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Short Communication

Consideration on The Current Data on The Initial Early Paleolithic Occupation of The Caucasus Region

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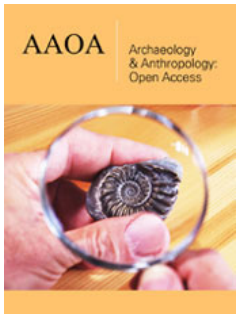

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Introduction

Until the beginning of this century the Early Paleolithic of the Caucasus region was represented by numerous Late Acheulian sites with flat and carefully flaked hand axes (second half of the Middle Pleistocene, i.e., after ~500 Kyr) [1] as well as the only much older Dmanisi site in South Georgia (Figure 1) yielding a typical Oldowan industry with primitive core-choppers (Figure 1) and flakes [2,3]. The Oldowan artifacts together with abundant paleontological and anthropological remains were found in the Early Pleistocene deposits dated to the interval of 1.85-1.76Myr that corresponds mainly to the Olduvai paleomagnetic subchron [3-5]. So, in the Caucasus there was a huge chronological gap between the Late Acheulian and the Oldowan stages of the Early Paleolithic occupation. However, over the past two decades the situation has changed dramatically, because several the sites of the Early Pleistocene ages, i.e., older than 0.8Myr, were discovered in different parts of the region (Figure 1).

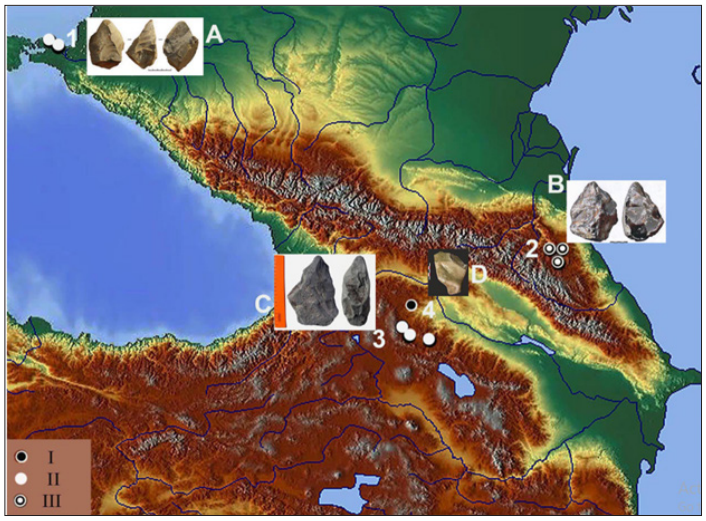

Figure 1: Distribution of the oldest early paleolithic sites in the caucasus region. I - Oldowan site; II - Early Acheulian sites; III - Oldowan - Early Acheulian sites. A - handaxe (Rodniki 1); B - pick (Muhkai 1, layer 6); C - handaxe (Muradovo, layer 6); D - Dmanisi, Bed B.

One of the groups of such old Early Paleolithic sites is in the northern part of the volcanic upland of the South Caucasus (Armenia), not far from the Dmanisi site (Figure 1). The key site was revealed in the large Karakhach quarry just near to the slope of the Javakhetian volcanic ridge fringing the Lori intermountain depression. The sediment section exposed in the Karakhach quarry contains the Early Pleistocene deposits subdivided into three units. Most artifacts were found in the lowermost Bed III (>8m) consisting of badly sorted gravels with interbedded paleosols and ash lenses [6]. These layers deposited mainly by temporal streams are overlapped by the multi-meter deposits of tephra, or tuff (Bed II) and slope wash (Bed I). The U-Pb dating of tephra and paleomagnetic readings for the entire sediment sequence showed that the artifact-bearing layers of Karakhach formed during the Olduvai paleomagnetic subchron and somewhat later, in the interval of 1.85-1.77MYR [7]. Hence, the Karakhach and Dmanisi sites existed in the same period of the Early Pleistocene.

The lithic collection of Karakhach (~3000 items) contains a considerable number of various large tools (>10cm) inherent to the Acheulian industries. The large tools of the Karakhach industry are dominated by picks and choppers. There are also a few dozens of crude hand axes and several large flakes, which are indicators of the Acheulian. Both the archaic aspect and the Early Pleistocene age of the industry allow to define it as the Early Acheulian. The knapping products (cores and flakes) are rare, and most of both large and small tools were made of natural slab-like pieces of local volcanic rocks (rhyodacite, rhyolite). Of special interest are some unusual tool types such as fan-shaped and sub-rectangular choppers, elongated bar-shaped chisels, chisel-ended picks etc. [6,8].

Near the Karakhach quarry there is another site named Muradovo where the lowermost part of the sediment section yielded the Early Acheulian industry with the same slab-like blanks and tool types including crude hand axes (Figure 1), picks, fan-shaped and sub-rectangular choppers, elongated bar-shaped chisels, and others. Moreover, these layers of Muradovo are also like the Bed III of Karakhach in the deposit structure. Therefore, despite the absence of absolute dates for the Early Acheulian layers of Muradovo, they are most likely synchronous with those of Karakhach [7]. Both lithic industries appear to belong to a single Early Acheuluan tradition [6,8]. Additionally, in the east of the Lori depression there is the Kurtan I site where a partly similar, but somewhat more developed lithic industry was found in the paleosols attributed to the interval 1.5-0.5 Myr [7].

Judging by scarce palaeoecological evidence from Karakhach (kinds of paleosols, composition of phytoliths) and more abundant data from Dmanisi including the faunal assemblage and pollen spectra, from the very beginning the Oldowan and Early Acheulian toolmakers inhabited volcanic upland of the South Caucasus under the conditions of subtropical climate and mostly savanna-like landscape with woody vegetation in the river valley and mountain slopes [2,8-10]. Besides the Karakhach, Muradovo and Kurtan I sites, several similar Early Acheulian tools were found in several surface localities in the foothills of the Somkhetian ridge flanking the Lori depression in the east as well in some localities of the neighboring territories [1,8,11]. These finds may hint on a more extensive distribution of the Early Paleolithic people in the volcanic upland of the South Caucasus than it infers from a few sites discovered in this area at present.

The other group of very old Early Paleolithic sites (Kermek, Rodniki 1-4, Bogatyri) was discovered in the North-Western part of the Caucasus region, in the Taman peninsula between the Black and Azov Seas (Figure 1). The layers with abundant faunal remains and lithic artifacts were revealed in the Early Pleistocene deposits exposed in several localities of a high terrace extending along the Azov Sea shore. Based on the established ages of the faunal assemblages these sites may be attributed to the interval of 2.1-1.0Myr [8,12,13]. The Early Paleolithic inhabitants of the Taman sites fashioned tools on both flakes and slab-like fragments of the local silicified dolomite. The oldest artifact-bearing layers of the Kermek site (2.1-1.8Myr) yielded choppers, picks, and cleaver but no hand axes [14]. Nevertheless, the presence of a set of large tools as well as several large flakes suggest the Early Acheulian type of the industry. Similar but more developed Early Acheulian industries with rare small hand axes (Figure 1) were found in the sediment sequences of Bogatyry and Rodniki 3-4 (1.5-1.2Myr) and in those of Rodniki 1-2 (~1.0Myr). Hence, these Taman lithic industries may reflect a long evolution of the local Early Acheulian tradition, which has, however, some similarities with that of the Lori depression in the South Caucasus.

Very old Early Paleolithic sites have been also revealed in the North-Eastern Caucasus, namely in the mountainous area of Daghestan (Figure 1). The multi-meter sediment sequence excavated in the Ainikab and Muhkai 1-2 sites formed during a huge interval of 2.3-0.8Myr estimated on the base of the ages of the faunal assemblages as well as the paleomagnetic readings [15,16]. The sequence corresponding to different stages of the Early Pleistocene includes numerous artifact-bearing layers with choppers, picks (Figure 1) and knapping products made of slab-like pieces of local chert. From the beginning of the research the industry was generally defined as Oldowan because there were no hand axes considered by many scholars as the hallmark of the Acheulian [15]. Then, it was established that in the upper layers of the sediment sequence dated to the end of the Early Pleistocene (1.1-0.8Myr) the industry looks more developed and contains rare proto-hand axes [16]. Recently new excavations of the upper layers at Muhkai 1-2 yielded large flakes as well as certain tools fashioned on the large flakes. Based on the emergence of this purely Acheulian technology along with some other innovations, the investigators of the sites concluded that at the end of the Early Pleistocene there was a local transition from the Oldowan industry to the Early Acheulian one [17]. However, the presence of large choppers and picks in the older layers of the sites under consideration allow to think that the Oldowan-Early Acheulian transition started there much earlier [12]. It is noteworthy that some picks and choppers from different layers of the Muhkai 1-2 sites have analogues in the Lori and the Taman Early Acheulian industries described above. A relative late appearance in the Daghestan sites of such Acheulian components as large flakes and hand axes may be explained by bed qualities of local chert, which is difficult to process and unfavorable for the development of complex technologies.

Thus, now it is reliably established that in the Caucasus there was no chronological break between the Oldowan and Acheulian occupations. Both the Oldowan and Acheulian toolmakers already inhabited the region not later than two million years ago. In this period of the Early Pleistocene the Caucasus environments were very favorable for settling the early humans and resembled the natural conditions of their African homeland [8]. In addition, various rocks spread over the Caucasus region could provide the Early Paleolithic peoples with the abundant raw material for manufacturing lithic industries. Since the Early Pleistocene sites are in the different and remote parts of the Caucasus, it is obvious that at that time the early humans were widely settled throughout the region.

Currently, the earliest Acheulian industries of the Caucasus are older than those in Africa (~1.76-1.77Myr [18]) and in the Near

East (1.2-1.6 [19]) and demonstrate some features (slab-lake blanks for tools, special tool types) that allow to assume the independent origin of the Acheulian in the region. Then, similarities between the Early Acheulian industries of the South and North Caucasus may suggest their common roots. It means that in the Caucasus there may be found somewhat older sites with more primitive industries, which were brought to the region by the true first settlers. This does not concern the Dmanisi site because it is synchronous to the earliest Acheulian sites or even younger. As it has been shown, the complete formation of the Acheulian technology and tool types in different parts of the Caucasus took place at different times. In the areas with quite suitable raw material such as the Lori depression (South Caucasus) and Taman peninsula the early humans have mastered the Acheulian industries around 1.8Myr, whereas at Daghestan they have fully learned all these complex technologies much later, only at the end of the Early Pleistocene [20,21].

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References

1. Belyaeva EV (2020) Istoria issledivaniy acheulya v Armenii i vklad VP Lyubina. Zapiski Instituta istorii material'noy cultury RAN 22: 55-69.
2. Gabunia L, Vekua A, Lordkipanidze D (2000) The environmental contexts of early human occupation of Georgia (Transcaucasia). Journal of Human Evolution 38(6): 785-802.
3. Lumley HD, Nioradze M, Barsky D, Caushe D, Celiberti V, et al. (2005) Les industries lithiques preoldowayennes du debut du Pleistocene inferieur du site de Dmanissi en Georgie. L Anthropologie 109(1): 1-182.
4. Lumley HD, Lordkipanidze D, Feraud G, Garcia T, Perrenoud C, et al. (2002) Datation par la methode 40Ar/39Ar de la couche de cendres volcaniques (couche VI) de Dmanissi (Georgie) qui a livre des restes d'hominides fossiles de 1,81 Ma. Comptes Rendus Palevol 1(3): 181-189.
5. Ferring R, Oms O, Agustí J, Berna F, Nioradze M, et al. (2011) Earliest human occupations at Dmanisi (Georgian Caucasus) dated to 1.85-1.78 Ma. PNAS 108(26): 10432-10436.
6. Belyaeva EV, Lyubin VP (2013) Achel'skie pamiatniki severnoy armenii (Acheulian localities of Northern Armenia). In: Molodin VI, Shunkov V (Eds.) Basic problems of archaeology, anthropology, and ethnography of Eurasia. 70th anniversary of academician AP Dervyanko Novosibirsk. p:37-52.
7. Trifonov VG, Lyubin VP, Belyaeva EN, Lebedev VA, Trikhunkov YI, et al. (2016) Stratigraphic and tectonic settings of Early Paleolithic of North-West Armenia. Quaternary International 420(28): 178-198.
8. Belyaeva EV, Lyubin VP, Trifonov VG (2019) Decouverte de sites de Paleolithique inferieur au Nord d'Armenie// L Anthropologie 123(2): 257-275.
9. Messager E, Lordkipanidze D, Kvavadze E, Ferring CR, Voinchet P (2010) Palaeoenvironmental reconstruction of Dmanisi site (Georgia) based on palaeobotanical data. Quarternary International 223-224: 20-27.
10. Khokhlova OS, Sedov SN, Khokhlov AA, Belyaeva EV, Lyubin VP (2018) Signs of pedogenesis in the Early Pleistocene sediments containing tools of early hominins in the Northern Armenia and paleoclimatic reconstruction. Quaternary International, 469: 68-84.
11. Ojereliev DV, Trifonov VG, Çelik H, Trikhunkov YI (2020) Novye svidetel'stva rannego paleolita v gornyh systemah Vostochnoy Anatolii i Malogo Caucasa. Zapiski Instituta istorii material'noy cultury RAN. 22: 99-127.
12. Shchelinsky VE (2014) Eopleistocenovaya stoyanka Rodniki I v Zapadnom Predcaucasie (The Eopleistocene site of Rodniki I in the western CisCaucasia). SPb: "Periferia".
13. Shchelinsky VE (2019) Sur quelques resultants d'etudes du paleolithique inferieur au bord de la mer d'azov. L Anthropologie 123(4-5): 688-694.
14. Shchelinsky VE, Gurova V, Tesakov AS, Titov VV, Frolov PD, et al. (2016) The early pleistocene site of kermek in western ciscaucasia (southern russia): stratigraphy, biotic record, and lithic industry (preliminary results). Quaternary International 393(30): 51-69.
15. Amirkhanov KA (2007) Issledovanie pamiatnikov oldowana v central'nom daghestane (predvaritel'nye resultaty).
16. Amirkhanov KA (2016) Severny Caucas: nachalo prehistorii.
17. Amirkhanov KA, Taimazov AI (2019) Rannepleistocenovaya krupnootshchepovaya industria Severnogo Caucasa. Kratkie soobshchenia Instituta archeologii, 254: 13-33.
18. Galotti R, Mussi M (2018) The emergence of the acheulian in east africa: historical perspectives and current issues. The Emergence of Acheulian in East Africa and Beyond. p.1-12.
19. Bar YO, Belmaker M (2011) Early and Middle Pleistocene Faunal and hominins dispersals through Southwestern Asia. Quaternary Science Reviews 30(11-12): 1318-1337.
20. Lioubine VP (2002) L acheuleen du caucase. ERAUL 93, Belgium pp.140.
21. Trifonov VG, Tesakov AS, Simakova AN, Bachmanov DM (2019) Environmental and geodynamic settings of the earliest hominin migration to the arabian-caucasus region: a review. Quarternary International 534: 116-137.