Northeast Asian Colloquium in 2018

1. Symposium: 4th and 5th August in 2018

Title: **Variabilities in prehistoric human cultural adaptations in Northeast Asia: The Initial Upper Paleolithic, the last Glacial maximum, and the Post-Pleistocene adaptations**

Program, 4th August

10 : 00-10 : 10

Dr. Hiroki Takakura

Opening address

10 : 10-11 : 00

Dr. Kaoru Akoshima (Tohoku University)

Toward the explanation of variabilities in prehistoric human cultural adaptations in Northeast Asia

11 : 00-12 : 00

Dr. Andrey Tavarev (Institute of Archaeology and Ethnography, Russian Academy of Sciences, Siberian branch)

All Inclusive (Blades, Microblades, Bifaces): On the Variability of the Late Paleolithic Tool-kit in the industries of Mongolia and Russian Far East

Coffee Break 12 : 00-13 : 30

13 : 30-14 : 30

Dr. Josep Szykulski (Professor, Institute of Archaeology, Wroclaw University, Poland)

Late Pleistocene jasper cache from the Arts Bogdyn Nuruu massif in the Gobi Altai Mountains and the problem of its interpretation

14 : 30-15 : 30

Dr. Sergei Gladyshev (Senior Research Fellow, Department of the Stone Age Archaeology, Institute of Archaeology and Ethnography, Russian Academy of Sciences, Siberian branch)

Microcores and Microblades as the Marker of the Initial and Early Upper Paleolithic Complexes Manifestation, Mongolia

Program, 5th August

10 : 00-11 : 00

Dr. Alexandr Popov (Head of the scientific museum, Fareast federal University)

Archaeological cultures and human adaptation during Post-Glacial era in the south of the Far East of Russia

11 : 00-12 : 00

Dr. Yoshitaka Kanomata (Tohoku University)

Cultural adaptations from the Last Glacial Maximum to the Post-Pleistocene in Japanese archipelago.

13:30-14:30 Discussion

2. Workshop for young archaeologists: July 23th – 27th

Practical school for young archaeologists. （Christina-Maria Wiesner: a student from Germany will attend the workshop）

The 2nd Workshop for Variabilities in Prehistoric Human Cultural Adaptations in Northeast Asia, Part2: The Initial Upper Paleolithic, the Last Glacial Maximum, and the Post-Pleistocene Adaptations

Date and Time

February 13, 2019 13:00 – 17:00

Venue

TOKYO ELECTRON House of Creativity 3F, Katahira Campus, Tohoku University [Access]

Program

13:00 - 13:10 **Hiroki Takakura** (Tohoku University)
Openning address

13:10 - 13:40 **Kaoru Akoshima** (Tohoku University)
Toward the explanation of variabilities in prehistoric human cultural adaptations in Northeast Asia, part2

13:40 - 14:40 **Kyong-woo Lee** (Institute of Korean Prehistory)
The results and their implications of the excavation of Suyanggae site (Loc. Ⅰ and Ⅵ), Korea

14:40 - 15:10 **Hyewon Hong** (Tohoku University)
Upper Paleolithic blade industries in Korean Peninsula and Northeastern part of Japanese Archipelago

15:10 - 15:30 Coffee break

15:30 - 16:00 **Yoshitaka Kanomata** (Tohoku University)
The cultural parallels between Jomon and Valdivia

16:00 - 17:00 **Andrey Tabarev** (Russian Academy of Sciences)
Lithic technology of the Late Pleistocene – Early Holocene industries of Pacific Basin: Tropical zone research case

Organizers

Yoshitaka Kanomata (Tohoku University)
Kaoru Akoshima (Tohoku University)
Hyewon Hong (Tohoku University)

All Inclusive (blades, microblades, bifaces): On the variability of the Late Paleolithic Tool-Kit in the Industries of Mongolia and Russian Far East*

Andrey V. Tabarev

Institute of Archaeology and Ethnography, Russia

Late Paleolithic time (40-10 500 BP) within Northeast Asia is regarded by the archaeologist as the most important period of the Stone Age not only because of the origin and evolution of various technologies managed by *Homo sapiens*, but also because of the intensive spreading of these technologies from the inland parts of the region to the continental margins and to the coastal areas [1]. More often specialists used to analyze technologies as separate phenomenon (blade technology, microblade technology, bifacial technology, lithic cashes etc.) [2, 3]. Our experience in field, laboratory, and experimental studies with archaeological materials from Northern Mongolia, Russian Far East (Amur Region, Maritime Region, Sakhalin Island), and Korean Peninsula testifies in favor of complex understanding and interpretation of the spread of technologies in a package where "All Inclusive" . The manifestations of technologies in exact regions were connected with the natural conditions, landscape features, composition of faunal resources, and raw material base, in other words, by adaptation to the situation. The visual domination/absence of technologies in the tool-kit reflects the model of "cash memory-hard disk".

As a working hypothesis we propose that one of the Late Paleolithic technological packages was fully formed on the territory of Northern Mongolia around 30-27 000 BP, and moved to the East via northeastern part of China to the Russian Far East and Korean Peninsular as early as 25-23 000 BP [4]. In frames of all these regions the Late-Final Paleolithic complexes demonstrate (depending on the raw material quality) most or all types of technologies known for Northern Mongolia [5].

The other part of our hypothesis is connected with the possible spread of Late Paleolithic technologies in frames of the Japanese Sea basin during 18-13 000 BP – "Hokkaido-Sakhalin Island" and "Honshu-Lower Amur" interactions are of special interest and focus.

References

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Variabilities in prehistoric human cultural adaptations in Northeast Asia: The Initial Upper Paleolithic, the last Glacial maximum, and the Post-Pleistocene adaptations.

Kaoru Akoshima
Tohoku University, Japan

Expansion of modern humans into the arctic landscape during prehistoric times was the complicated processes of interaction between fluctuating environments and diversity in cultural measures of adaptation. The workshop aims to shed light on the territorial expansion of prehistoric populations throughout Northeast Asia, their variabilities in subsistence and technology, and successes and failures in exploitations of natural resources such as game animals, plant crops, and specific geological rock types in the landscape as raw materials for tools in highly mobile settlement patterns. The interdisciplinary program entails specialists in the Far Eastern Paleolithic archaeology, microscopic stone tool analysis, geological landscape, and diachronic environmental reconstructions.

The focus of discussion centers on critical time periods when the strict environments of the arctic placed selection pressures onto human populations with cultural means of adaptations. The Initial Upper Paleolithic (ca.40,000 to 35,000 BP) was the period of transition from the discoidal core based industries toward more efficient blade based industries. Human group mobility increased and selection of certain high quality lithic raw materials, with deepening planning depth of subsistence activities, and symbolic group identification. The last Glacial maximum (LGM) was the period of the harshest cold times in some parts of Northeast Asia. The ever refined systems of cultural adaptation led humans to enlarge their habitats to the arctic and then to the Beringia. The most developed forms of stone tool making technology such as micro-blade production, blade based projectile points with spear throwers, with strict selection of lithic raw materials in the seasonal cycles of human migration, with developed bone/antler tool technology, and artistic representation of figurines. With the abrupt global warming during the terminal Pleistocene placed new selective pressure on human groups in the Northeast Asia. Some populations invented ceramics, some groups intensified in aquatic resources to form shell-middens, some combined hunting with cultivations.

The program thoroughly investigates these complex processes of cultural adaptations throughout Northeast Asian prehistory, from eastern Siberia, the Maritime region, the Japanese Archipelago, and the land bridge area of Beringia to Alaska. The regional archaeological specialists from Russia, Korea, China, and Japan (including short term participants in the program), with an interdisciplinary team with geological landscape and environmental reconstruction will decipher the complex processes of human cultural adaptations during the coldest periods in the Quaternary in the coldest region on the earth.

Late Pleistocene jasper cache from the Arts Bogdyn Nuruu massif in the Gobi Altai Mountains and the problem of its interpretation

Józef Szykulski*, Mirosław Masojć*, Biamba Gunchinsuren**,
Davakhuu Odsuren** and Marcin Szmit***

*Institute of Archeology, University of Wroclaw, Poland
** Archaeology Department, Mongolian Academy of Science, Mongolia
***Archaeology Museum in Gdansk, Poland

A unique Pleistocene deposit of 11 jasper cores was discovered in the Gobi Altai Mountains, within the Arts Bogdyn Nuruu massif in southern Mongolia. It was situated on a mountain ridge above the Khutul Usny valley at a height of ca. 1,500 m a.s.l. away from human settlements. Examination of traces of the artefacts' use proved that at least some of them display evidence of working. The technological analysis of the artefacts revealed that the find should be related to the Levallois-Mousterian population of the central Asian Middle Palaeolithic. The cache from Arts Bogdyn Nuruu is the first discovery of this type recorded within the Gobi Desert. It is a valuable source of information contributing to the discussion of the specific nature of raw material exploitation, the dynamics of settlement and hunting strategies in the Altai region.

Microcores and Microblades as the Marker of the Initial and Early Upper Paleolithic Complexes Manifestation, Mongolia*

Sergey A. Gladyshev
Institute of Archaeology and Ethnography, Russia

The focus of this investigation is on the technology of micro-percussion in the Upper Paleolithic of Mongolia. Micro-percussion is defined as the entire assemblage of lithic artifacts associated with the production of microblades. The complexes analyzed here include microcores and microblades, but not tools made on them. Until recently, microblade percussion was never considered a distinct trend emergent in the lithic technology of the Early Upper Paleolithic of Mongolia. In this paper, based upon lithic materials from northern Mongolia and the Gobi Altai, we prove the existence of microblade percussion as early as the early stages of the Upper Paleolithic (37-26,000 BP) and persisting until the very beginning of the Holocene (11-10,500 BP). In other words, this is crosscutting technology for the region. We conclude that in the Early Upper Paleolithic complexes of northern Mongolia, preferential reduction initially emphasized narrow-front and, later, wedge-shaped microcore production. Elongated cores exhibiting negative scars of microblade removals on the narrow front were identified in the Tsagaan-Agui Cave assemblage from the Gobi Altai [1], while subprismatic microcores for microblade production and two-dozen microblades were found in the Early Upper Paleolithic horizon in Chikhen-Agui Rockshelter [2] along with microblades and microcores in the Early Upper Paleolithic levels at the Chikhen 2 open-air site [3]. Analysis of materials from the Final Paleolithic and the Early Holocene horizons at the Tolbor-15 site, along with representative surface collections and GIS modeling of site location patterns along tributaries of the Selenga River, allow us to formulate a series of hypotheses regarding the origin of the wedge-shaped flaking technique in northern Mongolia and the dynamics and directionality of its diffusion. We have established that the mobility of Paleolithic and Early Neolithic groups was not limited to the so-called "Selenga Corridor," but, to the contrary, people used low mountain passes to comfortably and conveniently move from one river valley to another. Also, tributaries of the Selenga River were not "dead-end streets" or "pockets;" rather, they constituted transitional paths from upstream areas to the river's mouth. The microblade technique observable in the Final Paleolithic of northern Mongolia exhibits more similarities with lithic complexes known archaeologically to the south (Inner Mongolia) and east (Russian Far East, Korean Peninsula, and Japanese Archipelago), not with the Russian Trans-Baikal region [4].

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Archaeological cultures and human adaptation during Post-Glacial era in the south of the Far East of Russia

A. Popov

Scientific museum, Far Eastern Federal University, Russia

One of the principle peculiarities of the Holocene archaeological cultures in the Maritime Region is their high dependence on the climatic and landscape changes which took place during last 13 000 years. About 13 000 - 10,000 BP Paleolithic-Mesolithic inhabitants of the Russian Far East moved to new forms of adaptation which included new technologies of food resources exploration and tool-making (first of all, stone ones). Also the peculiarities of transitional period are the invention and utilization of new materials unknown for previous time. Of course, this is the high-scale production and distribution of pottery as containers for food. These innovations were the answers on the global climatic and landscape changes along with the evolution of vegetation and fauna. The beginning of Neolithic in the Maritime Region most of the archaeologists used to connect with the first evidences of pottery-making. It may be traced by the permanent changes of archaeological cultures within periods of climatic rhythms' shifts. The comparison of climatic conditions and cultural dynamics in early and Middle Holocene points on direct influence of nature processes (landscape transformation, changes in faunal and floral assemblages connected with the fluctuations of the sea level and temperature-humidity conditions) on the change of archaeological cultures in the region.

Cultural adaptations from the Last Glacial Maximum to the Post-Pleistocene in Japanese archipelago*

Yoshitaka Kanomata

Tohoku University, Japan

The beginning of the Upper Paleolithic period (37,000 cal.BP: 33,000 BP) in Japanese archipelago is chiefly regarded as the time modern human (*Homo sapiens*) came from Northeast Asia. The largest wave of human immigrant from the north arrived to Hokkaido recognized in the last Glacial Maximum (LGM) [1]. Although blade/non-blade industries commonly existed in the early Upper Paleolithic period in Hokkaido, the number of sites reflecting human occupations was basically small. After the arrival of microblade industry, microblade technology accompanying with pressure removal method was basically composed in almost all the sites from LGM to the Final Paleolithic. Therefore, acceptance of microblade technology concerning land mammal hunting is regarded as a cultural adaptation to natural/social niche in Hokkaido. Furthermore, it is significant for evaluating cultural adaptations with microblade technologies after LGM to understand variety and similarity in human activity and settlement pattern precisely. The most apparent evolution in miroblade technology happened at 18,000 cal.BP (15,000 BP). The artisans who manufactured microblade by Yubetsu method enlarged their territories and exploited wider range of Hokkaido. Finally, they had passed the Tsugaru Strait and maintained similar subsistence in the distinct environment in northeastern Honshu islands [2].

Jomon period began with abrupt warming in global scale environmental changes. People exploited marine resources, and utilized potteries and land plants effectively [3]. As a results, shell mounds were formed along the coast. In addition, pit dwellings with plant/wood components and hearth were constructed repeatedly in residential settlements. Therefore, archaeologists could discover numerous tools for exploiting various resources obtained through geographical and seasonal organization. Increase of residential sites/houses means not only growth of population but also complexity of social relationships. To cope with such circumstances, ceremonial tools as clay figurines and cultural systems as animism were developed in Jomon period. People also adopted new strategies as storage/caching, social network, continuous gravels, organized hunting with dogs and primitive cultivation. Specialized tools were utilized more effectively and elaborately. In case of lithic tools, pressure and bifacial technologies descended from the Paleolithic age played an important role for reduce and resharpen high quality of raw materials brought from farer sources. Traceologcal approach shows so informative traces to explain how occupants utilized lithic tools carefully.

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Toward the explanation of Variabilities in prehistoric human Cultural adaptations in Northeast Asia: The Initial Upper Paleolithic, the last Glacial maximum, and the Post-Pleistocene adaptations, part 2.

Kaoru Akoshima

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This workshop 8 is actually the second part of the international symposium held in August 4-5, 2018 at Tohoku University, the Graduate School of Arts and Letters, sponsored by Tohoku Forum for Creativity. The part 2 invites Korean and Russian specialists to further investigate the research topics described below, while the part 1 invited 4 scholars from Russia and Poland.

Expansion of modern humans into the arctic landscape during prehistoric times was the complicated processes of interaction between fluctuating environments and diversity in *cultural means of adaptation* (in the sense of White and Binford). The workshops aim to shed light on the territorial expansion of prehistoric populations throughout Northeast Asia, their variabilities in subsistence and technology, and successes and failures in exploitations of natural resources such as game animals, plant crops, and specific geological rock types in the landscape as raw materials for tools in highly mobile settlement patterns. The interdisciplinary programs in conjunction with the Center for Northeast Asian Studies (CNEAS) of Tohoku University entail specialists in the Far Eastern Paleolithic archaeology, microscopic stone tool analysis, geological landscape, and diachronic environmental reconstructions.

The focus of discussion centers on critical time periods when the strict environments of the arctic placed evolutionary selection pressures onto human populations with cultural means of adaptations. The Initial Upper Paleolithic (ca.40,000 to 35,000 BP) was the period of transition from the discoidal core based industries toward more efficient blade based industries. Human group mobility increased and selection of certain high quality lithic raw materials, with deepening planning depth of subsistence activities, and symbolic group identification. The last Glacial maximum (LGM) was the period of the harshest cold times in some parts of Northeast Asia. The ever refined systems of cultural adaptation led humans to enlarge their habitats to the arctic and then to the Beringia. The most developed forms of stone tool making technology such as micro-blade production, blade based projectile points with spear throwers, with strict selection of lithic raw materials in the seasonal cycles of human migration, with developed bone/antler tool technology, and artistic representation of figurines. With the abrupt global warming during the terminal Pleistocene placed new selective pressure on human groups in the Northeast Asia. Some populations invented and made use of ceramics in diversified degrees, some groups at the face of necessity intensified in aquatic resources to form shell-middens, some groups combined hunting with cultivations or specialized in agricultural production economy.

The program continues to investigate these complex processes of cultural adaptations throughout Northeast Asian prehistory, from eastern Siberia, northern Mongolia, the Maritime region, the Korean Peninsula and the Japanese Archipelago, also to the land bridge area of Beringia to Alaska, further south across the American continents to the coastal Ecuador. The regional as well as Circum-Pacific archaeological specialists from Russia, Korea, and Japan, with an interdisciplinary team with geological landscape and environmental reconstruction will decipher the complex ecological processes during the coldest periods in the Quaternary in the coldest region on the earth.

The host institution of the program is the Laboratory of Archaeology *(Kokogaku*

Kenkyushitsu) of Tohoku University. The Laboratory has a history of about 95 years since 1920s when Dr. Sadakichi Kita took office at the National History Department. Ever since, archaeologists of Tohoku University including Faculty of Sciences (Dr. Hikoshichiro Matsumoto), Faculty of Medicine (Dr. Kotondo Hasebe and Sugao Yamanouchi), continued excavations and analyses. Professors Nobuo Ito, Chosuke Serizawa, Takashi Suto, and Toshio Yanagida, are included in our history at Faculty of Arts and Letters and Tohoku University Museum. Accordingly, our storage facilities contain abundant archaeological materials and these collections with original research records will be in full use for the pursuit of the above mentioned theoretical themes, from the Early Palaeolithic period, the Upper Palaeolithic period, the Jomon period, the Yayoi period, and also to the processual archaeological studies of the Historic Age of Japan.

The results and their implications of the excavation of the Suyanggae site(Locs.1 and 6), Korea

Kyong-Woo Lee

Institute of Korean Prehistory

The Suyanggae site comprises 5 localities within 3.5km having yielded Paleolithic remains along the riverside of the South Han River. Administratively, the Localities 1, 3, 4, and 5 belong to Suyanggae village, Aegok-ri, Jeokseong-myeon, Danyang County, Chungbuk Province, while the Locality 6 is located in Hajin-ri. Considering the number of localities and variety of cultural remains, they have been recognized as the Suyanggae Paleolithic Complex. So far, the complex has been investigated through 13 full-scale excavations, all salvation excavations without exception. Among them, investigation to the Suyanggae Locality 6(SYG-6) was carried out for construction of a weir in 2013 to 15. From the 4 cultural layers in the Upper Paleolithic of SYG-6, there were 40,805 pieces of Paleolithic remains excavated. While the excavated area is 2,838 ㎡, each cultural layer yielded clusters of lithic artifacts in a number of spots.

There were discovered 4 Upper Paleolithic cultural layers from the MIS 3 to 2. The Cultural Layer 4(CL 4), lowest CL, was distributed in northwestern part of excavation. For the remains including 10,860 artifacts, shale was exploited as main raw material, whose proportion, 94.8% is dominant compared to other CLs. It is notable that large blade and tanged-points were made intensively, while formal tools only take up very small portion. So the lithic composition appears relatively simple.

The CL 3 was distributed in the west part of excavation, ranging north and south. Most of 7,355 artifacts discovered from the CL consist of primary product derived from tool-manufacturing process like the CL 4. Even though the number is decreasing, tanged-point is still found succeeding CL 4 in addition to evidence of continuous blade production. Moreover, it is striking that new emergence of microblade-core and spall with prepared striking platform for microblade-core was found. The microblade-cores have atypical shape without modification on the body. Considering relation with the microlithic remains from CL 2, it can imply how the microlithic technology emerged in the commencement.

In addition, there were also excavated new findings including ground stone tool, line-engraved gravel which shows change of cultural aspects by CL. Especially, the line-engraved stone with 21 regular lines has attracted much attention as the first discovery of the kind in East Asia.

The CL 2 is distributed in the center of excavation yielding 21,904 artifacts, more than half of whole remains from SYG-6. While most of them are primary product without retouch, blade- and microblade-related artifacts are found numerously. Noticeably, those are thought important to reconstruct microblade production process, given various types of microblade-core.

Secondary production was mainly performed based on blank of blade. While typical end-scrapers were produced with steep edge on the end of blade, the artifacts include side-scrapers, burins, points, stoneware made of ground talc, axe-shaped stone tools made of silicic gneiss, and ground stone tool with partially ground edge.

The CL 1 is distributed in the center and northeastern part of excavation. Most artifacts were related to tool-making, and ratio of tool is relatively small. All 686 artifacts were excavated.

Generally, shale(87.2%) was mainly used for tool-making, while there were utilized other materials like obsidian(0.4%), quartz(5.3%), quartzite(0.7%), hornfels(1.5%), crystal(0.2%), rhyolite(2.2%), tuff(0.7%), silicic gneiss(0.7%), porphyroid(0.1%), sandstone(0.6%), amphibolite(0.3%), etc. Each layer shows different composition of raw material.

It is notable that obsidian was utilized only in the CLs 1 and 2, not in CLs 3, 4. Moreover, it is

also observed that exploitation of quality material like rhyolite, tuff, and hornfels were concentrated in the CL 2. Those are thought chosen to conduct microblade production efficiently.

Meanwhile, the CLs 1 and 3 shows high percentage of quartz as raw material compared to other CLs. Among tools, ones made of quartz are abundant. Especially, there were found development of bipolar technique utilizing quartz, yielding pyramidic wedge-shaped artifacts. Even though they are not main raw material, some raw materials are found used intensively in each layer: porphyroid in CL 1, schist and silicic gneiss in CL 2, amphibolite in CL 3, and sandstone in CL 4. Especially in CL 2, the materials were intensively used to make stone axes. Given aspects of raw material composition by CLs and change of artifacts, it is found that raw material has something to do with kind and quality of stone artifacts. In the CL 4 where shale is almost the only raw material, it is marked that blade was made large and long compared to other CLs. Tanged-points were intensively made of those large blades, as well. In the CL 3 having more utilization of quartz, size of blade appears shorter than ones of the CL 4. Also artifacts related to blade production shows significant decline compared to the CL 4. Along with rapid decrease of tanged-point product, there were appearances of new artifacts such as microblade-cores, line-engraved stones, and ground stone tools.

In the CL 2, it is remarkable that new quality raw material like obsidian, rhyolite, hornfels, tuff, crystal were frequently utilized, corresponding to rapid increase in artifacts related to microblade production. While end-scrapers and side-scrapers were produced abundantly, it is noticeable that no tanged-point was found. Besides, association of new tools like ground stone tools, stone axe, stoneware is prominent.

The changing aspects of lithic production and related raw material reflect temporal differentiation along with stratigraphic division. In addition, radiocarbon dating shows clear difference in each layer. The average date of the CL 2 is 18,410±70BP, which is 22,467~22,023 calBP corresponding boundary of the MIS 2 Ⅲ and Ⅳ. While the average date of the CL 3 is 35,180±450BP, 40,172~39,321 calBP, the average of CL 4 is 36,980±350BP, 41,874~41,254calBP, showing lapse of 2,000 years between.

Each cultural layer of SYG-6 revealed clear difference in tool-manufacturing and raw material-utilizing. In sum, it can be concluded like followings: production of large blade and tanged-point in the CL 4, decline of blade and tanged-point and emergence of new technique related to microlith and line-engraving in the CL 3, intensive microlithic production, diversification and increase of living tools like scrapers with no tanged-point in the CL 2.

It is remarkable that microlithic artifacts found in the CL 3 has association with tanged-points. The microblade-cores were not modified wedge-shaped but has simple aspects utilizing original shape of the cores, which can be referred to "primitive type"(Lee HJ 2015). It is the "small blade-core" technique found in every CL of SYG-6 that has close correspondence to the microblade-core.

While the small blade-core has less typicality than normal microblade-core and was used to make smaller blade, the knapping technique is very similar with microblade flaking. Through close observation, the small blade flaking could be reconstructed that after striking platform had been prepared by longitudinal flaking like spall flaking, small blade was flaked from a narrow side. During the process, it is modification methods preformed to core that is different from microblade-core. Most small blade-cores found from the CLs 3 and 4 utilized its original shapes without modification.

On the other hand, small blade-cores in the CL 2 utilize bifacial flaking similar to one of microblade-core to prepare striking platform with modification. Though the output is not microblade, the making process is almost identical. This changing aspect suggests that the small blade technique changed and developed from the CL 4 to CL 2 according to emergence of microlithic technique. It is one of the important tasks to investigate the small blade technique with blade and microblade technology.

Along with change of lithic production, the raw material also shows difference in each layer: dominance of shale in the CL 4, intensive exploitation of quartz in the CL 3, and utilization of obsidian in the CL 2. Especially, it is thought that obsidian was introduced with regularization of microblade by developing long distance source to obtain high quality material, implying major technical change before the CL 2 and after. Like this, change of raw material exploitation reflects composition of main tool and its production. So it can be thought that tool-making technique and circumstances related obtainable raw material are most crucial conditions to determine a lithic assemblage.

Changing aspects of lithic composition and raw material found in SYG-6 is not limited as local phenomenon. Even though particular surrounding condition like raw material source and landscape should be considered, it is thought one of the most important sites that represents minute cultural change during the Upper Paleolithic in the Korean Peninsula. For now, SYG-6 is almost the only site containing a huge amount of lithic assemblage in concentration with well stratification. Given antiquity of radiocarbon dates and appearance of typical lithic artifacts, the site is recognized presenting the first and oldest of laminar technology before 40ka which could imply emergence of the modern human in the region. So, it is highly expected to provide critical information to understand how certain kind of human species adapted in the changing environments with developing lithic technology in company with selection and acquirement of raw material.

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Upper Paleolithic blade industries in Korean Peninsula and Northeastern part of Japanese Archipelago

Hyewon Hong

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Research on the origin of the Upper Paleolithic age has been actively conducted in the world, and it has important significance in human history as well as worldwide movements of Homo sapiens. The Upper Paleolithic age of the Japanese archipelago and Korean Peninsula is represented as blade based industries, and there are close relationships between blade production techniques and the beginning of the Upper Paleolithic age. And looking at the characteristic artifacts in the Upper Paleolithic age, for the Korean peninsula is the appearance of blade and tanged point, and for the Japanese archipelago are the blade technique and the knife-shaped tools.

The Upper Paleolithic age of the Japanese archipelago can be divided into three major groups, that is Blade industry, Bifacial point industry, and Microblade industry. The main stone tools of the Upper Paleolithic age in the Northeastern part of JA were also blades and knife-shaped tools made from blank blades. However, the knife-shaped tools recognized in the Northeastern area are mainly those of the basal part retouched. Typical groups are the Higashiyama industry and the Sugikubo industry, which are classified by the type of knife-shaped tools and assemblage composition of stone tools.

The Upper Paleolithic age of the Korean Peninsula can be divided into two major groups, that is Blade industry and Microblade industry. And the characteristic aspect is that they continuously used the types of stone tools which had been used in the Lower Paleolithic age. The tanged point is a representative tool in the Blade industry of the KP. In the discussion on the typological characteristics of tanged point in Korea, there are cases in which some of them are classified by shape similar to the cases in Japanese knife-shaped tool. In addition, as seen in the term ‘tanged point’, it is common to perceive it as generally recognized as a tool used as projectile or spear point. In practice there is a possibility of tools used for other purposes such as knife, scraper, denticulate, etc.

In case of tanged points identified chronologically earlier, the hypothesis that they were used as multifunctional hafting tools is also confirmed. Of course there are cases where they were used as hunting weapon tools [1 and 2]. This shows diversity of the role of tanged tools or tanged points. In other words, before the analysis as a hunting tool, consideration as a tanged tool is necessary. From the same viewpoint, it is also necessary to consider the function of the base retouched type knife-shaped tools in the Northeastern part of JA. It is considered that comparing the possibility as a hunting tool together with the possibility as a hafting tool, and recognizing it as a stone tool with complex functions will be more efficient in comparative research.

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Lithic Technology of the Late Pleistocene – Early Holocene Industries of Pacific Basin: Tropical Zone Research Case*

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The character and peculiarities of lithic industries accompanying the transition from preceramic/early ceramic (hunter-gatherers/early agriculturalists, Late Paleolithic/Early Neolithic) cultures in the Pacific basin are of great interest and of intriguing perspective for the comparative studies. Taking into consideration the variety of climatic conditions (tropical, temperate, and polar/arctic zones) there is wide range of local and regional industries which reflect the focuses of economy, technological traditions, and adaptation to local raw material base.

Pacific coast of South America is one of very potential regions [1]. Starting from 2013 joint Russian-Japanese archaeological team is working in the coastal part of Ecuador investigating various aspects of the cultural (Las Vegas - Valdivia) transition. The pilot step was devoted to the analysis of lithic collections from preceramic Las Vegas culture sites (10 800 – 6 600 BP) excavated during 1970-80th [2]. This research allowed us to lay the foundations of the idea of "Tropical Package" which illustrates the peculiarities of the lithic industries in the tropical zone of the Pacific [3].

The further analysis of new materials excavated by joint expedition at the sites (Las Vegas and Early Valdivia cultures) in the coastal zone of Ecuador during 2014-18 gives additional information, helps to detail the idea, and to turn it into the technological model (macro-industry and micro-industry). The application of such approach on the materials known for the Late Paleolithic – Neolithic cultures of the Island Southeast Asia (Philippines, Indonesia) [4] demonstrates the technological complexity of local industries, along with the high efficiency and flexibility of "Tropical Package".

In the development of this approach it could be suggested that the other island/coastal lithic contexts in the Pacific also deserve closer examination – such as, for example, as Okinawa where in spite of the series of sites with early anthropological materials (Late Paleolithic) lithic industry is presented so far only sketchy.

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The Cultural parallels between Jomon and Valdivia *

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The author has been studying prehistoric Ecuador in South America since 2013 and frequently recognized the cultural parallels between prehistoric Japan and Ecuador. Betty. J. Meggers who proposed “Jomon-Valdivia hypothesis” emphasized that the cultural parallels between widely separated but environmentally similar regions should be compared and explained [1 and 2]. She noted that such cultural parallels indicates the strength of environmental pressures on cultural development. Although natural environments between humid subtropical Japan in mid-latitude and tropical Ecuador just below the equator were so different, similar phenomena happened in both regions simultaneously because of common characteristics on cultural-social conditions.

In this presentation, the author compare the cultural parallels between Jomon and Valdivia cultures as existence of numerous clay figurines, increase of grinding stone and shell mound and so on. Ceremonial features in Jomon and Valdivia cultures were commonly accompanied with human burials in larger village formation. Potteries in the emergence period in both cultures were used basically for cooking river fishes. Therefore, I consider the background from the viewpoints of environment-settlement-subsistence strategies and explain the relationships in detail.

Several cultural parallels as increase of shell mounds could be explained by higher pressure of natural environment in the early Holocene. Rapid rise of sea level brought occupants easier access to the sea foods containing shell [3]. In opposite, social environments strongly affected on kinds of cultural parallels. For instance, female figures increased in relatively complicated society organized by public plaza, ritual constructions and graves. Productivity and prosperity of human offsprings would be symbolized through producing pregnant female figurines because they were necessary to pray ritually for maintenance of long-term stable society. Therefore, their increase occurred in bigger villages in both societies. Clay figurines in Valdivia posed for prayer by putting their own hands together in front of stomach commonly. The consistent postures must have represented habitual praying to God in Valdivia culture. In contrast, clay figurines in Jomon have so wide variety of decorations and postures depending on time period and locality. It is probable that large number of Jomon clay figurines were symbols of God because they have never posed as praying Valdivia figures.

The cultural comparison is useful method to understand characteristics of respective cultures relatively [4]. In addition, such considerations will give us deeper understanding on the organized relationship between cultural components and environmental pressures according to their adaptive technologies.

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