinking and mud for wallowing was an attractive habitat for a wide range of animals. The diet of Vértesszőlős man included both large and small herbivores and predatory animals, shown by the bone splinters, teeth and mandibles recovered from the site. The accumulation of this kitchen refuse, the debitage from tool-making and the surviving remains of other activities make up the “culture-bearing layer” whose identification and excavation is the goal of an archaeological investigation.

Horse, an animal of the open steppe, was the most frequently hunted animal at Vértesszőlős. In addition to aurochs and bison, red deer and roe deer from the forests were also carried to the settlement. Predatory animals are represented by wolves and bears. Giant beavers and saber-toothed tigers, the characteristic animal species of the period, are excellent chronological indicators. These animals were exploited for various purposes: their meat, their fur, their antler and tusks were all used. We do not know how these animals were hunted. The 3–4 cm large stone tools are unsuitable for hunting and no artefacts were found that could be regarded as weapons. It seems likely that the carcasses of fallen animals were not left to waste. Quite a few animals suffered injuries among the rugged rocks beside the springs, making them easy prey for the occupants of the site.

The animals were skinned and butchered a little farther away from the settlement and only the useful parts were brought back. Evidence of this activity is preserved in a butchering site that is also part of the open-air museum. The footprints of the animals that visited the springs to quench their thirst were preserved in the limestone. The soft, pliant loam was hardened by the lime precipitating from the water and the loose sediment deposited on the surface preserved the footprints over the millennia.

The animals had yet another very important use. The occupants of the settlement built hearths from the crushed animal bones. The strongly burnt patches of the hearths with a diameter of 40–60 cm offer convincing evidence that, for the first time in the history of mankind, early hominids guarded and tended fire. The use of animal bones for this purpose is all the more surprising since the climate was quite mild during the first half of the use-life of the Vértesszőlős settlement – spanning a rather long period of
perhaps several millennia – and trees were plentiful. László Vértes, the archaeologist who excavated the site, suggested that the occupants were familiar with the favourable properties of greasy bones that gave more heat, burned longer and needed less tending.

The flora can be reconstructed from the pollen remains and the plant imprints preserved in the limestone around the settlement. Pollen carried to the settlement by the wind gives an idea of the vegetation of more distant regions, while the leaves and fruits that had fallen into the water and were encrusted with lime reveal much about the direct environment. Water plants, pines, deciduous trees (oak, maple, elm) and shrubs with colourful flowers (rose, lilac) thrived on the slopes, the river banks and in the area of the springs. The vegetation around the Vértesszőlős settlement complemented the occupants’ diet from early spring to late autumn with a variety of buds, leaves and fruits, many of which could be stored. A number of other plants, mainly grasses, that are no longer consumed today, could also be found on the plainland and on the fringes of the forested areas. Some of the plants in the botanical sample survived from earlier geological periods in the Carpathian Basin, but they gradually disappeared owing to the climatic changes during the Ice Age. The natural habitat of some of these species, such as lilac, lies in the Mediterranean at present, while others represent the wild ancestors of species that were later cultivated (grapes, apples).

The impressive and interesting plant and animal remains (mandibles, leaf imprints) are complemented by other, seemingly insignificant finds that are nonetheless invaluable for the reconstruction of the climate and the environment. These comprise the remains of small water and terrestrial animals, rodents and molluscs. What makes the Vértesszőlős site especially important is that specialists from various disciplines were able to paint a vivid tableau of the environment, as well as of the activities, the physical appearance and intellectual mind-set of these early hominids and to determine the chronology of the settlement. The first hominid group arrived to the Vértesszőlős springs during a brief warm spell of the second glacial of the Ice Age (Mindel glaciation). Radiometric, physical and chemical analyses date this period to about 350 thousand years ago. The period between the earliest and the latest occupation levels spans a few thousand years.

The most spectacular finds were undoubtedly the human remains. The remains of two individuals were found at Vértesszőlős: a child’s milk-tooth and the occipital bone of an adult male, who was christened Sámuel by the excavation workers, a name that was popularized in the articles for the wider public (Fig. 4). Some anthropological features, such as the strong occipital torus, the shape of the child’s tooth, correspond to this phase of human evolution, sharing numerous similarities with contemporary human remains from other parts of the world, while others, such as the large brain capacity, foreshadow the future path of human evolution. The hominid remains from Vértesszőlős represent a phase of evolution that points towards Homo sapiens. The use of fire, the visible advances in tool-making, the varied and successful strategies for food procurement all reflect a dynamic development.

A long hiatus can be observed in Hungarian prehistory after the abandonment of the Vértesszőlős settlement. We do not know whether the central areas of the Carpathian Basin were indeed devoid of human occupation or whether we have simply failed to find its traces. The first Neanderthal groups appeared in Hungary some 200–250 thousand years later.

**THE EVOLUTION AND CULTURE OF MODERN MAN**

Katalin Simán

**THE MIDDLE PALAEOLITHIC**

The Middle Palaeolithic in Hungary began about 100 thousand years ago, at the close of the Riss/Würm interglacial, and ended about 36 thousand years ago, during a long and rather cold stadial of the Würm. Traces of human activity are concentrated in two well distinguishable geographic regions of the Carpathian Basin during this period, spanning over 60 thousand years (cp. the distribution map). One of these geographic regions lay in the eastern part of the Transdanubian Central Range, bordered by the Danube in the north and the east, the Érd Hills in the south, Tata in the west and the line of Lake Balaton in the southwest (although the lake itself did not exist at the time). The other lay in the Bükk Mountains, where most of the ‘classical’ Palaeolithic sites have been discovered. This distribution of the sites is hardly surprising, given the geographic conditions, the lifeways and customs of the population groups of the period and the climate during the alternating warm and cold periods. A few scattered findspots have been identified between these two main regions: since these yielded but a handful of finds, often no more than one or two artefacts, they can perhaps be interpreted as the traces left by groups on hunting expeditions. We know that the ancestor of modern man, Homo sapiens sapiens, had already appeared by that phase of the Middle Palaeolithic when the Carpathian Basin was inhabited. However, only the skeletal remains of Neanderthal man have been found to date in Transdanubia and in the Bükk Mountains.

*Transdanubia in the Middle Palaeolithic*

Three industries can be distinguished in Transdanubia. Two of these are represented by large, relatively permanent settlements yielding rich assemblages and a few temporary campsites with few finds. The site of the Charentian culture, named after a region in France, lies on a plateau near
The community that established its camp beside the hot-water springs by the Öregtó in Tata (Fig. 5) appears to be similarly unique, without any analogies. The site was first excavated in the 1910s and, later, in the 1960s. The investigation of the site was resumed in the late 1990s. The hot-water springs first dissolved the lime content of the rocks and subsequently precipitated a series of basins. A Palaeolithic group settled in the sheltered, valley-like basins about 50 thousand years ago, returning to the site several times. Their settlement traces were eventually covered by sand-blown loess; the basins were filled by the springs and coated with a calcareous tuff crust. The site now resembles a cave, although the group that once settled here could see the sky above their heads. The raw material for the tools, carefully worked tiny implements no more than 3 cm long on the average, was selected from the pebbles of the Átalér. They hunted brown bear, horse and red deer, although their main prey was mammoth calf. One unique find from this site, without any known parallels, is a so-called tjurunga, a flat oval object made from a mammoth tooth lamella, resembling a ritual object used by Australian aborigines in their ceremonies (Fig. 6). A number of smaller temporary campsites of the same community have been discovered in some nearby...
caves, but no large sites that could be associated with the same people or related groups have yet been found within a radius of several hundred kilometres.

The third cultural complex of the period in Transdanubia, the Jankovich culture, is known from the caves of the Pilis–Vértes–Gerecse Hills. This culture was named after the Jankovich Cave lying near Bajót in the Gerecse Hills, excavated in the earlier 20th century. Beside the eponymous site, the remains of the culture were also identified in several other caves investigated in the first half of the 20th century. The re-examination of these earlier excavations revealed that the culture can be divided into an older phase (end of Riss/Würm, early Würm phase) and a younger one (between 40–50 thousand years ago). These groups hunted reindeer, red deer, rhinoceros, musk ox, bear, ibex and bison. The most typical stone tool of this technocomplex – on the basis of which it was identified as a separate culture – is a leaf-shaped tool made from working an ovoid flake. This finely worked tool functioned as a knife or a scraper, rather than a weapon used in hunting (Fig. 7). The good quality raw material for the tools was collected from the rock outcrops in the hills. A few rock types suggest that groups of this culture visited or had contacts with the Zemplén–Bükk region; the source of some lithics lay in the faraway White Carpathians. Sites of the same population have been identified along the Ipoly river and in at least one cave of the Bükk Mountains.

The only site of the culture investigated using modern excavation techniques is the Remete–Upper Cave on the outskirts of Budapest. The most significant finds from the cave were two lower incisors of Neanderthal man, indicating that these lovely leaf-shaped tools were made by Neanderthal man.

The hematite mine unearthed at Lovas in the 1950s was associated with this culture on the basis of a single stone tool found in a pit. The age and the cultural context of this tool, however, is still subject to debate.

**The Middle Palaeolithic in the Bükk Mountains**

The rich and varied finds assemblages from the Middle Palaeolithic sites of the Bükk Mountains have been the subject of heated debates in the Hungarian and international archaeological community. Even the re-assessment of the excavations conducted at the beginning and in the first half of the 20th century have been unable to resolve these debates. Most of the find assemblages have no known analogies in the Carpathian Basin and, similarly to the Transdanubian industries, they are isolated phenomena. The tools in these assemblages were made both from locally available raw materials, and from lithics originating from the White Carpathians, southern Poland and the Prut region.

The Subalyuk Cave lying in the southern part of the Bükk Mountains was excavated in the 1930s (Fig. 8). The finds were discovered in two layers. The lower layer can be dated to the end of the Riss/Würm interglacial or the initial phase of the Würm glaciation. The finds from this layer were assigned to the classical Moustarian culture. This group hunted ibex, by no means an easy prey, in the mountains. Similar finds were also discovered in a few nearby caves. The upper culture-bearing layer dates to a later period, the end of the Middle Palaeolithic. This group produced smaller tools and followed a different tradition. The skeletal remains of a Neanderthal woman and a child, the most complete human remains from the Hungarian Palaeolithic, were recovered from this layer. Judging from the drawings made at the time of the excavations, these skeletal remains probably came from a burial.

The eponymous site of the Bábonyien culture is Sajóbányón, lying at the eastern foot of the Bükk Mountains. Our knowledge of this industry is based mainly on surface finds, the most typical being bifacially worked tools. Although most of these sites were open-air campsites, the archaeologist who identified the industry associated the finds from the Szeleta Cave with the youngest phase of this culture. Very little is known about the lifeways of the communities that occupied these sites on eastern slope of the Bükk Mountains from the Riss/Würm interglacial to the end of the Middle Palaeolithic. We do not even know whether they specialized in hunting certain species only.

The Szeleta Cave was the first Palaeolithic site to be excavated in Hungary. The first campaign was followed by several others, as well as a control excavation at the eponymous site of the Szeletian culture. The finds from this site finally proved the presence of the Palaeolithic in Hungary both to Hungarian and international scholarship. The archaeological finds were recovered from several layers. The lowermost culture-bearing layer contained only a few flakes that were unsuitable for a cultural categorization. These were overlain by finds of the “Lower Szeletian”. It is difficult to give a good description of this culture since the stone tools became strongly rolled and worn during the millennia. Ibex and

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**Fig. 8. Archive photo showing the excavation of the Subalyuk Cave**
horse were the main hunted animals. A few caves near the
eponymous site and in the interior of the Bükk Mountains
yielded the finds of a similar industry.

THE TRANSITION FROM THE MIDDLE
TO THE UPPER PALAEOLITHIC

Two sites represent the transition from the Middle to the
Upper Palaeolithic from a techno-typological aspect. Al-
though both sites have been excavated, the date of the layers
cannot be determined either stratigraphically or by radi-
carbon measurements. The bones, if any, have completely
decayed since their deposition and it is thus impossible to
establish what animals were hunted.

The find assemblage from Eger–Kőporos-tető included
both Middle Palaeolithic types, such as leaf-shaped, bifacially
worked tools, and a number of typical Upper Palaeolithic
tools. The raw material was
predominantly local, pro-
cured from the environs of
Eger or from the southern
side of the Bükk Mountains.
At the same time, some li-
thics were imported from the
eastern side of the Bükk
Mountains and from the
Tokaj–Prešov Mountains, as
well as from the Prut region
(Fig. 9). The assemblage rep-
resents a single industry, al-
though it must in all fairness
be added that some special-
ists have challenged this ow-
ing to the diversity of the ma-
terial, suggesting that the as-
semblage contains the finds
of different cultures. Comparable finds have been collected
on other sites in the Bükk Mountains.

The remains of a workshop were unearthed during the ar-
chaeological investigations preceding the construction of a
housing estate on the Avas Hill in Miskolc. The tools from
this site reflect the same duality, not only as regards their
type, but also in terms of their manufacturing technique: the
traditional Middle Palaeolithic technique was perfected to a
level where the products already had an Upper Palaeolithic
character.

THE EARLY UPPER PALAEOLITHIC

The earliest Upper Palaeolithic groups arrived to Hungary
sometime during the Middle Palaeolithic. According to ra-
diocarbon dates, an early Aurignacian community settled in
the Istállóskő Cave in the western Bükk about 40 thousand
years ago. The cave was excavated several times since the be-
ginning of the 20th century. Only a few stone tools were
recovered from the lower culture-bearing layer; in
contrast, over a hundred
bone tools, including
split-base javelin points (Fig.
10), attest to the presence of
hunters. The upper Aurign-
nacian layer of the cave, as-
signed to around 31 thou-
sand years ago by radiocar-
bon dates, yielded bone jave-
lin points sharpened at both
ends, together with a typical
stone tool assemblage of the
culture. Most stone tools
were not made from locally
available lithics. Aside from
a few tools made from obsidi-
ian and local hydro-
quartzites, the raw material of the tools was Slovakian
hydroquartzite, flint from the Prut region and perhaps from
southern Poland, suggesting that these hunters had brought
their tools with them from their original homeland and had
used local raw material only for replacing tools that had for
some reason become useless. The re-assessment of the
palaeontological finds from the site revealed which animals
had been hunted and, also, that hunting was seasonal. The
first occupants’ main quarry was chamois, although they
sometimes also hunted red deer, reindeer, ibex and predai-
tory animals during their brief stay in summer and autumn.
The later group of the upper
layer arrived in autumn and
remained until the end of
winter. They also preferred
chamois, but the number of
reindeer doubled and horse
appeared as a new species
among the hunted animals.
Their longer occupation of
the site is indicated by the
presence of jewellery, pipes
and a flute with three holes
(Fig. 11). The bone sample
also included a phalanx and a
tooth of Homo sapiens sapiens.
Other temporary campsites
included another nearby
cave and the Szeleta Cave on
the other side of the Bükk
Mountains.

A hearth and finds of the
early Aurignacian culture were found in the upper level of the lower Szeletian layer in the Szeleta Cave. Overlying them were the finds of an industry that was determined as “developed Szeletian”. This layer was later separated into a Szeletian and a Gravettian level; the two levels are now again regarded as representing a single culture. The well-known and oft-published lovely spearheads were found in this layer (Fig. 12) together with the slender arrowheads of the Gravettian culture. This layer was dated to around 32 thousand years ago, a date preceding the appearance of the Gravettian culture in Hungary. The hunted animals were red deer, mammoth and reindeer. Only two sites with the finds of this group are known to date: a single leaf-shaped spearhead was found in the Istállóskő Cave and finds from a workshop were collected on a nearby hilltop.

It is often mentioned that a tool typical for the lower level of the Szeleta Cave was found in the lower layer of the Istállóskő Cave, while the upper layers yielded a leaf shaped point whose analogies can be quoted from the upper layers of the Szeleta Cave. Similarly, an Aurignacian hearth and tools were found in the lower level of the Szeleta Cave, while a bone point characteristic of the Upper Aurignacian of the Istállóskő Cave was discovered in the lateral corridor (Fig. 13). This indicates not only the contemporaneity of the groups that occupied the two caves, but – accepting that the lower culture-bearing layer of the Szeleta Cave can be associated with Neanderthal man of the Middle Palaeolithic and the Aurignacian culture with modern man – also that both human groups had settled in this territory at approximately the same time.

LATE GLACIAL HUNTERS
Viola T. Dobosi

During the last twenty thousand years of the Ice Age, Europe was populated by Upper Palaeolithic communities whose subsistence was based on specialized, efficient hunting. In the central zone of the continent – an area that is especially important in terms of the possible cultural contacts of Hungarian sites – the new population had perhaps met Aurignacian groups migrating to the west; the few remaining groups may have played a role in the emergence of a new cultural unit. The strongest argument in favour of this theory is the continuity observed on certain sites and a number of similarities in the technology of tool production.

The long, dry, cold millennia of the last glaciation were only temporarily interrupted by periods with a milder climate. In the especially harsh periods of the last glaciation, the southern fringes of the permanent ice sheet extended to the central areas of the continent, restricting the extent of the habitable world. In order to survive the harsh conditions, *Homo sapiens* pursued a rather successful subsistence strategy. Since vegetation and edible plants were scarce, hunting became the most important means of food acquisition. Hunting was performed with spears, bows and arrows, the usual method being stalking the prey animals in group hunts. Although the simple bows, probably made from organic material, have not survived, the slender, 4–5 cm long arrowheads with retouched edges and pointed tips used in the hunt occur in every find assemblage. The tiny, sharp blades were the fittings of the spears inserted into the sides of wooden, bone or antler spearheads. A spear-thrower with a hooked terminal helped a more accurate aim and increased the range of the weapon. The huge herds grazing in the plains could not be approached from the caves in the hills and these communities therefore relocated their settlements to low hills and river valleys, where artificial dwellings had to be constructed from wood, skin, antler and bone. The success of this strategy is reflected in the fact that these communities survived even the harshest climatic periods of the Ice Age. The relative density or scarcity of the temporary and permanent settlements of these communities largely depends on the extent to which a particular region has been investigated. These sites occasionally expanded into smaller villages with several habitation units. Provided generously with grave goods, the deceased were buried between, beside or under the habitation structures.

The interior of the Carpathian Basin was not covered by ice. The arc of the high mountain range protected this region from climatic extremes. The eastern wind accumulated loess in the dry spells. The several metres thick deposits contain a wealth of archaeological and other finds. Loess covered large territories and levelled uneven surfaces. The meandering rivers cut shallow channels into these plateaus. The rivers were flanked by gallery forests, and smaller forested areas provided refuge in the sheltered valleys of the lower mountain ranges. Pine and birch thrived in the cold periods, while deciduous trees that are also part of the present landscape appeared in the warmer and moister climate. There was sufficient wood to feed the hearths of the camps even in the plainland, where the climate was even harsher. The vegetation of the loess steppes consisted mainly of shrubs. The open, dry grassland was a favoured habitat of large herbivores. Mammoth and, later, wild horse and reindeer were the dominant species; their
The Palaeolithic and Mesolithic remains occur frequently among the refuse from the settlements. The predatory beasts stalking the herbivores were hunted for their meat, antler and fur.

According to our present knowledge, the central areas of the Carpathian Basin were only inhabited in the last 20 thousand years of the Ice Age. Although there is no reason to assume that there were times when this region was totally uninhabited, most of the known sites are limited to certain periods: it would appear that population groups arrived and settled in favourable environments in successive waves. The plainland, the hills and the valleys with abundant game attracted hunters, while the mountain regions were a source of valuable lithics for the tools.

No permanent sites, such as the ones known from Moldavia and the Russian plainland, have been found by Hungarian prehistorians during the last century of Palaeolithic research. The large hunter communities, whose permanent settlements mostly lie on the fringes of the Carpathian Basin, apparently favoured the environment by the 'gates' leading out of this region or along the outer fringes of the Carpathian Mountains. These wide zones acted as the highways of population movements, with the river valleys and the ice-free passes of the high mountains leading to the much-sought hunting fields.

About fifty Upper Palaeolithic settlements have been unearthed in piedmont areas and on river terraces. Even though the number and quality of the finds recovered from these sites is often rather poor, especially as regards sculptures and other works of art, as well as anthropological finds, each of these sites revealed a few individual traits that enabled the reconstruction of successful strategies of adaptation to the environment using archaeological methods. The Hungarian find material shares many similarities with the Central and Eastern European cultures of this period, meaning that the
Hungarian Late Palaeolithic can be neatly fitted into the general historical framework. These similarities can be traced in similar hunting techniques, in the more or less identical choice of settlement sites, shared features in tool-kits and certain ornaments, as well as certain similarities in the colourful world of beliefs, even though archaeological objects seldom provide unambiguous proof for the latter. These communities maintained strong ties with each other, as reflected, for example, by the presence of various raw materials found many hundreds of kilometres away from their geological source. One case in point is rock crystal from the eastern Alps, a rare and highly valued commodity throughout the Upper Palaeolithic. Amber, a fossil resin that does not occur naturally in the Carpathian Basin, has also been found on some sites, while on other sites the majority of the tools were made from raw materials whose source lay many hundreds of kilometres away. Some tools were made from flint originating from the Prut region (Fig. 14); others were made from silex found in Silesian end moraines (Fig. 15). Tertiary snail shells, collected from the few outcrops of old marine sediments, were popular ornaments (Fig. 16); in certain periods of the Upper Palaeolithic these snail ornaments occur on sites throughout Carpathian Basin. Beside various commodities, ideas and new technologies were also exchanged, and these active direct or indirect contacts no doubt contributed to the uniformity of the cultures of the period. It is this duality of site clusters with individual features and the uniformity in material culture that makes this period very interesting. This approximately 20 thousand years long period is known as the Gravettian after an artefact called the gravette, a carefully worked silex arrowhead found on all sites of the period. A finer subdivision according to regions is also possible (independently of the present political boundaries); these regional groups can be separated on the basis of the sites’ chronological position or local traditions in tool-making. The Hungarian find assemblages allow groupings according to both of these criteria.

In terms of chronology, the sites fall into three main periods. Since the Carpathian Basin was not part of the harshest climatic zone, these periods represent the less severe (interstadial) phases of the last glaciation. The average temperature remained several degrees below the present one even in these mild periods.

The first settlement wave of the second, Gravettian phase of the Upper Palaeolithic occurred some 26–28 thousand years ago. A distinct culture emerged in the Vienna Basin and the Moravian Basin, from where it expanded to the region between Willendorf and the Pavlov Mountains in Moravia. The best-known finds of this culture, the Venus of Willendorf and the burials of Dolní Věstonice, are standard illustrations in most books on art history and archaeology. With its rich fauna resources, the Carpathian Basin attracted hunter groups who arrived through the wide ‘gates’ between the southern Carpathian range and the Alpine foreland. The settlements of this period lie in northern Hungary, usually above the valleys leading from the mountainous areas and on hilltops, up to the valley of the Hernád and the Bodrog in east and farther to the piedmont of the high mountains. The time-tested Gravettian traditions can be seen in the choice of settlement sites. These communities usually settled in areas lying 150–200 m a.s.l. and chose the inner, more protected slopes with more sunshine that were less exposed to the wind. Some sites, such as Püspökhatvan, were established for a specific purpose. The raw material lodes exposed on the steep slope above the Galga valley were mined and prepared for further processing. The many thousands of stone finds only included a few pieces made from rocks imported from other regions; few animal bones, indicating hunting, were found. Each phase of the tool production process can be reconstructed from the finds of this workshop.

The best known and most intensely studied site of the period is Bodrogkeresztúr–Henye. The hill rising near the confluence of the Bodrog and the Tisza was an ideal location. Beside the rather attractive and pleasant landscape, the site was an ideal base for hunting the wild game roaming the loess steppe of the Great Hungarian Plain, the forests of the mountains and the riverine marshland. Although there is no proof for this, the occupants of the site probably also exploited the rivers rich in fish. Another equally important consideration in the choice of this strategic location was the proximity of the raw material sources, needed for the manufacture of stone tools. This site lies in one of the centres of the obsidian sources. The proximity and, more importantly, control of this highly popular raw material, transported to regions many hundreds of kilometres away, provided a number of advantages to the occupants of the settlement. The site was occupied over a rather extensive period compared to other settlements. Although the culture-bearing layer was not particularly thick, it extended over a fairly large area. No remains of permanent dwellings have survived. Even if such structures had existed, their remains have probably been destroyed by modern agricultural cultivation since the culture-bearing layer on the hilltop was strongly disturbed. Mammoth and elk were the main hunted animals. The tools made on 6–8 cm long, slender stone blades were suitable for working animal skin, bone and antler, as well as woodworking and the processing of bark and plant fibres. The end-scrapers and burins, the bulky wedges reflect an elaborate and varied tool-kit. The working edges were prepared according to the quality

Fig. 17. Polished limestone disc with serrated edges (“moon calendar”). Bodrogkeresztúr–Henye
and the hardness of the material used. Large series of these efficient tool types, reflecting long centuries of experience in tool making, were produced.

One of the most outstanding finds of the Hungarian Palaeolithic, rather poor in artistic finds, is the carefully polished limestone disc with serrated edges brought to light at this site (Fig. 17). It is possible that the Megyasző–Szelestető site on the other side of the mountain was established at the same time since the two sites enclose the southern tip of the Tokaj–Prešov Mountains. The age of the two settlements is roughly identical and the find assemblages too share numerous similarities in terms of tool types and their raw material.

It would appear that these settlements absorbed, for a longer or a shorter period of time, the excess population of the core area of the culture and that they also functioned as the destinations of hunting expeditions and prospecting for raw materials. Even though a few tool types characteristic of the sites in the culture’s homeland are missing, these sites can nonetheless be associated with the Gravettian culture.

The roughly two thousand years of population movements were followed by a more peaceful period, spanning a few thousand years. No major sites from the time following the first wave of settlement are known. The harsher climatic conditions perhaps forced these early colonists to return to their original homeland.

There was another milder period around 20–18 thousand years ago, a date determined by radiocarbon and other dating methods. The loess profiles from this period show two successive brown humus layers containing snail shells, as well as the bones and teeth of small rodents favouring a moister and milder climate. The charcoal specks indicate a higher proportion of deciduous trees. In the archaeological record this is reflected by an increase in the number of sites, corresponding to the arrival of a second wave of Gravettian groups. In addition to the earlier, traditional blade tools, new types also appeared in Hungary. The tool-kits from a few settlements included tools made with a much older method, rooted in the Lower Palaeolithic and still widely used in the Middle Palaeolithic. These Gravettian groups again used pebbles collected from the river beds as raw material for their tools. The reason for this still eludes us. The countless millennia that elapsed since the Lower and the Middle Palaeolithic excludes a continuity of this tool-making technology. The anthropological make-up of these groups had also changed since we know that the Old World had by this time been inhabited exclusively by *Homo sapiens* for the past 15 thousand years. The environment was no different from the one colonized by the ‘blade people’. No traces of a radical geological change that would have made the raw material sources of the preceding and ensuing periods inaccessible have been detected. Several large settlements are known from this period: one of these is Ságvár, the classical Upper Palaeolithic site of Hungary, lying on a hilltop overlooking the Jaba stream. This was one of the first open settlements to be investigated and successive generations of archaeologists worked on its excavation and analysis. The foundations of two, semi-sunken huts were uncovered together with the posthole of the post that supported the roof. The high number of reindeer bones attest to successful hunting strategies. The finds from this site include a long, intact reindeer antler that was perforated, but was not decorated. Comparable perforated antlers ornamented with incised plant and animal motifs are known from contemporary sites in Western Europe. In addition to tools made from brown radiolarite, flakes and tiny chips – the debitage from on-site tool production – covered the occupation level. The site appears to have been quite attractive since another group returned to it a few hundred years later. This group came from the same population and used similar tools. A 80–100 cm thick loess layer was deposited between the two phases of occupation. The two culture-bearing layers and the loess between them represents a characteristic sequence, observed at many other sites; the period has been named Ságvár period after this site.

Another ‘pebble’ site from the same period has been identified at Mogyorósbánya. The excavation campaigns allowed the reconstruction of the settlement’s layout since agricultural cultivation only disturbed the uppermost level of the site.
The four oval habitation units, each with a diameter of 8–10 m, were separated by 40 m wide open zones without any finds, indicating that four hunter groups or four families lived here at the same time. The site lies at the entrance of the valley leading from the Gerecse Hills, full of caves, to the Danube plain, at the meeting point of two favourable ecological niches.

Only three sites of this culture have been systematically excavated and therefore little is known about its settlement patterns. The communities occupying these sites suggest a fairly large overall population since the largest settlements of the period can be associated with them. Neither did the ‘blade people’ disappear. Leaving the mountains and the hills, they moved into plainland. Their small, temporary hunters’ camps have been identified on the wind-blown dunes and the sand or loess covered hillocks rising above the waterlogged territories, for example in the Jászság and in the Szeged area.

The pace of events accelerated – the Ice Age was swiftly drawing to its end and the constant change of astronomical phenomena causing the glaciations ushered in the period in which we now live. An ever shorter time elapsed between the second and third Gravettian population wave, and it seems likely that this region was not entirely unpopulated between the two.

The lifeways of this period (15–16 thousand years ago) are best known from the Palaeolithic settlements in the Danube Bend.

There are certain territories whose attraction, made up of several favourable elements, is difficult to explain. The Danube Bend is one of these. It was continuously and densely settled from the early historical periods, a phenomenon no doubt rooted in the late Ice Age. The attraction of this area can be explained by its ecology and the geographical conditions of the Pilismarót region (Fig. 19). Flowing from west to east, the Danube turns south after the Dömös straits. The river meandered slowly over the plainland before Dömös, its bed – carrying less water in the Palaeolithic – was divided into branches by shoals. The thick loess cover levelled the unevenness of the last hills of the Pilis range and the earlier river terraces on the right bank. This extensive loess plateau is criss-crossed by the still active streams flowing down from the hills and the dried-up channels of one-time streams. The campsites of the Epipalaeolithic hunters lie along the edges of these valleys. Similar settlement patterns have been observed in other regions, where larger hunter communities settled.
during this period (for example in the Don Bend). The seasonal migration of reindeer herds has to be taken into account at this point. In winter they move into the more sheltered forests, while in summer they migrate to the plainland in search of food. This migration can be north to south, as in the Canadian plains, or from the mountains to the plainland since the few surviving forests retreated to the mountain valleys during the Ice Age. The seasonal migration of the reindeer herds probably led through these valleys – an ideal setting for hunters. The hunter groups exploited this environment to the full. Small campsites dot the landscape, lying no farther than 600–800 m apart, within eyesight and earshot of each other, allowing the one-time hunters to co-operate and organize large hunts. The settlements were only briefly occupied; the prey was transported to the permanent settlements. The find material from these campsites is not particularly rich, but it is astonishingly varied. The presence of obsidian testifies to contact with the Tokaj region, quartz porphyry with the Bükk Mountains and rock crystal with the Alps. The function of the two sandstone pebbles with incised edge found at Pilismarót–Pálrét is unknown: what seems certain is that they were not utilitarian objects (Fig. 20). The tiny blades found on the settlements in the Pilismarót area elucidated an important research issue. A number of these small tools or arrowheads were recovered from the late glacial layers of the caves in the Gerecse, the Pilis and the Vértes Hills, with only a few associated finds (or none at all). Attempts have been made to link these assemblages to a specific culture, but without success. However, once they were found together with other finds on traditional open-air sites near the caves, it became clear that these finds could be linked to the same population group. They were apparently caches of spare tools and weapons, deposited in the caves at the time of hunting expeditions into the hills. The bone pendant with an incised pattern from the Jankovich Cave at Bajót (Fig. 21), the pierced wolf tooth pendant from the Szelim Cave near Tatabánya (Fig. 22) and the pair of red deer teeth from the Csákvar rock shelter (Fig. 23) were probably ornaments worn by these hunters.

The abundance of Palaeolithic sites in the Pilismarót region was noted quite early and the excavations in this region were begun several decades ago. About eight sites are known between Basaharc and Dömös, and future investigations in this area will no doubt identify additional ones. The Dömös site must by all means be mentioned: the remains of a tent built around a framework of posts were uncovered during the excavations. This tent type is still used by the Lapps and the reindeer-herding Mongolian communities in the mountains. Skin or bark was laid over the conical post structure and at Dömös this mantle was pegged to the ground with antlers. This dwelling is a unique find in Hungary.

The other regions of Hungary were also inhabited in this period. The Istállóskő Cave, earlier occupied by other groups, was also used by the Gravettian hunters, as shown by the bone ornaments unearthed in the upper layers (Figs 24–25). The hydroquartzite debitage and cores prepared for further work found at Arka in the Tokaj–Prešov mountains, farther to the northeast, suggest that the site was established for the exploitation of raw material resources. The assemblage from this site includes a perforated serpentine amulet (Fig. 26).

The Gravettian period is known for its burials richly furnished with grave goods. The recovery of the skeletal finds of Homo sapiens, Upper Palaeolithic man, does not provide new information concerning human evolution. The mapping of the geographical distribution of various anthropological types most certainly contributes to a better knowledge of prehistoric
The Mesolithic: towards a production economy

Róbert Kertész

The Mesolithic brought major changes in human history. Both the environment and the lifestyle of hunter groups were transformed. In consequence of the warming from the end of the last glaciation, the temperature reached the present level and deciduous forests gradually replaced the earlier taiga forests. Parallel to the changes in the environment, the animal population also changed: new species appeared to replace extinct animals and species that had migrated to other regions. The new environment led to a crisis among the hunter-gatherer groups: the descendants of the late glacial communities were faced with a difficult choice. Some were unable to adapt to the relatively rapid and radical change of the environment and chose to follow the reindeer herds to Northern Europe, from where the ice sheet had gradually retreated. Others chose to stay, adapting to the new environment and becoming hunters of aurochs, bison and red deer instead of reindeer, mammoth and cave bear.
An overview of the Mesolithic in Hungary reveals that the Jászság area is the single region where settlements of this period have been systematically investigated and excavated. The earlier lack of archaeological evidence for settlement during this period led to the theory of a ‘Mesolithic hiatus’, according to which the late glacial hunter communities moved elsewhere owing to the environmental changes at the end of the Ice Age and the central areas of the Carpathian Basin remained uninhabited for long millennia, until the arrival of the first Neolithic food producing communities. The Mesolithic settlements discovered in the Jászság have refuted this theory. The discovery and excavation of the campsites and typical finds of Mesolithic hunter groups enabled the reconstruction of their dwellings and their lifeways, together with their cultural relations and the broader environment in which they lived. In the following section we shall offer a glimpse into the everyday life of Mesolithic groups, based on the investigations conducted in the Jászság area a decade ago (Fig. 28).

The surface and the vegetation of the Jászság, lying in the northwestern part of the Great Hungarian Plain by the southern piedmont of the Mátra Mountains, was in essence a mosaic of areas with differing ecological conditions owing to its peripheral location. These regions offered different modes of exploitation. The subsidence basin at the confluence of the Zagyva and the Tarna rivers in the centre of the region was the main area of Mesolithic occupation. Flowing down from Mátra, the rivers reached a floodplain enclosed by higher elevations and created a marshland in the labyrinth of branches and oxbows. It is not mere chance that this environment attracted the
Mesolithic hunter-fisher-gatherer groups, who settled on the dry levees rising 1–2 m above the floodplains among the meanders. The area was rich in water and had a lush vegetation even in the dry summer months, with herbivores and fur animals abounding in the gallery forests and the floodplain grasslands, the rivers and oxbows providing a variety of waterfowl, fish and molluscs.

The pollen analyses indicate that the hunters’ camps were established in an environment of extensive gallery woods of oak, elm, willow and maple. The shrub level of these gallery woods was dominated by hazel. The water regime became unstable in summer owing to low precipitation. The ground water table sank in the vegetation periods, providing optimal conditions for human settlement and excellent circumstances for creating seasonal campsites in summer (Fig. 29).

These seasonal campsites were indicated by patches with a diameter of 12–17 m. The archaeological finds at the Jászberény I site were recovered from six such patches, while at the Jászberény II site four patches were observed, all lying relatively close to each other. Larger settlements with more intensive surface finds are rare. The Jásztelek I site appears to have been a larger settlement since the finds showed a relatively dense surface scatter over a roughly 50 m × 40 m large area. The culture-bearing layer was usually 10–15 cm thick and lay directly beneath the topsoil. The thin occupation levels of these Mesolithic campsites indicate that they had been occupied briefly by smaller groups. The mobile lifeways of these communities called for seasonal changes in their settlement sites. The finds in the investigated campsites showed find scatters of varying intensity and the different find types often lay in separate clusters, allowing the identification of individual activity areas, such as stone workshops and butchering sites. The excavation of the Jásztelek I site enriched our knowledge of the dwellings of these hunter communities. The sunken foundation and the remains of the structural elements enabled the reconstruction of an asymmetrical conical hut built around a framework of posts – the earliest residential structure from Hungary that could be fully reconstructed (Fig. 30).

Aside from a few carefully worked bone point fragments, the finds recovered from the settlements were exclusively stone artefacts. Tools used for different purposes occur in these lithic assemblages: together with arrowheads indicating hunting with bows, the finds include end-scrapers, burins and borers, as well as various retouched blades and flakes. The tools were made using the
traditional techniques, although the size and the type of the retouched flake and blade tools and often even the manufacturing technique differed from those used by the late glacial hunters. Microliths, small tools often measuring less than 2 cm, dominate these Mesolithic assemblages (Fig. 31). Some of these functioned as arrowheads (Fig. 32), while others were not used independently, but were parts of composite tools: several microliths were fitted into a bone or antler handle. The most characteristic microliths are geometric in form: crescents, triangles and trapezes, pieces that also reflect a chronological sequence. The lithic inventory is completed by semi-finished tools and unretouched blades that, together with the unworked flakes and debitage, cores and lumps of raw material, indicate local production.

The stone industry from these hunters’ camps was based on flint types from the post-volcanic rocks of the nearby Mátra Mountains. The petrologic analyses revealed that the Mesolithic groups of the Jázság procured this raw material from the northern part of the region, from the constantly shifting fluvial deposits and alluvial fans within a 10 km radius and from the outcrops in the Mátra Mountains, lying some 25–50 km away. Expeditions for the acquisition of raw material probably led through the Zagyva and the Tarna valleys, as well as the valleys of the smaller streams in the northern Jázság. Raw materials from more distant areas, such as obsidian from the Tokaj–Prešov Mountains, glassy quartz porphyry from the Bükk and Szentgál radiolarite from Transdanubia, occur but sporadically.

The other finds from the settlements indicate the full exploitation of what the environment had to offer. Hunted animals included species both of the closed forests and the open forested steppe, corresponding to the mosaic of different ecologic niches in the Jázság area. The bone remains of large herbivores, such as aurochs, bison, wild horse, red deer, boar and roe deer, testify to efficient hunting with bows and arrows (Fig. 32) and dogs, the earliest domesticated animal. The hunting of solitary game (wild
horse, stag, boar) and herd animals (aurochs, bison, hind, roe deer) called for different hunting strategies. Beside the above species, the kitchen refuse contained the remains of birds and smaller mammals (e.g. hedgehog), as well as fur animals, such as hare, beaver, weasel, wild cat, marten, pine-marten, fox and wolf. The presence of fish, pond tortoise, bird eggs, terrestrial and lacustral snails and shells indicate that the diet was complemented by fishing and food-gathering. Even though plant remains have not been found, it seems likely that various mushrooms, roots, tubers, acorn, cornel, water-chestnut, raspberry, strawberry and hazel, thriving in the gallery woods, all figured in the diet of these Mesolithic groups.

The archaeological and palaeoenvironmental evidence suggests that comparable Mesolithic sites probably still lie undetected in areas such as the northern fringes of the Great Hungarian Plain, whose ecology resembled the one in the Jászság area, as well as in the region of silex outcrops in the Northern Mountain Range and in the river valleys connecting these two regions that wound through the alluvial cones in the northern part of the Great Hungarian Plain.

According to radiocarbon dates obtained from terrestrial snail shells recovered from the Jászberény I site, the Mesolithic hunters settled near the palaeo-Zagyva about 8 thousand years ago (8030±250). The stone inventory of the Jászság Mesolithic, labelled the Northern Hungarian Plain Mesolithic industry, shows a number of individual traits. The industry can be interpreted as a transition between the cultural units in the northern Balkans and the northwestern part of the Carpathian Basin. Clear affinities can be demonstrated with the sites in the northern part of the Carpathian Basin and the ones in Transylvania and southern Slovakia (such as Ciumești II, Barca I and Sered I).

Fundamental changes can be noted in the material culture of the late Mesolithic preceding the emergence of the Neolithic in Europe, reflected in the uniformization of the find material. A number of technological innovations (retouched blunting, notches, trapezes, etc.) appeared in the stone industries of the period: these innovations can be noted throughout the continent, irrespective of geographical and cultural boundaries. The changes in the stone inventories point toward the development of Neolithic toolkits. Certain elements in the stone industry of Jásztelek I, representing the late phase of the Northern Hungarian Plain Mesolithic industry, can be fitted into this general tendency. The archaeological and paleo-ecological evidence suggests that a development resembling the one throughout the European continent can also be demonstrated in Hungary.

In contrast to Europe, a Neolithic production economy based on plant cultivation and animal husbandry appeared in the millennia following the end of the Ice Age in the Near East and in Anatolia. This production economy and other elements of the Neolithic package (production of clay vessels, weaving and spinning, polished and perforated stone tools) spread to the Balkans and, later, to the central regions of the Carpathian Basin as a result of the cultural and ethnic irradiation from these primary centres of civilization. The northern boundary of the Early Neolithic Körös–Starčevo culture – bound by many strands to the earliest agricultural communities of the Balkans – lay in the centre of the Carpathian Basin about 8 thousand years ago. The Mesolithic hunter groups living north of this boundary and the food producing communities to its south were thus in close proximity to each other. The boundary dividing the Carpathian Basin was only temporary since an intensive information flow can be assumed between these two neighbouring cultures, each with its distinctive population, economy, technology and social structure. The analysis of the lithic assemblages recovered from the late Mesolithic settlements in the Jászság indicates that the Mesolithic groups occupying the northern part of the Great Hungarian Plain were ready to adopt the Neolithic innovations from the south. As a result, the material and spiritual culture of the Neolithic gradually spread to and became dominant in the northern part of the Carpathian Basin too – even if in a slightly modified form – whence it was diffused to the more distant territories of Central and Western Europe.