

LITHIC ARTIFACTS FROM HADITHA, IRAQ

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Introduction

From May 1981 to December 1983, the Japanese Archaeological Expedition to Iraq from Kokushikan University, headed by Hideo Fujii (now Professor emeritus of Kokushikan University), conducted a series of excavations at archaeological sites in Haditha, some 230 km west-north-west of Baghdad (Fig. 1). This series excavations were carried out in the Salvage Projects associated with construction of the Qadisiyeh Dam in the area.

Between November 1982 and December 1983 during the Salvage excavations, the Expedition excavated the site of 'Usiyeh¹⁾ located on the right bank of the River Euphrates, some 30 km north-west from the town of Haditha. The staff members of these 'Usiyeh excavations consisted of Hideo Fujii (director), Yasuyoshi Okada, Katsuhiko Ohnuma, Hiromichi Oguchi, Hirotoshi Numoto, Kazumi Yagi, Masayuki Yokokura, and Masaaki Itoga. Majid Abd-ur Rahman al-Hadithi, Ismail Ibrahim Shaveaf, Kahatan Abdul Hamid, and Makhady Saliekha Azidu joined the excavations as co-researchers representing the Directorate General of Antiquities and Heritage, Baghdad.

In the course of the excavations at 'Usiyeh, we took notice of two places covered by lithic artifacts on both sides of the Euphrates: one located on a hill slope near Rayyash on the left bank of the Euphrates, some 5 km south-east of 'Usiyeh, and the other located near the site 'Usiyeh on a fan-like topography developed along the Euphrates.

Thus, we conducted three days' surface survey at the two places from 1st to 3rd December 1982, and some 600 lithic artifacts were collected. All of the collected samples are now stored in the Iraq Museum, Baghdad.

The aim of the present paper is to report on the two surface materials in a hope that they are worthy enough of reporting. I must admit, however, that what is mentioned in this report are only speculative, suffering from the nature of the survey which involved surface sampling alone, with a considerable possibility of the samples being mixed²⁾, as well as from the rough quality of the analysis conducted in a limited time during excavational works at 'Usiyeh.

Description of the materials from Rayyash and 'Usiyeh

Rayyash material:

Two hours' sampling on a hill slope near Rayyash was conducted on 1st December, and some 200 lithic artifacts were collected. The spot where we conducted sampling is 146 m above sea level, and 25 m higher than the surface of the Euphrates (Fig. 2). Excluding extremely fresh ones probably of modern origins³⁾, the samples that seemed to have belonged to a same group total 169. These are made on agate-like flint, dark- to light-brown in colour in general, and scarcely bear considerable degrees of weathering

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1) The site of 'Usiyeh which the Japanese Archaeological Expedition to Iraq was in charge of excavation is dated to the early 2nd millennium B.C. (Isin/Larsa and Old Babylonian periods). See Oguchi [1996] for details of the site itself.

2) As regards the surface materials collected by the Field Museum North Arabian Desert Expeditions of 1927–1950 in Syria, Jordan, and Iraq, Dorothy Garrod demonstrated that the classification of the materials from a limited area (with a single set of identifiable geomorphological features) in terms of their physical conditions could be useful [1960: 111].

3) See Chmielewski and Kozłowski [1985: 67] regarding the probability that in modern times the local people in this area used flint to produce tools of everyday use.

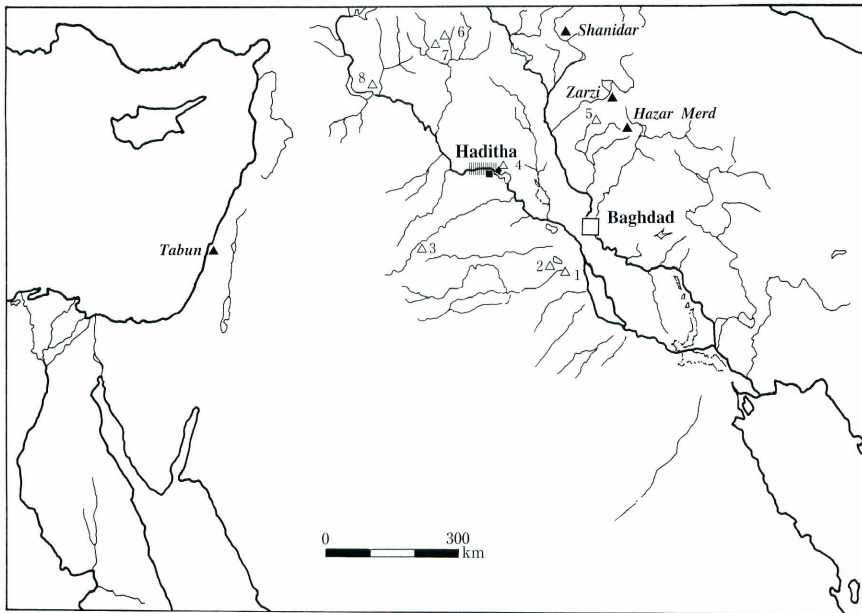


Fig. 1 Map showing the location of Haditha and the sites mentioned in the text.

1: Tar Jamal; 2: Abje; 3: Wadi Hauran near Rutba; 4: Masnaa; 5: Tarjil;
6: west of Tell Baqar; 7: Menaake; 8: Rhaiyat; ◆: Rayyash; ■: 'Usiyeh.

such as abrasion and whitening of flint surface due to the extraction of coloured minerals in its interior⁴⁾. There are no clear outcrops of flint near by.

The 169 samples comprise 38 cores, 117 débitage pieces, and 14 retouched pieces (tools and/or weapons) (Table 1) (Figs. 3, 4, 5). Twenty of the 38 cores are prismatic in shape, with a single striking platform, and there is one discoidal core. One core exhibits the final detachment in the Levallois method of flake type (Table 2). Among the 117 débitage pieces are 35 cortical flakes wholly covered by natural surface, which in most cases were detached at the initial stage of core reduction. There are 79 partially-cortical flakes and 3 non-cortical flakes (Table 3). The partially-cortical and non-cortical flakes consist of 76 non-Levallois flakes and 6 non-Levallois blades (Table 4), of which butts are either cortical or plain (Table 5). Three of the 14 retouched pieces are choppers, and two are chopping-tools, both being considered as heavy-duty tool. There are also 6 scrapers, 2 notched pieces, and 1 denticulated pieces. Ten of the 14 retouched pieces are made on core or pebble (Table 6).

In all, the *Rayyash* material is characterized by a blade production reminiscent of blade technologies of the Upper Palaeolithic and the later periods.

'Usiyeh material:

At 'Usiyeh, three hours' sampling was conducted on 3rd December, and some 400 lithic artifacts were collected. The spot where we conducted sampling is 138 m above sea level, and 15 m higher than the surface of the Euphrates (Fig. 6). The samples except for extremely fresh ones total 363. They are generally made on dark- to light-brown agate-like flint, and bear considerable degrees of abrasion. Some

4) See Yamada *et al.* [1976: 286–289] for the mechanism of whitening of flint surface.

of them exhibit whitening of flint surface. Like at *Rayyash*, there are no outcrops of flint near by.

The 363 samples comprise 172 cores, 190 débitage pieces, and 1 retouched pieces (Table 7) (Figs. 7, 8, 9). In shape, eighty-four of the 172 cores are prismatic, with a single or opposed two striking platforms, and fifty-nine are discoidal. Twenty-six cores exhibit the final detachment in the three types of the Levallois methods, i.e. flake type (14 samples), blade type (5 samples), and point type (7 samples) (Table 8). The 190 débitage pieces consist of 47 cortical flakes, 101 partially-cortical flakes, and 42 non-cortical flakes (Table 9). The partially-cortical and non-cortical flakes consist of 87 non-Levallois flakes, 28 non-Levallois blades, 5 pseudo-Levallois or non-Levallois points, 15 Levallois flakes, 5 Levallois blades, and 3 Levallois points (Table 10). Many of the butts of the partially-cortical and non-cortical flakes are plain, dihedral faceted, or multiple faceted (Table 11). The only retouched piece collected at *'Usiyeh* is a scraper made on atypical Levallois flake (Table 12).

In every respect, the *'Usiyeh* material seems to have been related to the Middle Palaeolithic industries with the Levallois technology.

Surface materials from the regions surrounding Haditha

As early as the year of 1928, Dorothy Garrod reported a Middle Palaeolithic surface material from Iraq, which she had collected at the place called *Tarjil* near Kirkuk in the southern border of Kurdistan, some 230 km north of Baghdad. This collection comprises Levallois cores, Levallois flakes, and Levallois points [Garrod 1928].

The Field Museum North Arabian Desert Expeditions of 1927–1950 collected a large quantity of lithic artifacts in the areas covering Syria, Jordan, and Iraq, including the borders of the three countries [Field 1960]. Among the samples collected by these expeditions are Lower, Middle, and Upper Palaeolithic artifacts, which were later described by Dorothy Garrod in their typological features [1960: 111–124]. Garrod classified them first in terms of their physical conditions, examining patination and abrasion on the samples from each of the individual localities. After the classification, she dated them to various Palaeolithic periods from typological points of view: the Upper Acheulean with hand-axes, choppers, scrapers, flakes, and cores including the Levallois types; the Levallois-Mousterian with Levallois cores, Levallois flakes and points, Mousterian points, and side scrapers; the Upper Palaeolithic (the Aurignacian by Garrod) from very few localities with burins, end scrapers, flake scrapers, rostrate scrapers, steep scrapers, pounders, discs, pyramidal cores, and retouched flakes [*ibid.*].

In the western part of Iraq near the Jordanian border, the Tokyo University Iraq-Iran Archaeological Expedition of 1956–1957, headed by Namio Egami, collected lithic artifacts in 1957, in and along the *Wadi Hawran* running near Rutba. Specimens, totaling 138, which had been brought to Japan were later analyzed by Yoshihiro Nishiaki and Sumio Fujii [Nishiaki and Fujii 1986]. Nishiaki and Fujii divided the specimens into three groups in terms of their physical conditions: Group A relatively thickly patinated, desert-varnished, abraded, and edge-damaged; Group B relatively thinly patinated or non-patinated, less varnished, practically non-abraded, and rather sharply edged; Group C with both features of Groups A and B. Group A comprises 53 samples including cores, flakes, and blades. Most of the 8 cores are of the Levallois flake type, with a single striking platform, and a few are of the Levallois core type, with a single striking platform. The Levallois flakes are of the Levallois flake type, with a single striking platform, and a few are of the Levallois core type, with a single striking platform. The Levallois blades are of the Levallois blade type, with a single striking platform, and a few are of the Levallois core type, with a single striking platform. The Levallois points are of the Levallois point type, with a single striking platform, and a few are of the Levallois core type, with a single striking platform. The Levallois scrapers are of the Levallois scraper type, with a single striking platform, and a few are of the Levallois core type, with a single striking platform. The Levallois choppers are of the Levallois chopper type, with a single striking platform, and a few are of the Levallois core type, with a single striking platform. The Levallois hand-axes are of the Levallois hand-axe type, with a single striking platform, and a few are of the Levallois core type, with a single striking platform. The Levallois discs are of the Levallois disc type, with a single striking platform, and a few are of the Levallois core type, with a single striking platform. The Levallois pyramidal cores are of the Levallois pyramidal core type, with a single striking platform, and a few are of the Levallois core type, with a single striking platform. The Levallois rostrate scrapers are of the Levallois rostrate scraper type, with a single striking platform, and a few are of the Levallois core type, with a single striking platform. The Levallois steep scrapers are of the Levallois steep scraper type, with a single striking platform, and a few are of the Levallois core type, with a single striking platform. The Levallois pounders are of the Levallois pounder type, with a single striking platform, and a few are of the Levallois core type, with a single striking platform. The Levallois end scrapers are of the Levallois end scraper type, with a single striking platform, and a few are of the Levallois core type, with a single striking platform. The Levallois flake scrapers are of the Levallois flake scraper type, with a single striking platform, and a few are of the Levallois core type, with a single striking platform. The Levallois burins are of the Levallois burin type, with a single striking platform, and a few are of the Levallois core type, with a single striking platform. The Levallois retouched flakes are of the Levallois retouched flake type, with a single striking platform, and a few are of the Levallois core type, with a single striking platform.

consisting predominantly of burins [*ibid*].

In 1973 and 1975, the Japanese Archaeological Expedition to Iraq from Kokushikan University, headed by Hideo Fujii, collected lithic artifacts on a fan-like topography or rocky fan, formed between a cliff line and a wadi, in the Iraqi South-western Desert 30 km south-west of Kerbala, 100 km south-west of Baghdad. This rocky fan, which the Expedition named *Tar Jamal*, is 40 to 78 m above sea level, and two groups of lithic artifacts were collected on its surface. One of them, made on agate-like flint, bears abrasion and whitening of flint surface. This group consists of some 1,200 samples including discoidal cores, prismatic cores, and Levallois cores of the flake and point types. Non-Levallois and Levallois flakes/blades/points and retouched pieces such as Mousterian points, burins, denticulated pieces, perforators, and side scrapers are also included in this group. Another group consists of some 300 samples which scarcely bear weathering. Included in this group are prismatic cores, non-Levallois flakes/blades, and rather many retouched pieces such as abrupt scrapers, side scrapers, chopping-tools, denticulated pieces, and burins [Ohnuma 1976; 1984/85]. While it is not clear about the chronological position of the unweathered group and its bearing to other lithic industries, it is almost unquestionable that the weathered group was related to the Middle Palaeolithic, particularly to the Levantine Mousterian modelled by Tabun Type B, characterized by Levallois flakes and points.

In the 1975 working season, the Japanese Archaeological Expedition to Iraq also collected lithic artifacts at *Abje*, some 25 km west-north-west of *Tar Jamal*. The site *Abje* is located on a small hill in the desert, the flat top of which is 76 m above sea level, and 10 m higher than its surroundings. Collected on the top of this natural mound are some 210 samples made on agate-like flint, which are divided into two groups in terms of weathering: one with heavy abrasion and the other with slight abrasion. The abraded group consists of Levallois and discoidal cores with faceted striking platforms and flakes detached from them. The cores are technologically similar to those from *Tar Jamal*, but are much smaller. The slightly-abraded group consists of prismatic cores with parallel flake scars plus plain, non-faceted striking platforms, and blade-like flakes detached from them [Wada 1984/85].

In the Haditha region itself, special mention must be given to well-organized, systematic research carried out in 1981 to 1983 by the mission from the Polish Center of Mediterranean Archaeology of Warsaw University. This research involved geological/geomorphological and archaeological surveys, and was conducted by Waldemar Chmielewski and Stefan Kozłowski. The research focused mainly on the *Masnaa* site complex, 13 km east of 'Usiyeh, with selective surveys around Fehimi, 7 km south-east of 'Usiyeh. Chmielewski and Kozłowski excellently outlined the sequence of terraces of the River Euphrates, and dated them on the basis of techno-typology and states of preservation of the lithic assemblages collected on the terraces [Chmielewski and Kozłowski 1985]. They distinguished six terraces (Terraces 1 to 6, numbered from the bottom upwards) on the bases of geomorphological and geological observations. From a slope of Terrace 4 (*Masnaa I and II*), Lower Palaeolithic materials, consisting of heavily rounded Abbevillian-type hand-axes, choppers, chopping-tools, and Clactonian-type flakes, were collected. Collected from Terraces 4 to 6 in the *Masnaa* area are Middle Palaeolithic materials consisting of many cores and flakes/blades, and few retouched or unretouched tools. Included in the cores are the three types of Levallois cores (flake, blade, and point types). Discoidal cores are interestingly rare, however. Of the numerous flakes and blades, Levallois flakes and points are characteristic. Retouched pieces such as side scrapers and denticulated pieces were collected, but no Mousterian points were found [*ibid*]. Kozłowski, who was in charge of the surveys of lithic artifacts, stated that the Middle Palaeolithic sites in the *Masnaa* complex had not been "home" sites. He also stated that they had been workshops exploiting flint raw material from nearby outcrops [*ibid*]. Kozłowski, in conclusion, related the *Masnaa* Middle Palaeolithic materials to the Middle-Eastern Mousterio-Levalloisian, dating them to the Early Würm and the Eemian interglacial [*ibid*].

In the Lower Balikh near the Middle Euphrates, Syria, a Middle Palaeolithic material was reported by Lorraine Copeland from the site called *Rhaiyat* [1981: 255]. This material is characterized by Levallois

cores with centripetal or parallel preparation. Because no artifacts other than cores and cortical (and/or preparation) flakes were found at this site, Copeland regarded it as a factory site.

At many places in the Khabur Basin near Hassake, north-east Syria, Lower and Middle Palaeolithic materials were collected by the 1989–1992 Khabur Prospection Project directed by Bertille Lyonnet. Among the sites confirmed by this mission are *al-Rasho* near Ras al-Ain and *Khirbet al-Qadir* near Tell Tamr, from which Lower Palaeolithic materials were collected. These sites are located on hill slopes, and small bifaces, non-Levallois cores and flakes, and déjeté scrapers were collected there. Yoshihiro Nishiaki, who joined the 1990–91 projects and directed the 1991 prehistoric survey, dated these materials to a final Lower Palaeolithic period on the basis of their techno-typological features [Nishiaki 1992]. More than ten Middle Palaeolithic open sites were also marked in the same area. All of these are located on higher wadi/river terraces or hill slopes, two sites of *Menaake* and a wadi terrace *west of Tell Baqar* being most representative. Many cores and cortical flakes and few tools were collected at these two sites, which led Nishiaki to state that they had been factory sites [*ibid*]. Because some of the cores and flakes from *Menaake* and *west of Tell Baqar* are of the Levallois categories, mainly of the flake type, Nishiaki suggested a similarity of the materials from these sites to the Levantine Mousterian modelled by Tabun Type C or B [*ibid*].

Brief review of the Middle and Upper Palaeolithic of West Asia

Judging from the inventories of the *Rayyash* and *'Usiyeh* materials and their technological details, it is highly likely that they were the products of the Upper Palaeolithic or the later period and of the Middle Palaeolithic period, respectively.

It is pertinent here, therefore, to briefly review the relevant lithic industries of West Asia, particularly those of the Levant in the west of Haditha and those of the Zagros in the east.

The research of the Middle Palaeolithic of the Levant started with the excavations at the *Tabun* Cave of Mount Carmel, Israel. Dorothy Garrod, who had excavated this site five times between 1929 and 1934, described three Middle Palaeolithic layers there, Layers D, C and B in ascending order [Garrod and Bate 1937]. Layer D (the Lower Levallois-Mousterian by Garrod) is characterized by triangular Levallois flakes. Mousterian points are large in quantity, and many of them are made carefully. Side scrapers, burins, and notched pieces are also numerous. Many of the cores are of the Levallois types, of which about a quarter are for triangular flakes. Some of the levallois cores are very small. Blade cores with faceted striking platforms were also unearthed. Layer C (the Lower Levallois-Mousterian) is characterized by broad Levallois flakes. Mousterian points are less numerous than in Layer D. Side scrapers on broad Levallois flake are numerous, and burins and notched pieces were also unearthed. Many of the Levallois cores are very small, but the Levallois flakes are rather large, indicating that these flakes were detached until the cores became very small. Layer B (the Upper Levallois-Mousterian) is characterized by Levallois flakes, both broad and triangular. About a half of the Mousterian points are made on triangular Levallois flakes. Most of the Levallois cores are for broad flakes. The specimens from this layer are smaller and less numerous than those from Layer C, but the retouched pieces such as side scrapers are far more numerous [*ibid*].

In 1975, Lorraine Copeland proposed three phases for the Levallois-Mousterian of Lebanon and Syria on the basis of the Tabun sequence [1975]. According to Copeland, the first phase (Model Tabun D) is characterized by “one-axis methods of preparation of the Levallois cores as well as the laminar, triangular parallel-sided blanks struck off along the same axis as the core preparation”. The second phase (Model Tabun C) is characterized by the virtual absence of Levallois points and the dominant presence of broad Levallois flakes and pseudo-Levallois points. The third phase (Model Tabun B) is characterized by the standard production of Levallois points from either one axis or radially prepared cores, as well as by flakes which are light and thin and mostly laminar [*ibid*].

Turning east to the Zagros Mountains, the Middle Palaeolithic in Iraq is different from that of the

Levant. Among the sites so far excavated in this region are two cave sites of *Hazar Merd* and *Shanidar*.

The cave site of *Hazar Merd*, which was excavated by Dorothy Garrod in 1928, is located 8 km south-west of Sulaimani in the southern border of Kurdistan. The Middle Palaeolithic material from Layer C of this site was described by Garrod as a Mousterian industry with side scrapers and Mousterian points, of which the latter include elongated specimens and are carefully made [Garrod 1930]. Flakes with faceted or unfaceted butts are triangular and slender, some with parallel sides approaching blades. Not a single core was found, and the practice of the Levallois methods was not evidenced [*ibid*].

The cave site of *Shanidar* is located near the Greater Zab, a branch of the River Tigris, north Iraq. This site was excavated by Ralph Solecki in 1951, and a Middle Palaeolithic material was unearthed from Layer D [Solecki 1952]. According to Solecki, the material from Layer D resembles that from Layer C of *Hazar Merd*, with Mousterian points resembling the *Hazar Merd* specimens. Side scrapers on broad flake-blade, retouched flakes, and cores of medium to small size were also unearthed. Faceted flakes were reported, but none of the Levallois methods were traced [Solecki 1953; 1955]. In 1973 and 1974, Takeru Akazawa analyzed the *Shanidar* Layer D material in Baghdad. Akazawa reported that the most numerous retouched pieces in this layer were side scrapers, mainly of the single convex type, and Mousterian points including elongated specimens took the second place [Akazawa 1975]. He also reported burins of the Upper Palaeolithic type, borers, truncated pieces, and notched or denticulated pieces. Flakes and blades were described as predominantly non-Levallois, and the cores as non-Levallois with few flake scars [*ibid*].

In 1951, the Upper Palaeolithic of the Levant was divided by René Neuville into six phases on the basis of his analyses of materials from the Judean Desert [Neuville 1951]. According to Neuville [*ibid*], Phase 1 (the Emiran by Garrod [1962] and the Ksar Akil Phase A by Copeland [1975]) was describable as the Middle to Upper Palaeolithic transition of the region with the Emiran point as its type fossil. This phase was characterized by backed points resembling the Chatelperron point, and pointed end scrapers. Truncated pieces and various types of burins are also characteristic. Blades including crested specimens are made very carefully. The butts of flakes and blades are faceted. Cores are generally small and irregularly detached, and are more or less prismatic in shape. Phase 2 (the Ksar Akil Phase B by Copeland [1975]) was characterized by the disappearance of the Emiran points and increase and refinement of backed points. End scrapers including specimens on blade are numerous. Burins are atypical and not numerous. Blades and crested blades, produced carefully, were also reported. Faceted butts are less numerous than in Phase 1. Cores are either prismatic or discoidal. Phase 3 (the Lower Antelian by Garrod [1962] and the Levantine Aurignacian B by Copeland [1975]) is represented by the material from Layer D of *Erq el-Ahmar*. This phase was characterized by pointed slender blades, crested blades, backed points resembling the Font-Robert and Font-Yves types, typical burins, and end scrapers in particular. Faceted butts are not numerous. Cores are small, and are of the discoidal or flat Levallois type. Some of the cores are prismatic. Phase 4 (the Upper Antelian by Garrod [1962] and the Levantine Aurignacian B by Copeland [1975]) was characterized by carinated end scrapers. Some of the burins are intermediate in shape between carinated end scrapers and busqué burins. Crested blades are not numerous. Faceted butts were not traced in this phase. Cores are small to medium in size and pyramidal in shape. Phase 5 (the Atlitian by Garrod [1962] and the Levantine Aurignacian C by Copeland [1975]) was characterized by the abundance of micro-blades and the appearance of microliths. Angle burins, polyhedral burins, and end scrapers, especially in nucléiform, are characteristic of this phase. Phase 6 (the Kebaran by Garrod [1962]) was described as the Upper Palaeolithic to Mesolithic transition of the region. The material from Layer D of *el-Khiam* consists of micro-blades, atypical backed points, burins, and carinated end scrapers resembling polyhedral burins in some cases. No nucléiform end scrapers were reported. Truncated blades, microliths, and crested blades were reported.

Recently, Isaac Gilead proposed a dichotomy of the Levantine Upper Palaeolithic [1988]. According to Gilead, there coexisted two traditions in the Upper Palaeolithic period of the southern Levant from its

beginning, which were partially contemporaneous: the tradition called the Ahmarian, dated by C¹⁴ to 38,000–16,000 B.P., on the one hand, and the tradition called the Levantine Aurignacian on the other. Gilead characterized the Ahmarian by blade-bladelet blanks and high frequencies of retouched, backed and pointed bladelets, as well as by the scarcity of end scrapers and burins. The Levantine Aurignacian was characterized by flake dominated débitage and the abundance of end scrapers and/or burins [*ibid*].

Details of the Upper Palaeolithic of the Zagros region are much less known than the contemporaneous industries of the Levant. Well-known among the Zagros industries of this period so far reported are the Baradostian and the Zarzian.

The Baradostian is represented by the material from Layer C of the *Shanidar* Cave. This industry was so named by Ralph Solecki in 1953 after the name of the mountain indistinctly seen from the *Shanidar* Cave, which Solecki himself had excavated in 1951 [Solecki 1955]. The material from *Shanidar* Layer C was dated by two C¹⁴ determinations to 29,500±1,500 B.P. and >34,000 B.P. [*ibid*]. According to Solecki, the Layer C material is essentially a blade tool industry, consisting of backed blades, blade points, burins, scrapers, perforators, retouched flakes and blades, and numerous notched blades. Included in the burins are angle burins and the “Bec-de-flute” -type burins, and the scrapers include side scrapers, end scrapers, circular scrapers and core scrapers [Solecki 1953; 1955]. It seems that the cores are small, prismatic-shaped, and have a single or opposed two striking platforms [Solecki 1953].

The Zarzian is represented by the material from Level B of the *Zarzi* Cave. This cave site, located in the valley of Cham Tabin in the Zarzi village, 50 km north-west of Sulaimani, was excavated by Dorothy Garrod in 1928, and an industry with microlithic features was unearthed from Level B [Garrod 1930]. The lithic artifacts from all through Level B consist of Gravette points, backed blades, notched and/or denticulated blades, end scrapers, scrapers such as circular scrapers and core-choppers, and burins including the angle type and the Noailles- and the “Bec-de-flute” types. The blades and micro-blades are narrow. The elongated triangle, the only geometric microlith found at this site, was confined to the upper part of Level B, which led Garrod to suggest the separation of the upper part material from the material of the lower [*ibid*]⁵⁾.

Conclusions

In the preceding sections, the surface materials from the regions surrounding Haditha were reviewed in their inventories, and the Middle and Upper Palaeolithic industries of the regions were outlined briefly. In this final section, the characteristic features of the *Rayyash* and *‘Usiyeh* materials are summarized, and their relationships to the lithic industries of the surrounding regions are considered. Also, the natures of the two sites are discussed on the bases of their artifactual characteristics.

The *Rayyash* material is characterized by blade cores with a single striking platform, but interestingly enough most of the débitage pieces are flakes, with elongated flakes or blades very rare. None of the butts of the flakes are multiple faceted, and linear or punctiform butts are not recognized. Overhang removal by abrasion is recognized on cortical and plain butts, however. This abrading operation was in practice to produce blades in the Upper Palaeolithic and the later periods, making edges of blade butts smooth to keep them from being impact-crushed when the blades were detached.

Judging from the presence of the overhang removal by abrasion, one of the important technological treatments in the production of the Upper Palaeolithic blades, it is highly likely that the *Rayyash* material was the product in the Upper Palaeolithic period or thereafter. At present, however, it is not possible to

5) The rock-shelter site of *Warvasi* in west Iran, north-east of Baghdad near the Irano-Iraqi border, yielded Zarzian assemblages above a late phase of the Baradostian. Deborah Olszewski, who analyzed the Zarzian materials from this site, interestingly confirmed what had been suggested by Garrod for temporal division of the Zarzian material of *Zarzi*, and stated that the *Warvasi* Zarzian was divided into two phases: the earlier one without geometric microliths and the later one with them [Olszewski 1993]. Olszewski also stated that the earlier Zarzian at *Warvasi* might have been a direct development from the late-phase Baradostian there [*ibid*].

point out particular lithic industries in the surrounding regions which may have been related to the *Rayyash* material.

At all events, it seems that flakes were being detached expediently, not elaborately, from prismatic cores at *Rayyash*; the reduction of prismatic cores at this site was not aimed for the elaborate production of blades. It is noteworthy that cortical flakes collected at *Rayyash* were large in quantity, which may suggest a factory nature of this site. Also noteworthy, however, is the considerable abundance of heavy-duty tools such as choppers and chopping-tools, and their combination with scrapers and notched pieces. If this inventory of retouched pieces is also taken into consideration, it is rather likely that *Rayyash* was not a mere factory site, but was a place for a kind of work such as butchering or skin scraping, where flakes were being detached expediently in order to make the tools needed on the spot.

The '*Usiyeh*' material is characterized by prismatic cores for non-Levallois blades as well as discoidal cores and centripetally prepared Levallois flake cores. The débitage pieces have faceted butts in many cases, but linear or punctiform butts are rare. The overhang removal by abrasion is seen in one case only. It is now widely accepted that the Levallois methods and blade technology were not very different from each other in that the shapes of the flakes and blades were pre-determined on the cores prior to their detachment; in fact, these two technological concepts are now constantly found associated together in the Levantine Mousterian assemblages. It is very probable, therefore, that the prismatic cores and non-Levallois blades in the '*Usiyeh*' material were the products of the Middle Palaeolithic, and that they were associated elements in the material.

In view of the technological features above, it seems unquestionable that the '*Usiyeh*' material was related to the Middle Palaeolithic of the Levant, particularly to the Levantine Mousterian modelled by Tabun Type B, characterized by Levallois flakes and points. Also, the '*Usiyeh*' material seems to show one of the footprints of the Levantine Middle Palaeolithic population, who arrived in the Haditha region, most probably by way of wadis.

The '*Usiyeh*' material, in overall features, resembles the Middle Palaeolithic collections from the *Masnaa* complex in Haditha. However, there is seen a difference between the two materials; discoidal cores are numerous at '*Usiyeh*', but they are rarely seen at *Masnaa*.

In 1961, François Bordes divided discoidal cores into two categories according to distinct reduction processes. One of his two processes is centripetally-directed and involves continuous removal of flakes and pseudo-Levallois points until the core is abandoned. Another process is the continued reduction of a Levallois core following the removal of a Levallois flake, but even in this case, flakes are detached in the same way as in the other process [Bordes 1961: 16, 72–73]. The reduction processes of discoidal cores described by Bordes resemble the *méthode Levallois récurrente centripète* proposed by Eric Boëda recently, in which multiple Levallois flakes are detached in a series [Boëda 1988]. Experimental replication can, indeed, demonstrate the difficulty to distinguish Levallois flake cores from unifacial cores with discoidal shapes [Ohnuma 1995]⁶⁾.

Bordes had already stated in 1953 that both Levallois and discoidal cores were essentially the same technologically and that they were nothing but different expressions due to different site locations and aspects of raw material including accessibility. At Mousterian sites, rich in raw material, Levallois cores were abandoned extravagantly, while at sites, poorer in raw material, cores were taken in from other places, reduced within the limits of possibility, and abandoned in discoidal shapes [Bordes 1953: 232–233].

In sum, it is inferred that the '*Usiyeh*' material provides an additional datum for Mousterian non-factory sites that were located in natural environments lacking large flint raw material. This inference is based on the observation that cortical flakes as primary products of core reduction are not numerous at '*Usiyeh*'. It also seems that unlike at *Masnaa* many of the Levallois cores at '*Usiyeh*' were reduced as

6) See Lenoir and Turq [1995] for a similar statement.

much as possible and were abandoned in discoidal shapes.

Acknowledgement

I thank Mr. Seiji Kadowaki, M.A. student in archaeology at the University of Tokyo, who completed the drawings of the lithic artifacts which have appeared in this paper.

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Table 1 Inventory of lithic artifacts from *Rayyash*.

	Number
Cores	38
Débitage pieces	117
Retouched pieces	14
Total	169

Table 2 Categories of cores from *Rayyash*.

	Number
Prismatic cores with a single striking platform	20
Cores intermediate between prismatic and pyramidal forms	6
Discoidal cores	1
Levallois flake cores <u>with centripetal preparation</u>	1
Cores with a single flake scar	4
Cores resembling chopping-tools	6
Total	38

Table 3 Categories of débitage pieces from *Rayyash*.

	Number
Cortical flakes	35
Partially-cortical flakes	79
Non-cortical flakes	3
Total	117

Table 4 Categories of partially-cortical and non-cortical flakes from *Rayyash*.

	Number
Non-Levallois flakes	76
Non-Levallois blades	6
Total	82

Table 5 Frequency of butt types of partially-cortical and non-cortical flakes from *Rayyash*.

	B	C	Pl	Df	Mf	L	P	(Ohra)
Non-Levallois flakes		36	37	3				(6)
Non-Levallois blades	1	2	3					(1)

B: Broken; C: Cortical; Pl: Plain; Df: Dihedral faceted; Mf: Multiple faceted;
L: Linear; P: Punctiform; Ohra: Overhang removal by abrasion.

Table 6 Categories of retouched pieces from *Rayyash*.

	Number
Choppers <u>on pebble</u>	3
Chopping-tools <u>on pebble</u>	2
Scrapers <u>on core</u>	2
Side scrapers <u>on core</u>	1
Side scrapers <u>on cortical flake</u>	2
Side scrapers <u>on non-Levallois blade</u>	1
Notched pieces <u>on core</u>	1
Notched pieces <u>on non-Levallois flake</u>	1
Denticulated pieces <u>on pebble</u>	1
Total	14

Table 7 Inventory of lithic artifacts from '*Usiyeh*.

	Number
Cores	172
Débitage pieces	190
Retouched pieces	1
Total	363

Table 8 Categories of cores from '*Usiyeh*.

	Number
Prismatic cores with a single striking platform	45
Prismatic cores with opposed two striking platforms	39
Discoidal cores	59
Levallois flake cores <u>with centripetal preparation</u>	13
Levallois flake cores <u>with parallel preparation</u>	1
Levallois blade cores <u>with centripetal preparation</u>	4
Levallois blade cores <u>with parallel preparation</u>	1
Levallois point cores <u>with centripetal preparation</u>	3
Levallois point cores <u>with parallel preparation</u>	4
Cores with a single flake scar	3
Total	172

Table 9 Categories of débitage pieces from 'Usiyeh.

	Number
Cortical flakes	47
Partially-cortical flakes	101
Non-cortical flakes	42
Total	190

Table 10 Categories of partially-cortical and non-cortical flakes from 'Usiyeh.

	Number
Non-Levallois flakes	87
Non-Levallois blades	28
Pseudo-Levallois points	5
Levallois flakes with centripetal preparation	9
Levallois flakes with parallel preparation	6
Levallois blades with centripetal preparation	1
Levallois blades with parallel preparation	4
Levallois points with parallel preparation	3
Total	143

Table 11 Frequency of butt types of partially-cortical and non-cortical flakes from 'Usiyeh.

	B	C	Pl	Df	Mf	L	P	(Ohra)
Non-Levallois flakes	7	13	37	15	9	1	5	
Non-Levallois blades	3	3	10	8	2		2	(1)
Pseudo-Levallois points	1	1	2	1				
Levallois flakes with centripetal preparation	2				7			
Levallois flakes with parallel preparation	1		2	2	1			
Levallois blades with centripetal preparation				1				
Levallois blades with parallel preparation	1		2		1			
Levallois points with parallel preparation					3			

B: Broken; C: Cortical; Pl: Plain; Df: Dihedral faceted; Mf: Multiple faceted; L: Linear; P: Punctiform; Ohra: Overhang removal by abrasion.

Table 12 Categories of retouched pieces from 'Usiyeh.

	Number
Side scrapers on partially-cortical flake (atypical Levallois flake with centripetal preparation)	1
Total	1

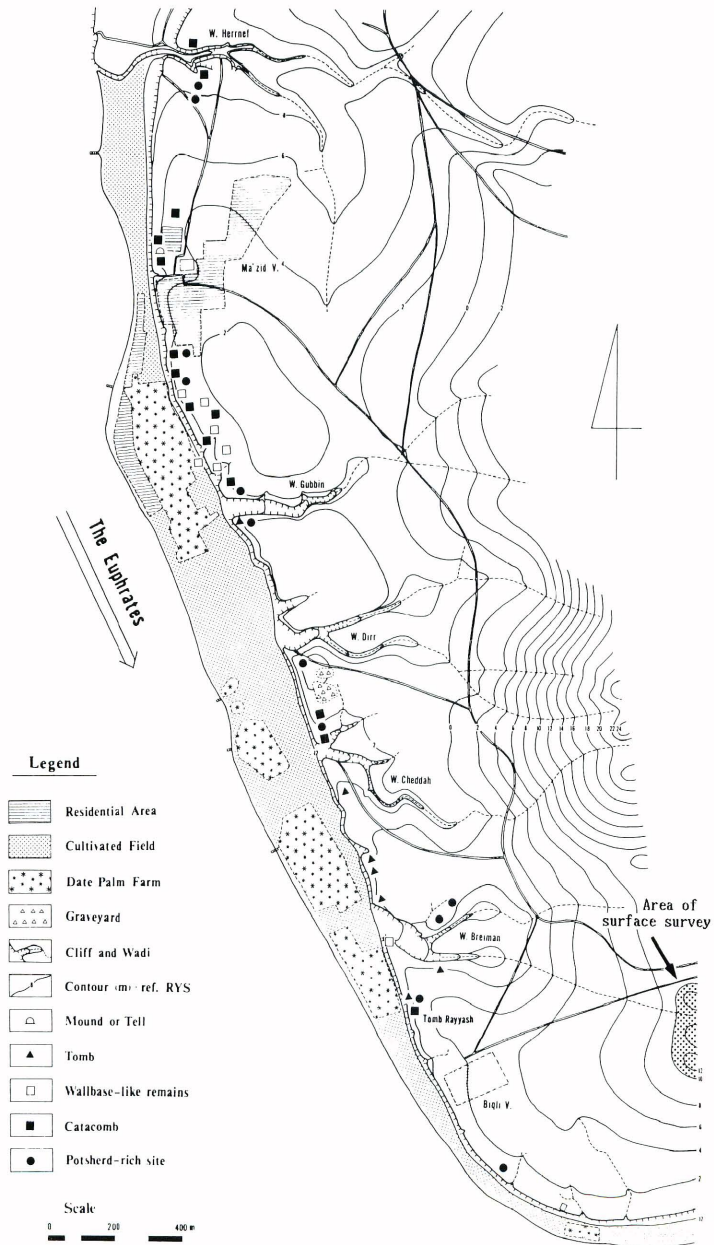


Fig. 2 Map of Rayyash showing the area of surface survey of lithic artifacts.
(After Kokushikan Expedition to Tell Abu Thor [1982/83: fig. 16]).

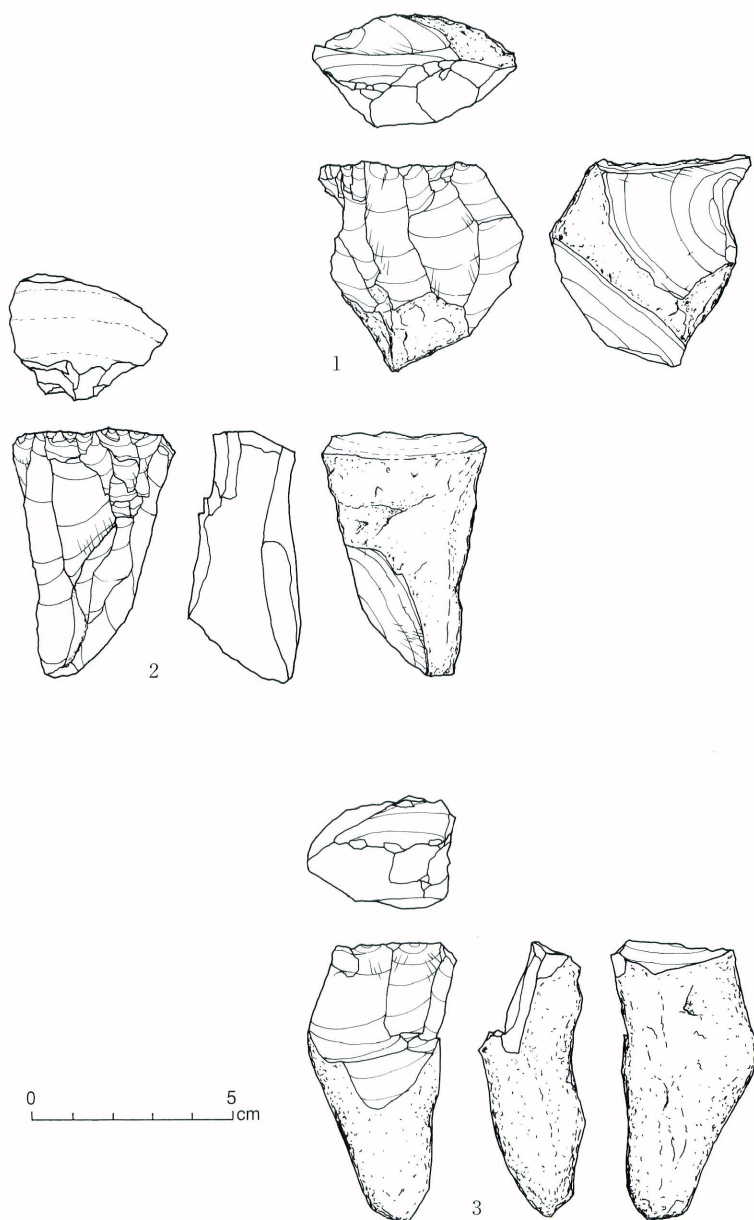


Fig. 3 Lithic artifacts from *Rayyash*.
1, 3: Prismatic cores with a single striking platform;
2: Core intermediate between prismatic and pyramidal forms.

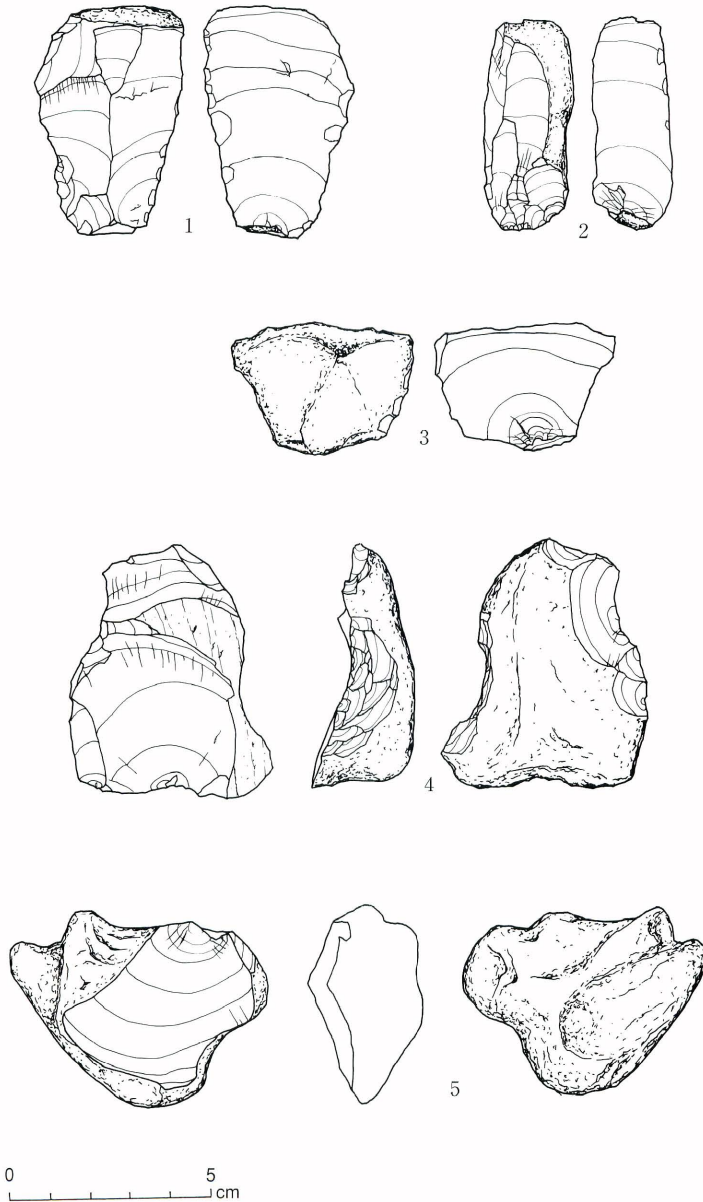


Fig. 4 Lithic artifacts from *Rayyash*.

1: Non-Levallois flake; 2: Non-Levallois blade; 3: Cortical flake;
4: Notched piece on core; 5: Core with a single flake scar.

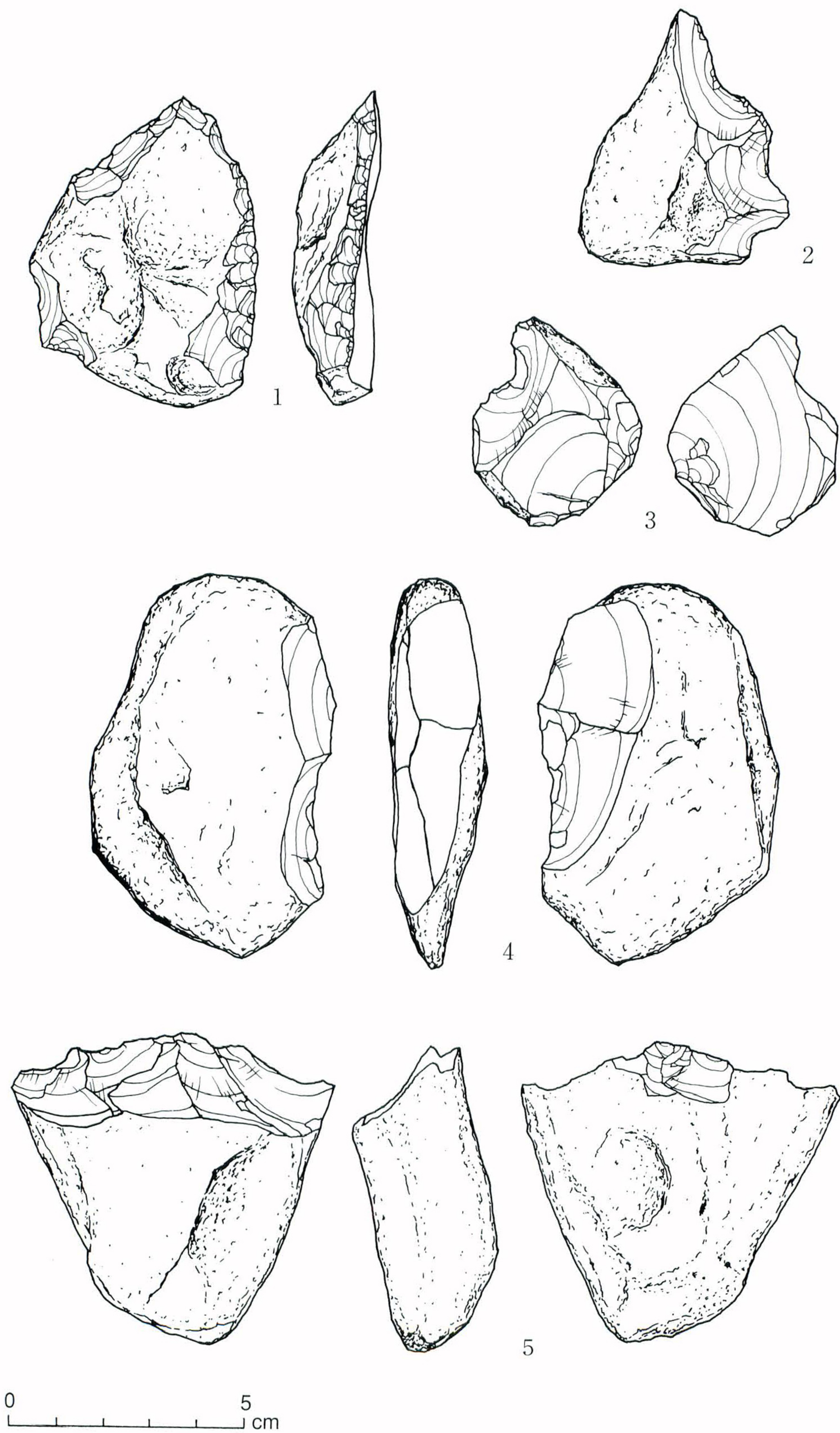


Fig. 5 Lithic artifacts from *Rayyash*.

1: Side scraper on cortical flake; 2: Denticulated piece on pebble; 3: Notched piece on non-Levallois flake; 4: Chopping-tool on pebble; 5: Chopper on pebble.

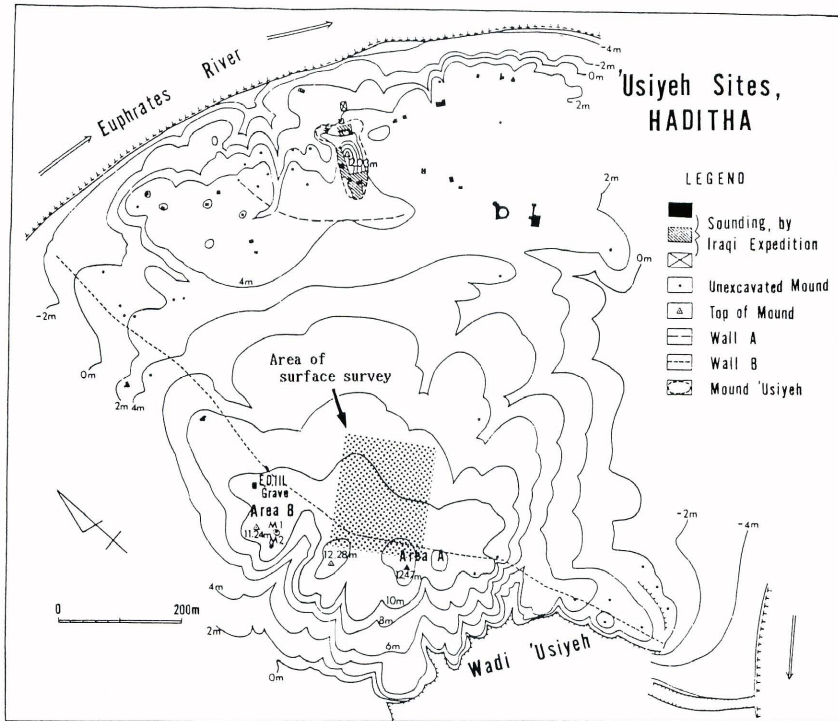


Fig. 6 Map of 'Usiyeh showing the area of surface survey of lithic artifacts.
(After Fujii *et al.* [1984/85: fig. 2-a]).

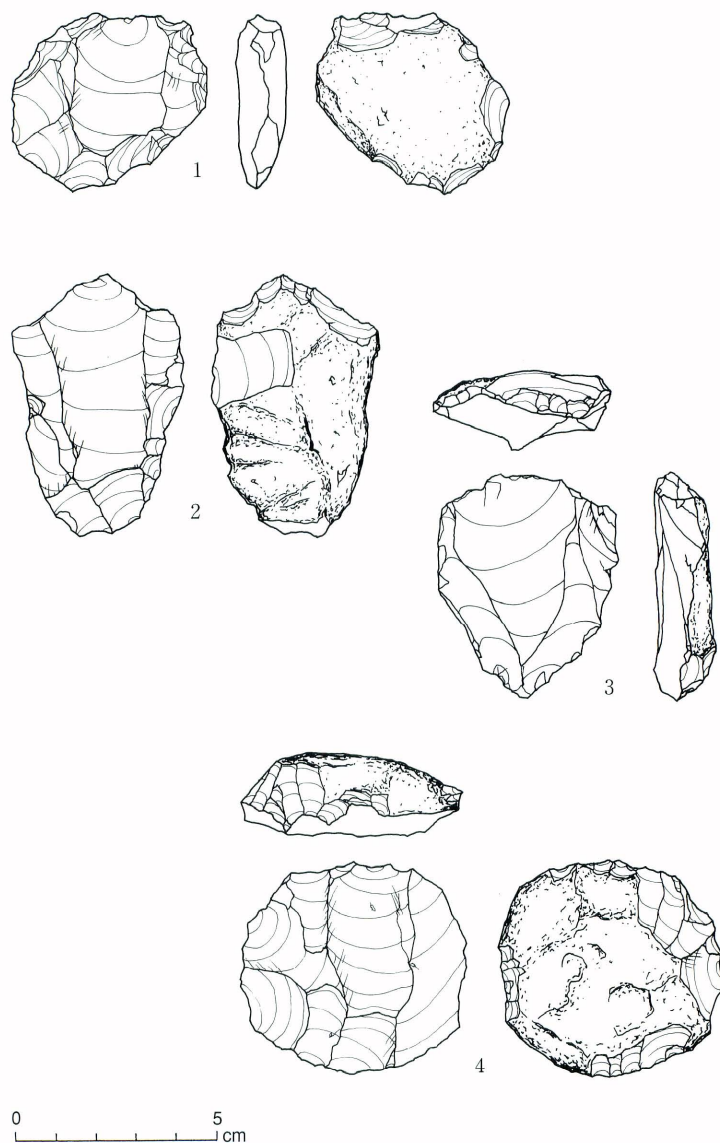


Fig. 7 Lithic artifacts from 'Usiyeh.

1: Levallois flake core; 2, 4: Levallois blade cores; 3: Levallois point core.

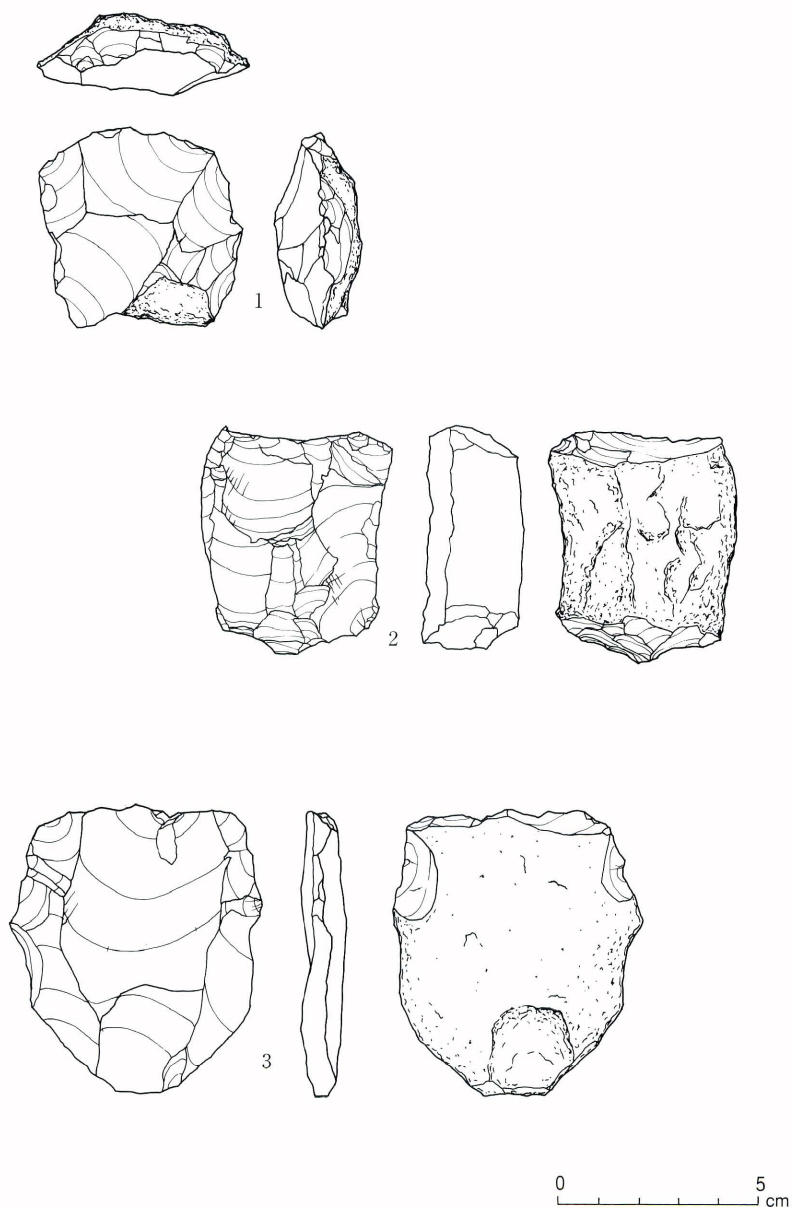


Fig. 8 Lithic artifacts from 'Usiyeh.

1: Discoidal core; 2: Prismatic core with opposed two striking platforms; 3: Levallois flake core.

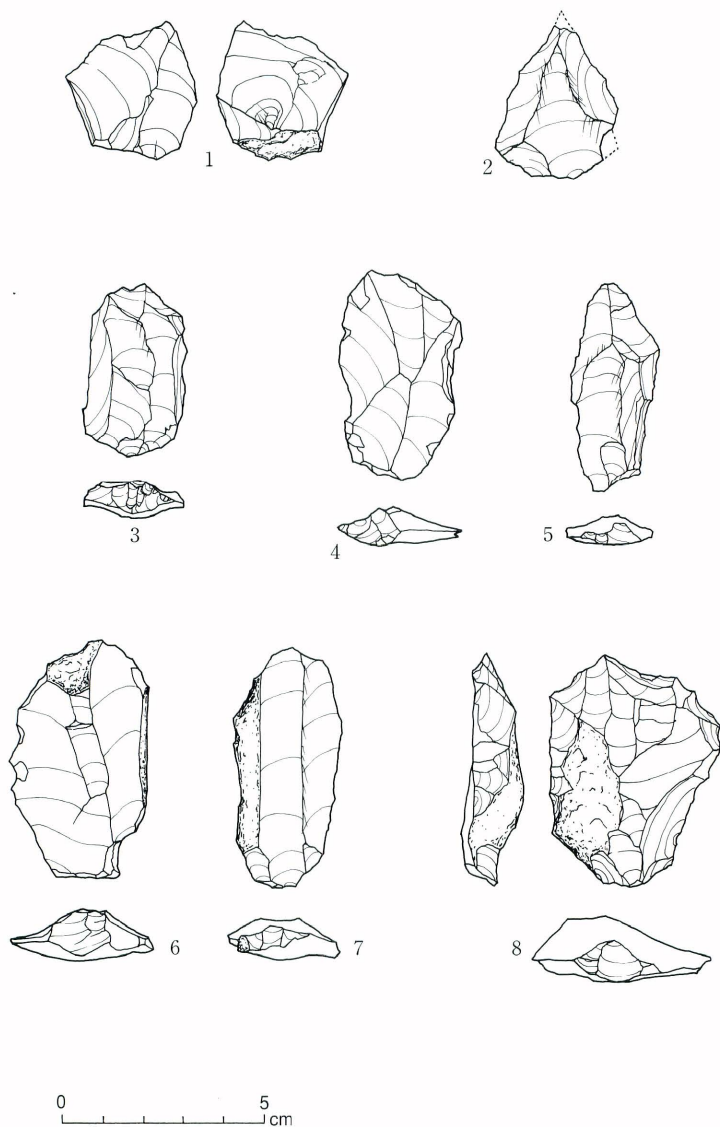


Fig. 9 Lithic artifacts from 'Usiyeh.

1: Pseudo-Levallois point; 2: Levallois point; 3, 4: Levallois flakes; 5: Levallois blade;
6: Non-Levallois flake; 7: Non-Levallois blade; 8: Side scraper on atypical Levallois flake.