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ABSTRACT

of the dissertation for the degree of Doctor of Philosophy

**SETTLEMENT OF HOMO GENUS IN THE
SOUTH CAUCASUS
(on the basis of archaeological and palaeontological remainders)**

Speciality: 5505.02 – Archaeology

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COMMON DISPOSITION OF DISSERTATION

Urgency and learning degree of subject. The emergence and migration of Homo genus is one the main problems which archaeological and anthropological sciences learn. Stone age archaeology and paleoanthropology which is one of the main brach of physical paleanthropology have especially great role in this field. Achieved specimens of material culture and palaeontological residues gave opportunity to us to investigate evolution, migration and emergence forms and conditions of Homo. But because of being very small number paleoanthropological remains and preserving very bad there are great voids and conflicting opportunities in determining of their physical structure. That is why founded each little paleoanthropological remain has great scienfitic importance.

In deposit of Sarmat period (25-12 million years ago) flora and fauna existed in region, especially at the II part of III period expanded scale of dry land. At the end of III period isthmus of the Caucasus rose, the Black Sea and the Caspian Sea were separated and form like to modern relief arose. Researches which were carried out at Udabno at the 40th years of XX century let to approach region as an evolution zone.

Though evidences about migration and emergence of early Homo genus was not found during previous 30-40 years time interval in region, researches which were carried out under the head of M.M. Huseynov first time showed emergence of early Homo genus at the Early Pleistocene epoch in region and “Guruchay culture” term was included to scientific circulation which was belong to them.¹

In recent years researches which were carried out under the head of A.A.Zeynalov at Garaja Paleolithic site which situate at the site of Mingechevir reservoir, as well as researches in Central Dagestan (Aynikab I, Muxkay I and Muxkay II) let to gain full information

¹Гусейнов, М.М. Ранние стадии заселения человека в пещере Азых // – Баку: Ученый записки АГУ им С.М. Кирова, серия истории и философии, – 1979. №4, – с. 70-72.

about spreading areal of this culture and emergence and migration of its founder.²

Researches which were carried out in Dmanisi which is the oldest site of Homo erectus in the South Caucasus, affirmed M.M.Huseynov's ideas and brought new approach in evaluation of Homo. So, gained specimens which were the oldest patterns abroad of Africa, were opposite at that time conception of migration and evaluation and demanded new approach. So the South Caucasus should be investigated one of areas where Homo erectus spreaded and evolved.

In the South Caucasus material remains of evolution and migration of Homonid were revealed at the V layer of Azykh, Kudaro I and III, Tsona caves, at south bottoms and hangs of the Great Caucasus and at open-air sites-Garadyuz, Saryburun, Saggizli, Garaja and paleontological remains were revealed at the IV level of V layer of Azykh and the V b layer of Kudaro 1 caves. These made necessary investigation of emergence and migration areas of Homo heidelbergensis in the South Caucasus. Generally there are antagonistic cases in investigations about matter of belonging of species in human Middle Acheulean. They demand approach on the basis of modern investigations and methods. Palaeontological residues about Homo heidelbergensis which were found in the South Caucasus indicated that region is one of main emergence and migration area. As we know one of species which sprang up from Homo heidelbergensis is Homo neanderthalensis. In the South Caucasus sites of Homo neandhertalenses are consist of sites of basins of the Kondalanchay rivers, upper basin of the Araz river, the Talysh mountains, basin of the Tartarchay river, basins of the Hasansu-Incasu-Tavadoy rivers, groups of the Ag gol lake and complexes of Tsopi, Tsutskhvatı, Djurchula-Kudaro, Tskhinvali, Takhaltitelı. It should be noted that remains of classic neanderthals were discovered in Imeretia region too. So, region should be investigated from the zone aspect of emergence of Homo heidelbergensis and evolution to Homo neanderthals.

²Zeynalov, A.Ə., Kulakov, S.A., İdrisov, İ.A. Mingəçevir su anbarının ətrafında aşkar edilən yeni paleolit abidələri // – Bakı: Azərbaycanca Arxeoloji Tədqiqatlar – 2013-2014, – 2015. – s. 36-41.

One of main matters which modern anthropology science learns is connection of Homo neanderthalensis with Homo sapiens sapiens and in generally disappearance problem of this species. From this point of view researches which were investigated in region rouse interest. But regret that at some researches as opposite to available science outcomes were written that “neandhertals were transformed to Homo sapiens sapiens” in this region. At the South Caucasus sites concerning Homo sapiens sapiens or Anatomically modern human (AMH) was registered at the Little Caucasus, at the sea coast of the Black Sea (including basin of the Ingur river) and at the basin of the Rioni-Kvrila rivers. Although their material remainders human remain about the Upper Paleolithic period were found at the region they were not fit for research. But, remains which were found at Bondi cave in recent years are necessary findings.

As mentioned above Paleolithic sites which were discovered in the South Caucasus give opportunity to tell that beginning from Oldovan culture here had been continuous development of human culture. So, conducted researches brought out that region had been continuous emergence and migration zone since Early Pleistocene.

M.Huseynov, M.Mansurov, G.Ismayilzada, A.Jafarof, C.Rustamov, F.Muradova, A.Zeynalov, D.Haciyev, R.Gasimova, K.Mammadov, C.Ismayilov.and as well as S.Zamyatnin, V.P.Lyubin, L.Gabunya, N.Burchak-Abramovich, A.Vekua, E.Gabashvili, G.Nioradze, M.Nioradze, E.Tusabramisvili, N.D.Tusabramisvili, D.Lordkipanidze and other scientists had been profound research in learnig stone age archaeology and palaeontology of the South Caucasus. At the result of conducted researches were afirmed that region had been main setllement zone from beginning Early Pleistocene.

Object and subject of research. The object of research is the study of findings obtained as a result of archeological and paleoanthropological research conducted in the ancient Stone Age camps in the South Caucasus region. The subject is the distribution and evolution of the genus Homo in the South Caucasus region.

The subject of the research is the study of artifacts and paleoanthropological remains obtained as a result of archeological and

paleoanthropological research conducted on the ancient Stone Age sites in the South Caucasus region.

Goals and duties of research. Goal of research is to investigate settlement, evolution and migration problems of hominoid in the South Caucasus. Generally, duties of research consist of the following matters.

* Glancing the results of researches carried out in this field in recent years in the world, compare gained acceptable results with the results of researches carried out about problems related the South Caucasus till this time.

* Define migration and settlement directions of Homo erectus species in the region.

* Define migration and settlement directions of Homo heidelbergensis species in the region.

* Define migration and settlement directions of Homo neanderthalensis species in the region.

* Define migration and settlement directions of Homo sapiens sapiens species in the region.

Methods of research. Methodological base of research forms modern scientific works reflecting results of investigations about subject carried out in our country and in the world. Empirical (comparison, measurement) and theoretical (generalization, analysis, synthesis) methods were used for this purpose.

Provisions submitted for defense:

• The South Caucasus region is one of the main evolutionary areas for hominoids. Research in this direction should be continued.

• Early species of the genus Homo, have been two main migrations flow and settlement using the Caucasus Corridor.

• The region is one of the areas where Homo heidelbergensis is widespread and Homo neanderthalensis has evolved.

• The migration of anatomically modern humans occurred after the extinction of Homo sapiens neanderthalensis and has nothing to do with their extinction.

Scientific innovations of research. The main scientific innovations of the research are:

- For the first time in the dissertation the question of the place of the South Caucasus in the origin and distribution of the genus Homo and its species has been studied in a complex form;
- The results of research conducted so far have been summarized and a modern scientific conceptual approach has been put forward;
- The dissertation was written on the basis of archeological and paleoanthropological materials;
- The evolution of different species of Homo (Homo erectus, Homo heidelbergensis, Homo neanderthalensis and anatomical modern man), their social lives, as well as technological typological changes in their tools were studied taking into account the paleoclimate and paleogeography of the region.

Theoretical and practical significance of research. Research has great importance in learning of stone age history of the South Caucasus as well as in investigation of region from the migration and evolution aspect. On the other hand, it has practical significance in writing of textbooks and monographs about stone age archeology, paleontology of the South Caucasus. Research is significant for specialists conducting research in this field students.

Source literature of dissertation. In the investigation of subject were based on more than three hundred archaeological and anthropological literatures which were written in Azerbaijan, Turkish, Russian, English and French languages, reports, dissertatons and as well as electronic sources.

Approbation of dissertation. Dissertation was fulfilled in “Scientific exhibition” department of the Institute of Archeology and Ethnography of ANAS. Main results of research were published in three scientific magazines (six articles) including an article in a foreign magazine as recommended Higher Atestation Comission as well as lectured at three internatonal conference.

Structure of dissertation. The dissertation consists of an introduction (26.135 characters), four chapters (Ch. I 66.991 characters, Ch. II 63.372 characters, Ch. III 61.435 characters, Ch. IV 50.738 characters), conclusion (7.234), list of references and appendices. The dissertation consists of 278.880 characters.

MAIN CONTENT OF DISSERTATION

In the introduction grounded urgency of investigation problem of the South Caucasus from paleoanthropological aspect, showed chronological framework, argued about learning degree of subject till his time as well as reflected theoretical and methodological bases, scientific newness, practical significance, object, source literature and approbation of research.

The first chapter of **“The Evolution of hominid, emergence of the early homo species and its distribution through the Southern Caucasus”** consists of four paragraphs. The first paragraph of the first chapter **“The Emergence and development of hominid”** has been focused on the evolution track of prehominin from hominids. It should be mentioned that the Southern Caucasus had been one of the areas where hominid used to live in the region. This fact is proved by the remains discovered in 1939, at the Jeyranchol and Eldar lowlands centre – Udabno, near Keshikchi – Gareja monastery complex. As a result of investigations on the tooth remains from Udabnopithecus, it was evidenced that the extinct hominid of Hominidae had existed in the Southern Caucasus during late Miocene period (9.098-8.769 million years ago). Sample discovered from Udabno is pretty much similar to the extinct Dryopithecus of Dryopithecines species of Homininae subspecies with its morphological features, but according to its mammalian phase, it is of the same period with the Ouranopithecus species of Graecopithecini types of Homininae subspecies. However, Udabno-pithecus’s stratigraphical position is the same in all publications: upper Miocene or Sarmatian.³

The second paragraph **“The Evolution of Hominin, emergence and migration of Homo species”** of the first chapter mainly focuses on the evolution track of Hominins to Homo. Sahelanthropus tchadensis and Orrorin tugenensis which existed 7 million years ago refer to the chimpanzee human division period with its morphological

³Məmmədov, Y.V. Hominoidin meydana gəlməsi və yayılması sistemində Cənubi Qafqazın yeri: Dryopithecus gardziensis // – Bakı: Gənc Alimlərin Əsərləri, – 2015. № 12, – s. 225-232.

features. *Ardipithecus* existed 5,6-4,4 million years ago is considered as transition to *Australopithecus*. However, not any single Hominid remains referring to the gap of 1.5 million years were occurred. Although, *Australopithecus* remains discovered at the Eastern Africa date back to the 4,2-2 million years ago, they seem to be existed approximately 3-2 million years ago at the South Africa. The process of evolution took its rapid development since that period. Existence of different species together had also been observed.⁴ In 2013, the most ancient fossil – lower jaw bone of African species had been discovered in Ethiopia, the region of Afar, Ledi-Geraru. The fossil (LD 350-1) dates back to the 2.80-2.75 million years ago is considered as the most ancient fossil ever found until now. It should be mentioned that the most ancient remains of *Homo habilis* had dated back to 2.4 million years ago.⁵ It is evident that early pleistocene lithic industry is recognized as “Oldowan industry” by Mary Leakey since 1966. But, in 2011-2015, lithic tools had been discovered at the shores of the Lake Turkana (Lomekvi-3) date back to the 3,3 million years ago. They are 700 thousand years older than the most ancient Oldowan samples ever discovered in Gona site of Ethiopia. Those tools had probably been prepared by *Kenyathropus platyops*.

It should be mentioned that *Kenyathropus* as usually classified like *Australopithecine* type existed 3.2–3.5 million years ago, by referring it to the *Homo* species due to result of some investigations its development is advanced by 3 millions years. Consequently, obtained samples can change present hypothesis on the evolution of early *Homo* type, or it could be hint to the novel archaeological culture. It is already mentioned that alternative pleistocene lithic tool industries like “Pre-Oldowan” and “Lomekvian” technologically differ from Oldowan specimen, but whether or not these differentiations impact

⁴Məmmədov, Y.V. Hominidin təkamülü və *Homo* nəslinin meydana çıxması // – Bakı: Azərbaycan Arxeologiyası, – 2016. – cild 19, № 1, – s. 9-22.

⁵Di Maggio E. Late Pliocene fossiliferous sedimentary record and the environmental context of early *Homo* from Afar, Ethiopia / E. Di Maggio, C. Campisano, J. Rowan [et al.] // *Science*, – 2015. v. 347 (6228), – p. 1355-1359.

on important behavioural diversity through evolution is still a question.⁶

The third paragraph of the first chapter “**Eopleistocene climate Changes in the South Caucasus and its influence on migration**”, focuses on temperature changes, the region’s fauna and flora. According to the concept of early homo migration from Africa, they spread to the Middle East and the Arabian Peninsula and via the Caucasus corridor approximately 2 million years ago. There was a favorable climate in the region for this. During the Eopleistocene, the region was dominated by lowlands and moun-tains, and the warmer climate than today had been favorable to the settlement of the founders of the pebble stone culture. The average temperature was 3-5° C in January, 27-28 ° C in July, and the average annual rainfall was 1,500 mm. The region was rich with its flora and fauna. At the end of the Eopleistocene, the western shores of the Caspian Sea reached the lower reaches of the Aghstafachay.

The fourth paragraph of the first chapter “**Early Homo camps of the South Caucasus**”, consists of four paragraphs. In the 70s of the XX century, the lower layers of the cave Azykh and later the Dmanisi and Garaja early Pleistocene camps were also recorded and investigated. Investigation is underway in both settlements.

The first part of the fourth paragraph of “**The first stage of settlement in the cave Azykh (Homo ererctus) (layers VII-X)**”, based on archeological materials obtained from layers VII-X, deals with the settlement of early species of the genus Homo. Artifacts of pebble stone culture (Oldowan) discovered during archeological excavations (32 m2) in layers VII-X in 1974-1982 (1974-1976, 1980-1982) belong to the first stage of occupation in the cave.⁷

Primitive people who migrated from Africa to Eurasia (probably one of the species of Homo erectus) settled in the Cave Azykh, approximately 1.8-1.5 million years ago. However, advanced form of the discovered tools, as well as geological surveys, suggest that they

⁶Shea, J. İnsan evrimində taş alətlər. – İstanbul: Doruk yayıncılıq, – 2020, – 312 s.

⁷Гусейнов, М. М. Новые археологические открытия апшеронского возраста в нижних слоях пещеры Азых // – Москва: – А О 1975 г. – 1976. – с. 500.

were settled in the region at least 2-2.4 million years ago. The tools discovered in Azykh, unlike other materials of the relevant period, were classified as a distinct cultural complex – “Guruchay culture”. This culture is not limited to the Guruchay valley. Its traces have also been recorded at the Garaja Paleolithic site and in the North Caucasus. This allows us to identify one of the primary migration routes in the Caucasus.⁸

The second part of the fourth paragraph of “**Dmanisi camp: Homo erectus georgicus**” comprizes the investigations, homo remains, and material remains. During excavations in the medieval city area in 1983-1987, fossils of the early Pleistocene period and the first lithic tools characteristic to the period were discovered. Archaeological excavations at the Dmanisi Lower Paleolithic Camp since 1991 have revealed more than 60 skulls and postcranial bones belonging to at least five individuals from 1.85–1.78 million years ago.⁹ The remains of Dmanisi resembled *H. habilis* more than *H. erectus* specimens. That is why the Dmanisi remains obtained in 1999–2001 were presented as a separate subspecies within the *Homo* species and were named “*Homo georgicus*” (“Georgian man”) after the country in which they were discovered. However, the analysis of Dmanisi fossils contradicted the conclusion about the anagenetic development of *Homo* from *H. habilis*. Investigations confirm that the early *Homo* species lived sympatrically for several hundred thousand years in East Africa. This indicates the separation of individual lines from the common ancestor, and this process was cladogenetic, not anagenetic. That is, a subgroup of the *habilis* population, or the common ancestor of *habilis* and *erectus*, gradually became new *H. erectus* species as a result of reproductive isolation from the main population group. As a result, the specimens found in

⁸ Məmmədov, Y.V. Erkən homo nəslinin Cənubi Qafqaza miqrasiyasına dair // Ümummilli lider Heydər Əliyevin anadan olmasının 94 – cü il dönmünə həsr olunmuş Gənc Tədqiqatçıların I Beynəlxalq Elmi Konfransı. – Bakı: Bakı Mühəndislik Universitetinin nəşriyyatı, – 05 – 06 May, – 2017, – s. 1091-1093.

⁹ Мамедов Я.В. Проблемы миграции в период раннего плейстоцена на Южном Кавказе //– Днепр: Грани, – 2018. Т. 21, № 2, – с. 99-106.

Dmanisi were identified as one of the earliest subspecies of *H. erectus*, along with other early Homo species, and were named “*Homo erectus georgicus*”.¹⁰ This is in fact a factual confirmation of M.M.Huseynov’s views in the 1970s. about the spread of *H. erectus* in the South Caucasus approximately 2 million years ago.¹¹

The third part of the fourth paragraph “**Garaja Paleolithic Camp**”, discusses the investigations conducted by A.A.Zeynalov at the site of Garaja in 2012-2017 and the importance of Garaja. It is the first time in Azerbaijan paleolithology that large two choppers (weighing about 4 kg) have been found in the Absheron deposits of Azerbaijan, ie in layers 1 million years and older. Thus, the results of the investigations show that in the early Pleistocene, homo erectus type people spread north through the ancient settlements of Azykh, Garaja and Dagestan, while others spread through the Dmanisi to the North Caucasus and from there to Asia.

The fourth part of the fourth paragraph “**Manufacture of tools**” analyzes the tools obtained from the VII-X layers of the cave Azykh, the Dmani camp and the lower layer of the Garaja camp.

Artifacts from layers VII-X of the cave Azykh give a simpler, amorphous and archaic effect than the technical complex of the I layer of Oldowan. This may be due to the fact that the primitive people in this region began to live in accordance with the environment in which they found themselves, and to master the technological principles relevant to the new natural conditions, which are radically different from the technical ones.¹²

In the VII-X layers of the cave Azykh, local raw materials – quartzite rock fragments were used, the pebble stone is rare. The base of the tools obtained from these layers is made by grinding one end of the rock and conglomerate tubers on both sides. Systematically

¹⁰Məmmədov, Y.V. Dmanisi ibtidai insan düşərgəsi //– Bakı: Azərbaycan Arxeologiyası, – 2014. – cild 17, № 1, – s. 9-18

¹¹Məmmədov, Y.V. Homo erectus georgicus // – Bakı: Azərbaycan Arxeologiyası və Etnoqrafiyası, – 2015. – cild 2, s. 11-19.

¹²Mənsurov, M.M. Azərbaycan paleolitində keçid dövrləri // – Bakı: Azərbaycan tarixi, arxeologiyası və etnoqrafiyası problemlərinə dair. – 1997, s. 118-121.

developed tools are unique. Small cracks have formed in one corner of the large stone balls, on one side of the face of small tools, or in the corner.

The method of making tools from layer VII differs from layer VIII-X, the raw material composition of tools and sources of deposit have changed. I think this layer should be analyzed separately, not together with layers VII-X. This is because the early Acheulean tradition is observed in this layer. In my opinion, the climate change that took place between layers VII-VI did not allow this cultural layer to continue. It is suggested that the VII-X layers belong to a different archeological culture than the upper layer (layer VI of the Early Acheulean period) and “classical” Oldowan, depending on the color, composition and condition of the surface and named as "Guruchay Archaeological Culture". One of the reasons for the new culture was “two-handed chopper gigantolites” weighing 4-4.5 kg, which MM Huseynov called “giantolites”. In general, 3 such tools were found in the VIII layer of the cave. However, some of his opponents believed that the discovery of only a few choppers and only one settlement did not justify a separate culture. In 2012, a large two-group choppers discovered for the first time after Azykh at the Garaja Paleolithic site, 300 km north of the Cave Azykh, proved this to be true. In total, 8 copper-gigantolites have been found around the Mingachevir reservoir so far.¹³

More than 10,000 stone materials were found at the Dmanisi site. There is no significant difference in the tools obtained from different layers, stone processing, type of preparation and raw materials. Local rocks or boulders in the nearby riverbed were used as raw materials. There are cores, choppers, multi-shaped tools, clippers, chopper-to-axe transition shapes, beak-shaped tools, and shredded tools.¹⁴

¹³Zeynalov, A.Ə., Kulakov, S.A., İdrisov, İ.A. Mingəçevir su anbarının ətrafında aşkar edilən yeni paleolit abidələri // – Bakı: Azərbaycanca Arxeoloji Tədqiqatlar – 2013–2014, – 2015. – s. 36-41.

¹⁴Ниорадзе, М.Г., Ниорадзе, Г.Н. Раннепалеолитическая стоянка Дманиси и ее Каменная индустрия // – Баку: Археология Кавказа, – 2011. № 4, – с. 103-148.

The second chapter **“Origin and distribution of archaic homo sapiens or homo heidelbergensis in the South Caucasus”** consists of four paragraphs. The first paragraph **“Origin, Evolution and Distribution of the Homo Heidelbergensis Species”** discusses the formation and migration of this species. Although similar fossils dating to 600,000-200,000 years ago belong to the genus H. heidelbergensis, there are speculations that the first specimens of the species appeared 1.3 million years ago.

The second paragraph **“Lower-Middle Pleistocene (first half) climate change in the South Caucasus and its influence on migration”** discusses climate change. The transition from the Eopleistocene to the Pleistocene epoch and the beginning of the Lower Pleistocene epoch intensified the process of cooling and aridity, volcanoes became more active, mountain heights increased, floodplains decreased, fauna and flora became poorer, evergreen plants and animals disappeared, cold-resistant animals are widespread.

The third paragraph **“Early and Middle Acheulean Camps in the South Caucasus”** consists of five parts. This section deals with material remains and paleoanthropological remains obtained as a result of investigations conducted in caves and open ancient settlements. The first part **“The second phase of occupation in the cave Azykh (layers VI-V)”** deals with the occupation in the cave Azykh during the Acheulean period. In the VI layer, in accordance with the change in the physical type of people, there were changes in the composition of the tools, fragmentation became widespread. Layer V of the cave Azykh differs from the early Acheulean layer in lithological composition, color, thickness and composition of archeological material. The stone materials are 5-6 times less than the early Acheulean layer.

In the second part **“Early Acheulean camps in the southern foothills and slopes of the Greater Caucasus”**, in 2005 in the Sheki-Zagatala and Guba-Khachmaz zones under the head of A.A.Zeynalov, M.M.Mansurov’s head in the end of 2011 in Shamakhi-Ismayilli and Gabala regions, 2011, in 2012-2013, together with Korean specialists who continued the city of Gabala, under the head of A.A.Zeynalov

and M.M.Mansurov, as well as under the head of N.M.Museyibli, in 2014, from the archaeological survey near Dizakhli on the outskirts of Gabala region, under the head of M.M.Mansurov in 2012-2013, Paleolithic archeological expedition of Gakh, Balakan, Zagatala, Khorgaya (Gakh region), Mahamalar caves (Balakan region) and Cim-Cimakh rocky shelter (Zagatala region) used in the mentioned regions were mentioned. As a result of the archaeological excavations a Paleolithic cave camp for the first time in the south of the Greater Caucasus had been attested.¹⁵

The third part “**Kudaro-1, Kudaro-3, Sona caves**”, deals with the investigations carried out in Kudaro, Sona in 1955-1990 under the head of V.P Lyubin. According to the results determined by the TL (thermoluminescence) method, the V layer of Kudaro-1 belonging to the Acheulean period was found to be 360 ± 90 thousand years ago, the b layer 350 ± 70 thousand years ago, and the a layer 245 ± 29 thousand years ago. mindel-riss or riss-wurm refers to the period between glaciers.

The fourth part “**Open-type Acheulean camps**” is based on the investigation conducted by M.M.Mansurov along the right bank of the Kura River in the 1960s, in the northeastern foothills of the Lesser Caucasus, in the lower mountain zone and on the left bank of the Kura. as well as the investigations conducted by A.A.Zeynalov in Garaja.

Thus, middle Acheulean camps were recorded in both cave and ancient open settlements. Archaeological and paleoanthropological remains suggest that the South Caucasus is one of the regions where *H. Heidelbergensis* species settled early, spread, and gradually evolved into *H. neanderthalensis*.

The fifth part “**Manufacture of labor tools**” analyzes labor tools obtained from layers VI-V of the cave Azykh, the Khorgaya rock shelter, around the Gabala region, ashelian sites of Jeyranchol such as

¹⁵Mansurov, M.M. Paleolit arxeoloji ekspedisiyası Böyük Qafqazın cənub dəstəsinin 2013-cü il çöl-tədqiqat işləri / M.M.Mansurov, M.T.Cəfərov, N.Ə.Alışov [və b] // Azərbaycanca Arxeoloji Tədqiqatlar – 2013-2014. – Bakı: – 2015, – s. 42-49.

Garaduz, Garabig, Sariburun, Saggizli and the second layer of the Garaja camp.

In the early Acheulean period, people lived in caves and open-type camps. The period is characterized by initial experience in the selection of nucleus, percussion, surface making technique, impact for the preparation of preparatory materials, and this is an initial practical technical achievement. In addition to unsystematic napping and fragments, in rare cases, remains of slab preparation were found.

Although disc-shaped cores predominate in the Middle Acheulean period, there are also multi-shaped nucleuses with a single-impact surface and two-impact surfaces. Fragmentation in the middle ashelian was fully formed. In addition to fragments of various shapes, the method of obtaining large and medium-sized slab, as well as triangular fragments were mastered. The impact surface is smooth polished.

The fourth paragraph **“Paleoanthropological remains of the Middle Acheulean period”** consists of two parts. This subchapter deals with the paleoanthropological remains found in the V layers of the Cave Azykh and Kudaro-1.

The first part **“Azykh man”** is dedicated to the paleoanthropological study of the jaw remains found in the cave Azykh and its location in the Homo system. The lower jawbone found in the cave Azykh in 1968 was investigated by paleoanthropologist DV. Hajiyev and anthropologist R.M.Gasimova. Paleoanthropological study of the Azykh man demonstrates that the eastern part of the Lesser Caucasus was home to ancient humans close to the last group of Homo heidelbergensis developed into Neanderthals in the Middle Acheulean period, and is significant in the scientific study of the physical structure of people living in the South Caucasus.¹⁶

¹⁶Гаджиев, Д.В, Гусейнов, М.М. Первая находка ашельского человека для СССР (Азербайджан, Азыхская пещера) // – Баку: Ученый записки Азгосмединститута. – 1970. т. 31, – с. 13-21; Kasimova, R. Anthropological research of Azykh Man osseous remains // Human Evolution, – 2001. v.16, – p. 37-44.; Kasimova, R. Anthropological research of Azykh Man osseous remains // Human Evolution, – 2001. v.16, – p. 37-44

Part of the jawbone belongs to a female aged 20-25 (18-20). It belongs to the circle of *Homo heidelbergensis*, which transforms in the direction of *Homo sapiens neanderthalensis*; geologically it belongs to the Mindel-Riss period, archeologically it belongs to the end of the Middle Acheulean culture. Materials of a similar period have been found in Morocco (Morocco) (Sidi-Abdurahman), Germany (Steinheim), England (Swanscomb), Italy (Sediadel-Dyavolo) and other areas, and they all belong to the genus *Homo heidelbergensis*.¹⁷

The second part **“Remains of Kudaro-1”** deals with three homo teeth (two incisors and at least one tooth) discovered in 1959 and 1984 in the middle V Acheulean layer of the Kudar-1 cave.

The third chapter **“Origin and spread of Homo sapiens Neanderthals in the South Caucasus”** consists of four paragraphs. The first paragraph **“The Origin and Migration of Homo sapiens Neanderthals”** discusses the formation and migration of Neanderthals as a species. A comparison of Neanderthal and modern human DNA shows that they shared the same root about 400,000 years ago. Therefore, Neanderthals are defined as a subspecies of *H. sapiens* and named as *“H. Neanderthalensis”* or *“H. sapiens neandertalensis”*.¹⁸

The second paragraph **“The Second half of the Middle Pleistocene, Upper Pleistocene, climate change and its impact on migration”** discusses climate change in the second half of the Middle Pleistocene and the second half of the Upper Caspian geological period. During this period, there was a global cooling of the climate (the period of the Rice Glacier 300-125 thousand years ago). Glaciers are formed in the upper part of the Lesser Caucasus at an altitude of 2,000 meters, subalpine at an altitude of 2000–1200 m, and the upper border of forests at an altitude of 1200-800 m.

¹⁷Məmmədov, Y.V. AZIX adamının hominid sistemində yeri // Qarabağın arxeoloji irsi. Beynəlxalq Elmi Konfransın materialları. – Bakı: Af Poliqraf, – 28-30 Noyabr 2016-cı il, – s. 19-22.

¹⁸Məmmədov, Y.V. *Homo sapiens neanderthalensis*: meydana gəlməsi, miqrasiyası və nəslinin kəsilməsi // Ümummilli lider Heydər Əliyevin anadan olmasının 93-cü ildönümünə həsr olunmuş Gənc Tədqiqatçıların IV Beynəlxalq elmi konfransının materialları. – Bakı: Qafqz U nəşriyyatı, – 2016, – s. 1657-1658.

The third paragraph so-called “**Mousterian settlements**” are the settlements discovered so far in the region. Mousterian sites in the territory of Azerbaijan are divided into several groups according to their location: It consists of Guruchay-Kondalanchay basins, Araz river upper basin, Talysh subtropical mountains, Tartarchay basin, Hasansu-Incesu-Tavadoy river basins and Aggol groups. Sites of Guruchay-Kondalanchay basin, III layer of the cave Azykh and Taglar cave camps, Araz basin Nakhchivan Drilling cave camp, Talysh zone Buzeyir, Alar, Zuvandchay caves, Hasansu-Injesu-Tavadoy rivers , Kayali (Kakildagh), Chaxmagli, Kochasgar, Kekil Gadirdere, Kemarli, Kayali (Kakildag), Chakhmagli, Kochasgar, Kekil camps, Aggol group includes tools specific to the period recorded during the Karabakh sowing campaign.

According to the typological features of the sites of the Middle Paleolithic culture of Georgia, five groups of Mousterian have been identified: Sopi complex; Sutsxvati complex; Cruchulo – Kudaro complex; Tskhinvali complex and Shaltsitela complex.

In the first part of the third paragraph “**Manufacture of tools**” discusses the analysis of recorded labor tools the last Acheulean and Mousterian camps (III layer of the cave Azykh, Garabig in Jeyranchol, right bank of the Kura in the lower mountain area, Shishguzey, Sariburun, Gadirder, Kekil and Mingachevir reservoirs on the shores of Damli, and Karacha). During this period, massive elongated slabs with thick, smooth percussion fragments and corresponding cores are found. There are no choppers, percussion tools or hand choppers among the large tools.

Tools from the Mousterian period are made of flint, shale and andesite, most of which are flint and shale. They used materials brought from nearby areas as raw materials.

The fourth paragraph “**Neanderthal Remains in the South Caucasus**” consists of four semi-chapters. With the exception of the Neanderthal remains found in the Cave Azykh, all known Neanderthal remains in the South Caucasus were obtained from the Middle Paleolithic settlements of the Imeretia region. These bones are incomplete and have no sense of burial.

The fourth chapter **“Origin and spread of Homo sapiens sapiens or anatomical modern human in the South Caucasus”** consists of four paragraphs. The first half of the chapter **“Origin of Homo sapiens sapiens or anatomical modern human”** deals with the formation and migration of Homo sapiens sapiens. According to research, anatomical modern humans (AMH) or anatomical modern Homo sapiens evolved from “archaic” homo sapiens species in the Middle Paleolithic 200,000 years ago.

The second paragraph **“Neanderthal extinction in the South Caucasus and the migration of Homo sapiens sapiens”** is devoted to the study of the problem mentioned in the second paragraph. According to the Baisian model in the Western South Caucasus, the history of the boundary between the Middle and Upper Paleolithic is about 42,8 thousand years (39,000 years ago according to the radiometric history of AMS and TL). These results demonstrate that Neanderthals did not spread to the west of the South Caucasus after this period, and this confirms the concept of the simultaneous extinction of Neanderthals in the North Caucasus, as well as in other regions of Europe. It turns out that AMH spread in the west of the South Caucasus several thousand years after the extinction of Neanderthals (34,000 years ago according to the radiometric history of AMS and TL, 39,000 years ago according to the Baisian model) and almost did not meet.¹⁹

The third paragraph **“Upper Paleolithic camps in the South Caucasus”** discusses the investigation of the mentioned camps. Upper Paleolithic specimens in the territory of Azerbaijan had been discovered in Damjili camps (according to the archaeological investigations conducted in the 50s of the last century), Taglar (II layer), Zar (II-III layers), Zuvandchay caves (III layer), Gayarasi camp (Kichikdash area of Gobustan), as well as Yatag yeri (located in the northern part of Ajidara between I and II Shikhli villages of Gazakh region) and in open air camps in Surakhani (Musallah place zone) and

¹⁹Pinhasi, R. Revised age of late Neanderthal occupation and the end of the Middle Paleolithic in the northern Caucasus / R. Pinhasi, T. Higham, L. Golovanova [et al.] // PNAS, – 2011. v.108, – p. 8611-8616.

in Vilashchay valley of Masalli. Upper Paleolithic period in the territory of Azerbaijan dates back to 35-11 thousand years ago.

New Upper Paleolithic layer was not determined in the new excavations carried out in 2016-2019 in the Damjili camp. However, as research continues it is a question of further archaeological investigations.²⁰ In the territory of Georgia, the Upper Paleolithic sites are concentrated on the Black Sea coast (including the Ingur basin) and in the Rioni-Kvrila basin, at an absolute altitude of 800-900 m.

In the first part of the third paragraph **“Manufacture of tools”**, the tools obtained in Damjili camps, Taglar, Zar, Zuvandchay caves, Gayarasi camp, open air camps in Yatag Yeri and Surakhani (Musallah place area) and Masalli's Vileshchay valley were analyzed. There are technical and typological similarities in the Upper Paleolithic complexes of the Caucasus and neighboring regions. In the first stage of the Upper Paleolithic, the disc was transferred to prismatic cores, mainly slabs and triangular fragments were used. During this period, the slab, which was the main form of fragment, became narrower, elongated, thinner in cross section, and many were prepared without slab elements.

In the second stage of the Upper Paleolithic, the slab, which are the main preparatory materials, become narrower, elongated, the cores change their size and shape, shrink, become thinner, and take the form of a prism. The fragments are slab-like, starting at this stage micro-slab have formed.²¹

The fourth paragraph **“Paleoanthropological Remains of the Upper Paleolithic in the South Caucasus”**, deals with the investigation of the mandibular part found in Devishkhvrelı (10,000 years ago), several skull fragments found in Sakajia, and tooth remains found in Bondi Cave, as well as during road construction in

²⁰Mammadov Y.M. Archaeological investigations at Damjili cave (2015-2018) // Proceedings of the Second International Scientific Conference Education and Science in a Changing World: Problems and Prospects for Development. – Dnipro, – Oxotnik, – March 27-28, – 2020, – p. 168-169.

²¹Mənsurov, M.M. Azərbaycan paleolitində keçid dövrləri // – Bakı: Azərbaycan tarixi, arxeologiyası və etnoqrafiyası problemlərinə dair. – 1997, – s. 118-121.

1975 in the central part, two fragments of a human skull found on the left bank of the Zangi River canyon are described.

The conclusion of researches the following:

The South Caucasus is one of the major evolutionary zones of the hominoid. Although speculation has been denied for many years, the first confirmation of this idea was the discovery of hominoid remains at the end of the last Miocene geological period (9.098–8.769 million years ago) discovered during excavations near the Keshikchidag temple in Cheyranol in the 1940s. However, the place of the obtained remains in the hominoid system cannot be considered fully determined. Thus, although it is clear that the discovered sample belongs to the extinct family of the Homininae subfamily, it has not been fully determined whether it belongs to the genus *Dryopithecus* or the genus *Ouranopithecus* of the family *Graecopithecus*. Because, according to its morphological features, it belongs to the first period, and according to the mammalian stage, it belongs to the same period as the second. In any case, it is undoubtedly within the hominane subfamily, and there is no reason to classify it as a new species within the Hominoidae family, as noted in preliminary studies [1; 2; 5; 6]

Early *Homo* species, which appeared in East and South Africa 2.8 million years ago, spread across the Caucasus to China and Java. The first example of this in the South Caucasus is the “Guruchay culture”. Although the term introduced into the scientific literature by M.M.Huseynov was not accepted by some specialists, in recent years studies conducted in the Garaja settlement under the head of A.A.Zeynolov, as well as investigations done in the North Caucasus, showed the area of spread of this culture. This was the first direction of the spread of early homo in the Caucasus, approximately 2.1-1.2 million years ago [11; 12; 14].

The fossils found in Dmanisi are considered to be the most ancient *Homo erectus* found in Eurasia (1.78–1.85 million years ago). The gradual occupation of *Homo erectus* in Dmanisi during the Early Pleistocene was an important biogeographical event and a major evolutionary point. The investigation of Dmanisi fossils revealed a new approach to the evolution and migration of *Homo*. Thus,

investigations have shown that the development of Homo species is not anagenetic but cladiogenetic. As a result, the specimens discovered in Dmanisi were identified as “Homo erectus georgicus”, one of the earliest subspecies of H. erectus, which coexisted with other early Homo species on the shores of Lake Turkana, approximately 1.9 million years ago. Dmanisi fossils demonstrate that H. erectus migrated from Africa several hundred thousand years earlier than previously thought, and considered to be the second largest migration route in the region [3; 4].

Separated from Homo erectus in Africa 1.3-1 million years ago, the “archaic” Homo sapiens or Homo heidelbergensis developed as a separate species in the Middle Pleistocene and spread to other continents. Investigations have revealed that the South Caucasus is one of the zones of migration, spread and evolution of Homo heidelbergensis. Homo heidelbergensis, which lived here for about three hundred thousand years, evolved. In the region, their typical early Middle Acheulean culture was determined and investigated in the Cave Azykh, Kudaro 1, 3 and Sona caves, as well as in the open-type Garaduz, Sari Burun and Garaja camps [8].

Along with rich early and middle Acheulean samples, homo remains of the period were determined in the caves Azykh and Kudaro 1. The Azykh man may be considered one of the last members of the Homo heidelbergensis group in Eastern Europe. In my opinion, it is more appropriate to call it “Homo azykhensis”. Because there are enough examples of similar fossils found in Europe to match the name of the area where they were found [7; 10; 15]. The discovery of fossils of a similar period in the Kudaro-1 cave once again indicates that this region is inhabited by people close to the species Homo heidelbergensis and especially its latest evolutionary forms in Neanderthals.

Neanderthals, which formed a mixed turn in the evolution of Homo, evolved from H. heidelbergensis in Europe 350,000–300,000 years ago, formed as Homo neanderthalensis, and spread to Eurasia 250,000–32,000 thousand years ago. Dozens of caves and open

settlements have been recorded and investigated in the region. Neanderthal remains were found in seven caves along with tools.

A comparison of Neanderthal and modern human DNA reveals that they shared the same root approximately 400,000 years ago. However, investigations demonstrate that anatomically modern humans, or anatomically modern Homo sapiens, evolved from “archaic” homo sapiens 200,000 years ago in the Middle Paleolithic. Extensive paleoanthropological and paleolithic investigations of Neanderthal and anatomically modern human-Homo sapiens (AMH) relations during Late Middle Paleolithic and Early Upper Paleolithic in Europe, in the Middle East revealed that anatomical modern humans AMH migrated to these regions several thousand years before the complete extinction of Neanderthals and these species met each other. Thus, the first appearance of AMH in Europe was mainly before the extinction of the last Neanderthals, and the simultaneous coexistence of Neanderthal-AMH in some regions of Europe was approximately 45,000-40,000 years ago [9].

Prior to the investigations conducted in the last 20 years, archeological sites in the South Caucasus, the layers date back to 35-32 thousand years BC were considered to be evidence of the coexistence of Neanderthals and anatomical modern humans, sharing the Late Middle Paleolithic and Early Upper Paleolithic features. It was believed that in the early Upper Paleolithic, along with the formation of purely Upper Paleolithic tools, Mousterian – type tools were also used for a long time. This was evaluated as cultural transition from the Middle Paleolithic to the Upper Paleolithic. The essence of this widespread historical-evolutionary concept was that such a transition was a normative process associated with the Middle Paleolithic human groups that developed towards the Upper Paleolithic. Relative age was determined on the basis of geological structure in the Taglar, Zar, Zuvandchay and Damjili caves, where the Middle-Upper Paleolithic cultures were recorded in the territory of Azerbaijan. It has not been possible to study the relationship between these species in these caves because of the gap has been recorded or

identified between the cultural layers. This is relevant with the above concept [13; 16; 17].

The history of limit (boundary) between the Middle and Upper Paleolithic in the Imereti region is about 42.8 thousand years (37,000 years ago according to the radiometric history of AMS and TL). These results demonstrate that Neanderthals did not spread to the west of the South Caucasus after this period, and this confirms the concept of Neanderthals simultaneous extinct in the North Caucasus, as well as in other regions of Europe. It turns out that anatomical modern human arrived in the west of the South Caucasus several thousand years after the extinction of Neanderthals (34,000 years ago according to the radiometric history of AMS and TL, 39,000 years ago according to the Bayesian model) and almost never met. As in the North Caucasus, close to the western region of the South Caucasus, modern humans settled after the extinct of Neanderthals. While there are no examples of what can be called a “transition industrial stone” in the region compared to Europe and the Middle East, the results of the archaeological investigations of Upper Paleolithic settlements point only to modern humans, and the Upper Paleolithic archeological remains and behavioral records refer only to anatomical modern human.

Main maintenance of dissertation reflected author’s at following published scientific works:

1. Qafqazın antropoloji cəhətdən öyrənilməsi məsələsi // Gənc Alimlərin Əsərləri, 2013, № 7, – s. 317 – 321.
2. Cənubi Qafqazın daş dövrü paleoantropologiyası // Gənc Alimlərin Əsərləri, 2014, № 10, – s. 317 – 321.
3. Dmanisi ibtidai insan düşərgəsi // Azərbaycan Arxeologiyası, 2014, cild 17, № 1, – s. 9-18.
4. Homo erectus georgicus // Azərbaycan Arxeologiyası və Etnoqrafiyası, 2015, № 2, – s.11-19.
5. Hominoidin meydana gəlməsi və yayılması sistemində Cənubi Qafqazın yeri: Dryopithecus gardziensis // Gənc Alimlərin Əsərləri, 2015, № 12, – s. 225 –232.

6. Hominidin təkamülü və Homo nəslinin meydana çıxması // Azərbaycan Arxeologiyası, 2016, cild 19, № 1, – s. 9-22.
7. Ermənistan hökumətinin təşkilatçılığı ilə Azıx mağarasında aparılan beynəlxalq qeyri-qanuni arxeoloji qazıntılara dair / XXI əsrdə dünya elminin inteqrasiya prosesləri” Beynəlxalq Forumun materialları. Gəncə, 2016, – s. 372 – 374.
8. Homo heidelbergensis növünün meydana gəlməsi, inkişafı və yayılması sistemində Cənubi Qafqazın yeri / Gənc alimlərin I Beynəlxalq Elmi Konfransının materialları. Gəncə, 2016, – s. 133-136.
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13. Damcılı mağarasında arxeoloji qazıntılar (2016-2018) / Gənc Alimlərin III beynəlxalq elmi konfransının materialları. Gəncə, 2018. – s.103-106. (co-author).
14. Проблемы миграции в период раннего плейстоцена на Южном Кавказе / Научно-теоретический альманах «Грани». – 2018. – Т. 21. – № 2. – с. 99-106.
15. An investigation of the location of Azykh man remnant in hominid system // Azerbaijan Archeology, – 2019, Vol:22, Nuber 1, 2019, – p. 8-16.
16. Damcılı mağarasında 2018-ci ildə görülən çöl-tədqiqat işləri / Heydər Əliyevin hakimiyyətə gəlməsinin 50 illiyinə həsr olunan “2018-ci ildə Azərbaycanda aparılmış arxeoloji və etnoqrafik tədqiqatların yekunları” mövzusunda Elmi sessiyanın materialları, Bakı: Af Poliqrav, 2019, – s.8-9. (co-author).

17. Archaeological investigations at Damjili cave (2015-2018) / Proceedings of the Second International Scientific Conference Education and Science in a Changing World: Problems and Prospects for Development. Dnipro, Oxotnik, 2020, – p. 168-169.

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