Tools versus Cores
TO DAPHNE
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What unites the papers of this volume is an incredibly basic question in stone tool studies, namely whether a particular lithic artifact should be classified as a tool, thus implying that at some time in the past it was used directly to perform activities, or whether it should instead be classified as a core, meaning that its purpose was to produce flakes some of which were then made into tools. This question is so basic that it would seem archaeologists should have worked it out by now, and in most instances this is the case. This volume, however, looks at some of the remaining problem cases in part to find out if they can be solved, but mainly because the really difficult cases raise the more challenging and interesting methodological issues, which can in turn lead us to question and overhaul long-held assumptions and long-used approaches to the study of stone tools. This is, in fact, what happens in this volume. In some instances the very idea of classifying these artifacts as one or the other is entirely discarded; in other instances, it is assumed they fit in both categories, and the behavioral implications are assessed. The end result in each case is a richer understanding of the past less encumbered by categories archaeologists bring to the study.

At a personal level, my motivation to organize this volume also functioned at two levels. On the one hand, I have been working with so-called truncated-faceted pieces from the European Middle Paleolithic and would like to know how they were used. In this case, the implications for Neandertal behavior and for how archaeologists study it are significantly altered if these artifacts are cores designed to produce very small flakes, flakes so small that most archaeologists do not even study them. In other words, it matters whether they were tools or cores. On the other hand, I have also been working with handaxes from Lower and Middle Pleistocene sites. Though most think that handaxes where probably tools of some kind, it has also been suggested that they were primarily cores, and recently it has even been suggested that they were neither tools nor cores but rather a kind of performance art designed to impress the opposite sex. Given that these tools are one of the principal lines of evidence representing over a million years of human evolution, the role handaxes played in Pleistocene technologies is an important question to resolve, yet the traditional, mainly typological and morphometrical, approaches do not seem to have advanced the debate. Thus in this case, unlike the truncated-faceted pieces, it may not matter whether they were tools or cores. Instead, the application of some of the new approaches presented here that bypass the core versus tool question entirely are more likely to provide new insights.
John Lindly, who was also drawn to the topic from work on truncated-faceted pieces, and I organized the session at the Society for American Archaeology meetings in 2000 where the papers in this volume were first presented. Though we are both mainly concerned with Lower and Middle Paleolithic issues, it was also clear that this issue in lithic studies was one that would allow us to move outside our own particular, sometimes quite narrow, study areas to see how others are looking at stone tools. In the end we were quite fortunate to be able to pull together papers across a wide spectrum, from Lower/Middle Paleolithic sites in England to more recent Holocene sites in the New World, and even to quite recent occurrences in the Australian outback. Not every difficult stone tool is represented; that wasn’t the point. Rather, the scope is large enough both chronologically and geographically to reach a diverse enough set of assemblages to provoke a broad range of approaches.

In the end, the question “Tool or core?” is still a valid one, and in some cases the response is reversing years of accepted knowledge. Equally importantly, the response is often “It depends.” The answer depends on a number of variables including at what point in the reduction process the artifact enters the archaeological record, what kinds of activities predominated over the history of the associated deposits, whether raw materials were scarce or plentiful, whether mobility was high and what form it took, and the archaeologist’s analytical framework. It is this appreciation of the dynamic and flexible nature of stone tool technologies that this volume seeks to illustrate and address.

I would like to thank all of the participants in this volume for their contributions and for their patience in seeing this volume through to publication. A special acknowledgement is owed to my friend and colleague John Lindly. Though he was unable to contribute a paper to this volume, he co-organized the session at the meeting of the Society for American Archaeology on which this volume is based, and thus played a critical role in the volume’s origin. Without his help this volume would not have been possible. I would like to thank George Odell and Steve Kuhn for being discussants on the SAA session. I would also like to thank Daphne Katranides for her support and help in the editorial process.

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FLAKES, CORES, FLEXIBILITY AND OBSESSION: SITUATIONAL BEHAVIOUR IN THE BRITISH LOWER PALAEOLITHIC

NICK ASHTON

Introduction

The term ‘flaked flake’ was first devised to describe a particular technology that had been noted at High Lodge (Ashton et al. 1991; Ashton 1992). As the term suggests they are quite simply a flake that has had one or more further flakes removed. Related forms of this technology were fully discussed by Newcomer and Hivernel-Guerre (1974). They have been recognised from different periods and different geographic areas and include forms such as the Kombewa technique from the Early-Middle Stone Age transition in East Africa (Owen 1938; Tixier and Turq 1999), the ‘long sharpening flakes’ and ‘transverse sharpening flakes’ from the Middle Palaeolithic levels at La Cotte de St Brelade (Cornford 1986), and ‘truncated-faceted pieces’ from Middle Palaeolithic contexts in Europe and the Near East (Dibble 1984; Debenath and Dibble 1987:128; see Dibble and McPherron this volume; Hovers this volume; and Schroeder this volume). Even in the late 18th century, a method known as ‘wedge technique’ was deployed to create gunflint blanks by removing flakes laterally from the ventral face of a flake (McNabb and Ashton 1990). Although all these are far more specific in their technique, apart from the gunflints there still remains dispute about which of the knapping products constitutes the desired endform and which the waste. This is also the case with flaked flakes. However, flaked flakes perhaps provide more of an interpretative problem because their form is so varied.

Flaked flakes are fully described in Ashton et al. (1991) and consist of flakes that have had further flakes removed from lateral, proximal or distal edges and from both the ventral and dorsal faces (Figures 1-1b-c, 1-2a-b, 1-3a). There are characteristically between one and four removals on a single piece, but sometimes several more. As such, they incorporate the tool type ‘Clactonian notch’ (Bordes 1961) which happens to have a single removal from the dorsal face. In terms of size they vary from over 130mm to less than 40mm in length. The morphology of the modified edges are normally characterised by straight or slightly concave profiles
with edge angles usually between 50° and 70°. The flake removals or spalls can also be identified, particularly where the bulb of the original ventral face is retained, either on the dorsal face or the butt of the spall (Figure 1-1a, 1-2b, 1-3b-c). The spalls also vary in size, generally being between 70mm and 20mm in length. The variety in form of the flaked flakes and their resulting spalls is indeed one of their characteristics.

The diversity in form of flaked flakes is matched by their chronological range. This type of technology has been recognised at sites dating to OIS 13 such as High Lodge (Suffolk), OIS 11 at Barnham (Suffolk), Bowman’s Lodge (Kent), Clacton (Essex), Hoxne Upper and Lower Industries (Suffolk) and Swanscombe (Kent), to OIS 9 at Little Thurrock (Essex) - (Ashton et al. 1991; Ashton 1992; McNabb 1992; Ashton and McNabb 1996; Ashton 1998a). Within these industries it outnumbers more formally recognised types, such as scrapers and denticulates, and as such it is an important component of assemblages that cover the full chronological range of the British Lower Palaeolithic. Equally, this type of artefact is found in a diverse range of industries, incorporating those that have been described as ‘Clactonian’ and others that have been termed ‘Acheulian’ (Ashton et al. 1991). The purpose of this paper is to describe these artefacts and to discuss the problems surrounding their interpretation, in particular whether they are tools or cores?

Tools or cores?

The problem of whether these artefacts are tools or cores can potentially be studied from four angles. One method is the use of different metrical analyses, directly comparing the size attributes of flaked flakes with cores and tools. A second approach is an examination of the technology to identify similarities or differences in the patterns between core and tool production. A third method is an examination of flaked flake association, whether on single items or specific functional areas; the association of scrapers with flaked flakes for example might suggest that the latter should also be interpreted as tools. Finally, use-wear is perhaps the most obvious means of resolving the problem. However, virtually all the artefacts that have been studied so far have been unsuitable due to post-depositional alteration.

Metrical analyses

Various measures can be used to compare flaked flakes with flake tools on the one hand and with cores on the other. The site with the most prolific number of
Figure 1-1a. Flaked flake spall from the Lower Industry, Hoxne; b. Flaked flake and refitting flaked flake spall from Bed C2, High Lodge; c. Flaked flake from Bed C2, High Lodge.
Figure 1-2 a. Large broken flake, one half knapped as a composite scraper and flaked flake, the other half knapped as a flaked flake, from Area I, Barnham; b. Scraper and refitting flaked flake spall that has removed part of the scraper edge, from Bed C2, High Lodge.
Figure 1-3 a. Broken flake, one half knapped as a scraper, the other half knapped as a flaked flake, from Area I, Barnham; b. and c. Flaked flake spalls from scrapers that have been further retouched on the distal edges, from High Lodge.
flaked flakes is that of High Lodge (Ashton 1992). For the purposes of the metrical analyses the assemblages from beds C2, D and E have been used. As with the other analyses below, it is assumed for the present that Clactonian notches are flake tools.

Figure 1-4 Comparisons between the maximum lengths (mm) of cores, flake tools (including notches) and flaked flakes.
The lengths of flaked flakes, flake tools and cores are shown in Figure 1-4. There seems to be little difference between the artefact types, although there is a good correspondence between flake tools and flaked flakes, with slightly higher values for cores. This is not surprising, however, given that the majority of cores started life as nodules, as opposed to the tools which started as flakes.

Comparison between the weights for these artefact types shows a similar range (Figure 1-5). As would be expected, there are heavier examples of cores, for the very same reason that lengths are also greater.

**Figure 1-5** Comparisons between the weights (gm) of cores, flake tools (including notches) and flaked flakes.
A more meaningful comparison perhaps is between the flake scar lengths on flaked flakes and those on cores. These scars are clearly the final removals, and on the cores they ought to represent the range of smallest acceptable flakes that would be used. The results show that the flake scars on cores are generally larger (Figure 1-6). However, the important point is that many of the final removals on the flaked flakes are similar in size to the removals from the cores. This suggests that there is little reason why at least some of the flaked flakes cannot be interpreted as cores.

Figure 1-6 Comparisons between the maximum lengths (mm) or cores and flaked flakes from High Lodge.

The results from the metrical analyses are inconclusive. There is certainly considerable overlap in the size and weight ranges of all three categories of artefact. Any differences that are apparent between the cores and the flaked flakes and flake tools are easily explained through the larger original blank size of the cores. Generally the metrical analyses contribute little to the answering of the question.
Technology

A different approach can take the comparison between the technologies of cores and flaked flakes. If a distinctive method of manufacture can be found on the flaked flakes that is markedly different to that on the cores, then it might be argued that there are differences in function. If by contrast, the technologies can be shown to be similar, then it bolsters the interpretation that indeed flaked flakes are cores.

Lower Palaeolithic core technology has been described as consisting of discrete core episodes, with one or more core episodes been undertaken on each core. These core episodes consist of single removal, parallel flaking or alternate flaking. These techniques are fully described by Ashton (1992), Ashton and McNabb (1996), and Ashton (1998a). Briefly, single removal, as the term suggests, is the knapping of an isolated flake, but which can develop by further flaking in the same direction into parallel flaking - a sequence of removals from the same or adjacent platforms. Alternate flaking develops if the proximal ends of the flake scar(s) from the single removal or the parallel flaking are used as the platforms for the next one or more removals. The flaking develops further by turning the core back to the original direction and removing further flakes. This type of technology occurs in the full range of Lower Palaeolithic industries (McNabb 1992; Ashton 1992; Ashton and McNabb 1994; Ashton 1998b).

The sequence of removals on flaked flakes appears to be similar to those found on cores, where single removal (Figure 1-1c), parallel flaking (Figure 1-2a) and alternate flaking (Figure 1-1b) can also be recognised. Comparison between cores and flaked flakes does seem to show a common approach to knapping, where the same suite of gestures is undertaken. This would tend to strengthen the interpretation that flaked flakes are cores, but it cannot be taken as definitive proof; the same processes might operate, but for entirely different purposes. Equally, some aspects of this technology can also be found on Clactonian notches. If their interpretation as tools is correct, this also weakens the technological argument. In reality, technology seems to throw little light on the question.

Artefact and Site Association

A different way of approaching the problem is through functional association. Potentially this could be at the level of the individual artefact or in terms of site function. For example, artefacts might bear both scraper retouch and flaked flaking on the same piece. At the site level, what is clearly a use, as opposed to a manufacturing area, might contain high proportions of not just scrapers but also flaked flakes. If associations of this kind are found, then the implication is that flaked flakes are more likely to be tools rather than cores.
Unfortunately, distinct areas of artefact use are virtually non-existent in the British Lower Palaeolithic. Occasionally there are hints of this, such as at Barnham (Ashton 1998b) but elsewhere such as Boxgrove it is the discard or resharpening of bifaces (Bergman and Roberts 1999) and cut marks on bones (Roberts 1999) that provide more solid evidence. Normally with flake and core debitage the individual signatures are not usually distinct enough to differentiate between manufacturing and use. At many of the in situ sites the source of raw material is almost always within a short distance. The result is that manufacturing debitage tends to predominate over tool discard. In the absence of distinct tool using areas, it is impossible to determine the function of flaked flakes from spatial evidence.

The evidence of association on individual pieces can throw more light on the question. There are several examples where flaked flakes have been created on the same blank as scrapers. In all the examples, where it is possible to determine, the flaked flaking occurred after the retouching (Figure 1-2, 1-3a), often with the flakes removed from existing scraper edges, in effect creating a secondary scraper (Figure 1-2b, 1-3b-c). These specific cases were first noted by Coulson (1990) at High Lodge and described as ‘cannibalised scrapers’. She argued that it was the secondary scraper (the spall) that was the desired endproduct. In other instances at both High Lodge and Barnham the flake was removed from a different part of the scraper, not necessarily affecting the scraper edge (Figure 1-2a). This might suggest that in these examples the flaked flakes should be regarded as flake tools.

In some cases, there is more direct evidence of their interpretation. There are two examples from High Lodge, where flaked flake spalls have been removed from the edge of scrapers, and then have themselves been further retouched (Figure 1-3c). This suggests that here the spalls were used and the flaked flakes were the cores. The only other direct evidence comes from microwear. A flaked flake from Barnham shows some evidence that it was probably used on meat (Donahue 1998).

The evidence from artefact association is again inconclusive, with some pieces suggesting that flaked flakes are tools, while others suggest that they are waste products or cores. Equally, the slim but direct evidence from the modification of spalls and from microwear provides conflicting answers.

**Discussion: Flexibility and obsession**

Although the above analysis provides conflicting evidence for the interpretation of flaked flakes, one thing that is perhaps clear is that these artefacts have a different function at different times or are perhaps even multi-functional. The key to their interpretation seems to lie in the flexibility of the approach, where flaked flakes can be both tools and cores, dependant on the particular need at a specific time. The suite of gestures deployed on cores is also adopted for the modification of flakes, whether it is for tool manufacture, tool modification, or for
the production of new tools. To divide them into tools and cores is missing the point and purpose of the hominid approach to this type of technology. Equally, as is quite apparent from the metrical analyses, they were not tied to specific size templates, but rather to the functionality of the edges.

This flexibility in approach reflects the remainder of Lower Palaeolithic technology which appears to be opportunistic and situational in nature; curation, even with bifaces, appears to be short-lived (Austin and Roberts 1999; Bergman and Roberts 1999; Roberts 1999), and their form, at least in a British context, seems to be broadly related to local raw material (Ashton and McNabb 1994; White 1995, 1996, 1998a; Ashton and White 2003) and on occasion resharpening (McPherron 1994, 1995) rather than style. The flexibility is also reflected in the creation of tools, such as scrapers where the form of the blank appears to determine the location of the retouch; it is the functional considerations that are dominant rather than ‘mental templates’ (Ashton 1992; Ashton and McNabb 1994; Ashton 1998a). Equally, artefact manufacture, use, and discard often occur in the same location or within a short distance of each other, for example at Hoxne (Wymer and Singer 1993), Barnham (Ashton 1998a) and Boxgrove (Roberts 1999).

Figure 1-7 Simple and complex systems of core, flake, and flake tool manufacture use and discard.

The flexible use of flakes as cores and tools also has implications for how we interpret artefact discard patterns. A simple division into tools and waste is difficult to achieve and will only provide a blurred view of real artefact purpose. This is particularly the case given the difficulty of identifying unretouched tools from waste flakes due to the problems of using microwear (see above). Certainly, far
more complex systems are required to accommodate artefact histories. This is illustrated in Figure 1-7 where the traditional approach of artefact interpretation is given, compared to a more likely reflection of artefact use and discard. Increased complexity in discard is also likely to be mirrored in the spatial context with more complex spatial patterns.

If the more complex model is correct, then the effect on assemblage composition will be much more acute in situations of raw material shortage, where the reuse and resharpening of artefacts will be greater, leading to greater discard lower down the tree, i.e. the second, third and fourth phases of knapping. This will result in an increased proportion of flake tools, but also of flakes used as cores. Generally, however, within a British context raw material shortage appears to have been less of a problem, with the majority of sites being within short distances of abundant sources. The quality and form of the raw material were probably much bigger variables.

Whatever the complexity of the assemblage history through artefact reflaking and reuse, attempting to distinguish between the functions of different sites, even on the scale of lithic production versus lithic use, is usually difficult. This is due first to many assemblages being time-averaged (Stern 1993, 1994) or disturbed sufficiently to provide only generalised archaeological signatures. Second, even on sites that are better temporally defined, manufacture, use and discard often seem to have taken place in the same location, as a reflection of their opportunistic approach to lithic production. Finally, in the absence of microwear, lithic use can only be distinguished where bifaces or scrapers have been discarded, as opposed to unretouched flakes and flaked flakes that might well have been used but might equally be waste products.

These difficulties are most acute at the inter-site level, but at the intra-site level, differences in area use can occasionally be discerned. At Barnham, two geologically contemporary areas - Areas I and IV(4) - had immediate access to the same raw material (Wenban-Smith and Ashton 1998), but in Area I tool discard was five times greater than in Area IV(4) (Ashton 1998b). It seems possible in this instance to distinguish an area of increased tool use or at least discard. This forms part of a study that has attempted to reconstruct areas of landscape. A model has been developed that sees resources (whether they be lithic raw material, water, vegetation stands, or scavenging and hunting opportunities) as the key to understanding assemblage variation. It has been argued that the varying permanence of these resources would have an impact on the amount of repeated discard in one location, with lithic raw material as a relatively static resource providing a focus for repeated discard. At the opposite extreme, butchery sites will be dependant on kill or scavenging locations that are likely to be distributed more widely in the landscape and be of far less permanence. This model has been termed the Static Resource Model (Ashton 1998b) and at least in a British context provides
a means of understanding and interpreting assemblage variation within a single landscape. This apparent intimacy with the resources upon which they were reliant is very much part of the flexibility and opportunism in their approach to lithic production, use and discard.

The immediacy of their technology is also reflected in a rather different way. Certain artefacts appear to have been knapped beyond the point of functionality. Despite an abundance of raw material, cores were often reduced to the point where the resulting flakes seem too small for likely use. Perhaps in these cases the core was being worked as a tool, though usually there was no clear edge being prepared. In other cases tools were produced, then reworked or resharpened sometimes to the detriment of their prehensile qualities. Examples from Barnham illustrate the point. In two instances flakes less than 8cm in length were selected for further working. In each case the flake was broken laterally, and each half was further reworked either as a scraper or flaked flake. One of the scrapers was extensively resharpened as is clear from the refit to its other half (Figure 1-2a, 1-3a). This activity all took place in one location, surrounded by an abundance of large flakes and cores (Ashton 1998a).

In these cases, not only is there an immediacy to the technology, but also an apparent obsession with specific artefacts. One interpretation might argue that this is a reflection of tunnel-vision, with the repetition resulting from being stuck in a cerebral rut. The flexibility in the remainder of their technology might argue against this, and an alternative interpretation of this is that it is a very human characteristic, where importance is attached to material items beyond the purely functional level. All artefacts are cultural items, but how they are viewed and valued by their makers is a different issue. Some biface characteristics, such as the twist on some ovates, may well be a stylistic phenomena (White 1998b), but again it is not clear whether this is an explicit expression of style or merely the automatic repetition from previous generations. The apparent obsession with particular items is perhaps an early expression of materialism, where value is placed in items for their own sake, over and above the levels of economy, function and tradition. Is this another sighting of the individual for which Gamble (1998) so strongly pleads? It does seem, however, that any material attachment to the artefacts that might have existed was short-lived, given the probable short time over which they were produced, used, resharpened and discarded.

**Conclusions**

Any attempts to interpret flaked flakes, whether through metrical analyses, technology or artefact and site association, largely fail to distinguish between their function as cores or tools. What they do suggest is that flaked flakes were probably used as both, reflecting a flexibility in technology. This suggests that there were
more complex and dynamic patterns of production, use and discard. However, in a British context the effects on assemblage composition are probably reduced due to the quantity of raw material that was normally available. What is also apparent is an occasional obsession with individual artefacts, that could either be interpreted as the first inklings of materialism or otherwise a simple matter of tunnel-vision.

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Introduction

This paper has two objectives: first, to place on record the initial report of truncated-faceted pieces as illustrated and described in my PhD thesis on the Syrian desert cave of Jerf al-Ajla (Schroeder 1966, 1969) including their chronological and industrial relationships. Second, to offer a series of observations aimed at understanding this complex in the context of the Levantine Mousterian. The paper concludes by asking whether the question "tools or cores?" adequately deals with the analytical issues raised by these pieces.

The truncated-faceted lithic technique, which has also come to be known as "the Nahr Ibrahim technique" (Solecki and Solecki 1970) and "cores on flakes" (Newcomer and Hivernel-Guerre 1974) is now recognized as a distinct lithic complex at sites throughout the Levant (Fleisch 1970, esp. p. 49; Akazawa 1974; Copeland 1975; Crew 1976; Nishiaki 1985; Goren-Inbar 1988), elsewhere in the Middle East (e.g., Dibble 1984), in other areas of western Eurasia (Bordes 1971; Debenath 1988) and even beyond, as exemplified by this volume. Even before the 60s it has been illustrated, though not acknowledged as a distinct form in early reports on two major Levantine sites: Emireh Cave (Garrod 1950) and Jabrud (Rust 1950). Examples of the same technique have appeared even earlier in other parts of the world but under such designations as "sinew-frayers" (Leakey 1935) and "Kostienki knives" (Efimenko 1958, cited in Klein 1969; Klein 1973; see also Bordes 1968; Turq and Marcillaud 1976).

There may be many collections where t-f pieces (perhaps a more convenient designation than "truncated-faceted") are present but unrecognized. Even where recognized, analysts disagree on what the complex represents: a tool, a core or something else (see Debenath 1988 and the following discussion)?

Why so much uncertainty exists is, on one level, relatively obvious: it is a feature that does not fit any of the standard typological categories. Truncated-
Truncated-Faceted Pieces from Jerf al-Ajla

Faceted pieces tend to disappear within or be overlooked by their association with (and appearance on) well-recognized typological forms such as Levallois and non-Levallois flakes, retouched pieces such as side and end-scrapers, burins, standard truncations, etc. In addition, truncations which serve as faceting for the removal of secondary flakes may sometimes be mistaken for the faceting on that flake's original striking platform. Understandable difficulties can arise determining whether the truncation at a flake's distal end was placed there intentionally as faceting to guide the removal of secondary flakes or had been part of the edge preparation of the original core's flaking surface. Occasionally recognition of the feature is incomplete, seeing only the basal or bulbar thinning (Fleisch 1970), overlooking secondary flake removals that begin at the truncating retouch. Secondary removals are sometimes never differentiated from the original core preparation flakes on the dorsal/exterior surface of a flake.

This raises an even more fundamental issue than what this lithic complex represents. Before considering that problem the question must be asked, are we all dealing with the same phenomena? As Whittaker et al. (1998) remind us, the usefulness of types depends on clarity and agreement among users of definitions. Reinforcing this position, Bisson (2000) makes the point that before analysis comes detailed description. As stated above, an objective of this paper is to put on record the original description and definition of truncated-faceted pieces.

The lithic material from Jerf al-Ajla provides several advantages for investigating this complex. The collection is large and the truncated-faceted pieces within it are abundant and diverse, particularly in the upper layers of the sediments. They come from nearly every layer of the 6½ m thick deposit and industrial series which span nearly 150,000 years. The sequence begins at the end of the Final Acheulian, continues through nearly 5 m of Levantine Mousterian, and terminates in the "Intermediate" (or "Late") Mousterian in the upper layers (Bourguignon 1996, 1998). Only the upper layers of the site have thus far been dated by C14 (Grant-Taylor and Rafter 1963) and by TL (Bourguignon 1996, 1998; Julig et al. 1999; Richter et al. 2001).

Background: Encountering Truncated-Faceted Pieces

A brief account of the author's initial encounter with truncated-faceted pieces may shed light on why their recognition (and, in some cases, acceptance) has taken so long and, in the process, begin to elaborate on their morphology.

In 1964 while studying the lithic collection from Coon's 1955 excavation at Jerf al-Ajla a peculiar lithic trait became increasingly apparent, one not covered in the established typological schemes. At that time the Bordes system was the standard method for organizing the diversity of flaked material from the
Lower and Middle Paleolithic of Western Eurasia (Bordes 1961). In the 1960s, Bordes offered the most complete, well-defined, widely accepted and accessible typology. Nevertheless, nothing close to what was appearing in the Jerf al-Ajla collection was evident in Bordes’ typology, nor in other detailed lithic descriptions of the time (e.g., Brézillon 1968; Heinzelin de Braucourt 1962).

Not only is there nothing like this feature in the Bordes list, but the two basic attributes which make up this complex—a semi-abrupt inverse truncation, serving as a faceted striking platform, and the removal of secondary flakes from that platform-truncation—appear on a variety of well-recognized retouched tools and forms, such as side-scrapers, burins, éclats débordants (Figures 2-1, 2-2, & 2-3). Consequently at Jerf al-Ajla, as at other sites, e.g. Bisitun Cave (Dibble 1984b), this complex cuts directly across the standard Middle Paleolithic tool repertoire. As a consequence, this complex may have been overridden and obscured by the dominating effect of the tool class with which it is associated. As with examples mentioned earlier, the presence of certain attributes could lead to confusion (e.g., when the presence of faceting at a flake's proximal end might be mistaken for a faceted striking platform). Similarly facets truncating a flake's distal end could be confused with what had been faceting around the original core margin. These difficulties can usually be resolved by close examination of the point of origin of the small secondary flakes on a flake blank's dorsal surface. These removals should start at the truncation. This is most obvious in the case of a flake truncated-faceted at its proximal end. If the point of origin of the secondary removals begins at the truncation (typically where two of the truncating facets intersect) and if the flake's bulb of percussion has been cut by that truncation, then the secondary flakes must have been removed after the primary blank was struck from the core (e.g., Figures 2-1 & 2-2).

It should be remembered that until recently, typology for Paleolithic studies emphasized gross morphology aimed mainly at establishing chronological and spatial relationships, what Bisson (2000) refers to as “‘two-dimensional’… plan form attributes.” This approach typically ignored such sub-typological features as working edge angle and other complicating factors such as the kind of attributes required to define truncated-faceted pieces: truncations serving as platforms for the removal of small secondary flakes.

**Jerf al-Ajla**

The cave of Jerf al-Ajla is located 20 km northwest of Palmyra, the former caravan town of Tadmor in the steppe-desert of central Syria. The cave’s broad mouth opens at the base of one of the few relief features crossing the Syrian