LITHICS FROM EVALUATIONS - HELP OR HINDRANCE?

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INTRODUCTION
There are many approaches to the recording of flint from archaeological sites. The approach of an analyst should be guided by the nature of the fieldwork and the required end product. These may be simple and straightforward aims but there is a danger of becoming bogged down in detail too early on in the process resulting in at best too detailed a report, and at worst, misleading conclusions about the nature of the assemblage present. The potential for assessing lithics from evaluations is presented using some recent examples and cautionary tales. This paper is written from a background based in the analysis of Mesolithic-Bronze Age flintwork, but the majority of the approaches and general themes could be applied to earlier lithic material.

ASSESSING LITHICS
Evaluations are perhaps the most difficult archaeological exercise to undertake well, conditions on site may be difficult, involving small and frequently deep trenches. It may be impossible, given the nature of the brief, to actually uncover as much as one would like; the features uncovered may be difficult to interpret. Frequently the range of artefacts recovered is limited and often the written report is required within a relatively short period of time from the end of the fieldwork. All of these factors are compounded by the unremitting tedium of cleaning and recording in such a limited and constrained way. Whilst undertaking lithics assessments the most frequently asked questions are ‘what is it and how old is it?’ This situation is understandable and purely a product of the general constraints of the evaluation process, and undue criticism should not be placed at the door of the excavators. However, the ‘what is it and how old is it?’ question forms only a part of what can be achieved with lithics from evaluations. The case studies presented in this paper, but also the results from other evaluations presented elsewhere in this volume, are a testament to this.

How then should lithics be approached? Unless the assemblage recovered possesses diagnostic retouched artefacts or particularly characteristicdebitage, dating and interpreting the material may be difficult and frequently a very subjective assessment may be made. Whilst there is room for some subjectivity, speculation based on scant evidence should be discouraged. Overstating the case at the assessment stage can cause problems later. Thus a systematic approach to the recording and interpreting lithics from all archaeological investigations, but more particularly from evaluations, given the problems often associated with them, is required. In general broad date ranges are probably all that one can hope for unless there is a very diagnostic assemblage with good associations. Mesolithic and earlier Neolithicdebitage are, for example, difficult to distinguish without the relevant retouched component, unless the former is particularly diagnostic. A description of the technology of the material with a discussion of the likely dating of that particular technology with reference to the site and any associated artefacts is far more useful than an over-speculative date range. Technological indicators have been used by many authors to aid dating (eg Ford 1987; Holgate 1988; Brown 1991). However, sometimes these indicators may be applied too rigidly without reference to the types of raw materials being used, the products being made, the skill of the knapper and the nature of the site, factors which will all affect the ‘quality’ of the artefacts produced. The context of manufacture and deposition of artefacts may also affect the overall ‘quality’ of the pieces (Brown 1991).

As well as excavated trenches, test-pit sieving and fieldwalking may also be undertaken as part of a scheme of evaluation. Both test pits and fieldwalking may produce quantities of abraded and plough damaged material, frequently of mixed date. Given the lack of archaeological context it is better to deal with such material relatively swiftly to provide broad-brush results which can then be further tested by other archaeological techniques such as excavation (cf. Healy 1989, 52).

METHODS
However lithics from evaluations are approached it is important to recognise that there should be realistic expectations at the outset. Dating the assemblage may not be simple, as we have already seen, and this may be exacerbated by the thin distribution of finds over a wide area. Or, perhaps more rarely, there may be a vast quantity of material awaiting assessment. In such situations representative samples should be looked at, with the remainder perhaps being scanned for diagnostic retouched types or debitage. Where broad dating is possible on typological or technological grounds, or more likely a combination of these factors, further refinement may be impossible due to the recovery methods employed. An example from the present volume is Purfleet where Lower Palaeolithic flint was recovered from test pits but the cultural affinities of the material cannot be refined because of the recovery strategy employed (Bates et al., this volume). Whilst this particular evaluation was oriented towards the recovery of Palaeolithic material, the techniques employed require refinement to maximise the
stratigraphic control of finds recovery. It should also be remembered that excavators frequently have unrealistic expectations of what can and cannot be done with lithics at the assessment stage.

Recording systems
There are many possible ways to record lithics, and much of what should be recorded is up to professional judgement and experience, but at the assessment stage it is often easier to keep the recording to a minimum, by which is meant an accurate estimate of the quantity of material, its likely date range(s) and the potential for undertaking any further detailed analyses such as refitting, attribute analysis, including metrical data, and usewear or microwear studies. The general condition of the assemblage, raw materials used and any obvious biases in the assemblage should also be noted. A method statement explaining how the results have been gathered is also useful. Appendix 4 of English Heritage’s Management of archaeological projects (MAP2; 1991, 32-3) provides the framework for all assessments and the basic principles can be applied whether or not the project is English Heritage-funded. If there are particular questions that need to be addressed at the assessment stage, a sample of the material may be used. It is often unproductive at a very early stage to undertake detailed analysis of the material, funding is rarely available for such work and any the stratigraphical analysis may not be at an advanced enough stage to be fully understood. Table 1 might provide the route a lithic analyst would take for an assessment.

Table 1 Possible route to assessing lithics from evaluations

<table>
<thead>
<tr>
<th>ARCHAEOLOGICAL EVALUATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>PRODUCE LITHICS</td>
</tr>
<tr>
<td>ASSESS LITHICS</td>
</tr>
<tr>
<td>Rapid scan with accurate estimates of quantity if large assemblage, scanning remainder; real counts if assemblage is small. All work undertaken in conjunction with other specialists and using site data provided by excavator. Site visit during fieldwork if practical</td>
</tr>
<tr>
<td>Recommendations for future analysis</td>
</tr>
<tr>
<td>NO FURTHER EXCAVATION</td>
</tr>
<tr>
<td>Archive lithic assessment</td>
</tr>
<tr>
<td>FURTHER EXCAVATIONS</td>
</tr>
<tr>
<td>No further lithics</td>
</tr>
<tr>
<td>Produce summary of lithics from evaluation for inclusion in publication/SMR</td>
</tr>
<tr>
<td>Assess potential and produce publication report in conjunction with other specialist reports and site data</td>
</tr>
</tbody>
</table>

CASE STUDIES
The results of three evaluations are presented and discussed (New Plantation, Tubney, Yarnton and Kidlington). The sites are all in Oxfordshire and were all excavated by the Oxford Archaeological Unit. The trenches were all machine-excavated and measured 30 x 1.58 m, unless stated. The deposits were generally machine-excavated down to the first archaeological horizon or visible features, hand-excavation of selected features or deposits was then undertaken. The text-pit sieving undertaken at New Plantation, Tubney, is explained more fully below. Artefacts were mostly hand-retrieved and soil samples taken specifically for finds recovery were taken in some instances. The flint recovered from the evaluations and subsequent excavations from all three sites is presented in Table 2.

New Plantation, Tubney
Firstly, at New Plantation, Tubney, an evaluation was undertaken in 1988 by Richard Chambers in advance of a planning application by Hills Aggregates Ltd for sand extraction (Bradley and Hey 1993, 1). Approximately 11 hectares were assessed using standard evaluation trenches (c 30 x 1.80 m), placed at intervals across the area under investigation; some smaller trenches were also used. The extant tree cover hampered the location of some trenches and this also dictated the overall trench layout. Previous
### Table 2 A comparison of flint from evaluations and subsequent at Tubney, Yarnton and Kidlington, Oxfordshire

<table>
<thead>
<tr>
<th>Site</th>
<th>Flakes</th>
<th>Blades, blade-like flakes etc</th>
<th>Chips</th>
<th>Irregular waste</th>
<th>Cores, core fragments</th>
<th>Retouched forms</th>
<th>Other</th>
<th>Total</th>
<th>Burnt unworked flint</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tubney - evaluation</td>
<td>18</td>
<td>20</td>
<td>-</td>
<td>1</td>
<td>2 (1 multi-platform flake, 1 opposed platform blade)</td>
<td>3 (1 scraper, 1 serrated flake, 1 microlith)</td>
<td>-</td>
<td>44</td>
<td>1</td>
</tr>
<tr>
<td>Tubney - test pit sieving</td>
<td>2229</td>
<td>1422</td>
<td>2746</td>
<td>94</td>
<td>39 (13 blade, 3 single platform flake, 4 multi-platform flake, 1 discolal, 13 tested nodules, 5 fragmentary)</td>
<td>90 (38 microliths, 9 scrapers, 2 borers, 19 microdenticulates, 8 backed flakes, 1 truncated piece, 1 transverse arrowhead, 12 miscellaneous)</td>
<td>-</td>
<td>6620</td>
<td>86</td>
</tr>
<tr>
<td>Yarnton - evaluation</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>-</td>
<td>49</td>
<td>3</td>
</tr>
<tr>
<td>YFP91</td>
<td>31 (inc 1 core rejuvenation flake)</td>
<td>7</td>
<td>2</td>
<td>2</td>
<td>1 (single platform flake)</td>
<td>6 (1 end scraper, 1 retouched flake, 4 serrated flakes)</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>YC93</td>
<td>135**</td>
<td>-</td>
<td>17</td>
<td>6</td>
<td>7 (1 single platform blade-like, 2 multi-platform flake, 1 keeled, 3 core fragments)</td>
<td>18 (1 microlith, 6 barbed and tanged arrowheads, 4 scrapers, 1 knife, 3 retouched flakes, 3 miscellaneous)</td>
<td>-</td>
<td>183</td>
<td>43</td>
</tr>
<tr>
<td>Yarnton - subsequent area excavations</td>
<td>1687**</td>
<td>120</td>
<td>717</td>
<td>40</td>
<td>57 (3 blade, 4 single platform flake, 14 multi-platform flake, 3 keeled/Levallois flake, 1 core on a flake, 1 tested nodule, 31 core fragments)</td>
<td>231 (2 microliths, 4 leaf arrowheads, 3 oblique arrowheads, 1 unfinished arrowhead, 23 end scrapers, 3 side scrapers, 2 disc scrapers, 7 'thumbnail' scrapers, 17 other scrapers, 1 denticulate, 1 awl, 2 piercers, 52 serrated flakes, 27 retouched flakes, 11 knives, 1 fabricator, 45 miscellaneous retouch)</td>
<td>-</td>
<td>2852</td>
<td>124</td>
</tr>
<tr>
<td>Kidlington - evaluation</td>
<td>10</td>
<td>2</td>
<td>-</td>
<td>-</td>
<td>1 (fragment from blade core)</td>
<td>1 (retouched/serrated flake)</td>
<td>-</td>
<td>14</td>
<td>-</td>
</tr>
<tr>
<td>Kidlington - excavation</td>
<td>334</td>
<td>66</td>
<td>566</td>
<td>-</td>
<td>23 (11 blade, 6 multi-platform flake, 1 tested nodule, 5 fragments)</td>
<td>34 (17 retouched and serrated flakes, 4 microliths, 2 awls, 2 arrowheads, 1 fabricator, 1 burin, 1 axe)</td>
<td>-</td>
<td>1052</td>
<td>-</td>
</tr>
</tbody>
</table>

* includes blades, blade-like flakes and core rejuvenation flakes

** includes core rejuvenation flakes and flakes from polished implements
finds in the vicinity included worked flint, Roman and medieval pottery (Bradley and Hey 1993, 1, 4). The evaluation was also designed to investigate two possible Bronze Age barrows listed by the Victoria County History, Berkshire (Bradley and Hey 1993). However, no trace of the barrows was identified, but the evaluation picked up two scatters of worked flint together with a small quantity of medieval pottery. All of the finds were from disturbed contexts including, a ploughsoil and tree-throw holes (ibid., 6). Test-pit sieving was the method chosen for investigating the site further; a variety of mesh and test pit sizes was used (Bradley and Hey 1993, 6) and this worked well, given the sandy nature of the soils. It was also deemed the only method that would recover small microliths and microdebitage.

Only 45 pieces of flint were recovered from the evaluation, consisting largely of debitage. Two small scatters were initially identified with a thinner scatter to the north of the area investigated (Bradley and Hey 1993, figs 3-4). Good dating evidence was present in the form of a single microlith, an opposed platform blade core, blades and blade-like flakes. The subsequent test pit investigation centred on the two scatters but the main area was also reassessed as it was thought that the initial evaluation may not necessarily have picked up smaller scatters of material (ibid., 8) This investigation produced a total of 6617 pieces of worked flint, the vast majority of which was of Mesolithic date. Although the flint was clearly not in situ, it is likely that it had not moved very far; the large number of chips would also support this contention (Bradley 1993, 9 table 1). This evaluation highlights the accuracy, in this particular instance, of the evaluation technique; the main areas of activity were correctly identified and dated from the small assemblage from the initial trenches. Whether or not the final quantity of flint that was recovered could have been predicted from the evaluation is less certain. The subsequent reassessment of the area also perhaps suggests that more activity was occurring in the northern part of the wood than initially indicated by the evaluation. This pattern of correct identification of the activity areas and general composition of the assemblage can be paralleled in a fieldwalking exercise where the same field was walked over three consecutive years (Gaffney and Tingle 1989, 20, fig. 3.3). The quantity of lithics recovered varied each year but the overall character of the material did not (Gaffney and Tingle 1989, 21).

Yarnton

Studying lithic scatters can enable wider taphonomic processes to be understood. At Yarnton English Heritage has funded a large-scale landscape study in an area of gravel extraction (Hey, this volume). Here Roman ploughing incorporated lithics from the underlying deposits into a ploughsoil. Modern agriculture then incorporated these lithics into the recent ploughsoil, enabling them to be recovered through fieldwalking and test-pit sieving. If the Roman ploughing of the landscape had not taken place very little material would have been recovered because of the alluvium that masked most of the sites. The initial fieldwalking at Yarnton produced fairly low level scatters but the fact that material was present was enough to justify further archaeological work in the form of an evaluation. Four early prehistoric sites were located by fieldwalking the gravel islands within the floodplain (Hey 1991, 5).

The initial evaluation of the Yarnton floodplain, undertaken in 1991, produced just over 50 pieces of worked and burnt flint (Bradley 1991). The assemblage was dominated by relatively undiagnostic debitage, but it did include seven blades and blade-like flakes and a fragment from a single platform flake core. Only seven retouched pieces were recovered, consisting of an end scraper, a retouched flake and four serrated flakes. Technological attributes were used together with the artefact types to postulate a date range of earlier Neolithic and Neolithic/Bronze Age for the material (Bradley 1991, 14). The majority of the flint was recovered from an old ground surface (layer 3/5; 33 pieces) whilst the remainder came from a variety of pits and postholes and ploughsoils. A total of 16 hectares was examined during the evaluation by using 43 machine-dug trenches (mostly 30 m x 1.58 m). A series of test pits were also dug (Hey 1991, 6).

In 1992 four areas were chosen for excavation based upon the results of the earlier evaluation (Sites 1-4). This excavation produced a total of 2824 pieces of worked flint with a further 442 pieces of burnt unworked flint (Bradley 1993, 51). Site 2 produced an extensive finds scatter preserved on the old ground surface (3/5 from the evaluation). The lithic component of this scatter comprised 817 pieces of worked and burnt flint including debitage and a range of retouched forms (Bradley in prep.). The majority of the finds proved to be of earlier Neolithic date although a little Mesolithic, later Neolithic and early Bronze Age material was found. The flint was generally very finely worked with a high proportion of retouched forms; the material was also associated with worked stone, pottery and animal bone making it a rich deposit. The range and quality of the flintwork was unexpected given the results of the evaluation, although the overall date range of the material was correctly identified. The other two areas excavated produced flint assemblages from the fills of pits, postholes and ditches including some very fine pieces from structured deposits and good assemblages associated with Beaker and Grooved Ware and environmental remains. Very little material was lying on the surface, suggesting its deliberate inclusion within features, whether domestic or more structured. The evaluation did therefore
correctly identify the date ranges of the material apart from the small element of Mesolithic flint. This was not identified prior to the area excavations although a few pieces of possible Mesolithic date were recovered from the fieldwalking. Given the difficulty of retrieving sporadic Mesolithic activity, the lack of this material from the evaluation is unsurprising.

Subsequently an evaluation of the remaining ARC pit area at Yarnion was undertaken. This exercise produced approximately 180 pieces of worked flint from around 300 evaluation trenches. Again the majority of this was of Neolithic and Bronze Age date with a little Mesolithic material. Since this evaluation, further excavations at Yarnion have produced flint from a wide range of features, including pits associated with many ceramic styles, notably Peterborough Ware and Grooved Ware, a Beaker grave group (Hey 1994, 8), material from the ditches of a long enclosure and two round barrows, flint from a probable Neolithic house and other domestic features (Hey and Bell 1997, 62). Whilst the evaluations, fieldwalking and test-pit sieving exercises have produced small, relatively undiagnostic groups of flint, the excavation of some of the evaluated areas has produced a large and varied assemblage of lithics, in terms of date range and artefacts present, and often these have been associated with good ceramic assemblages, well-preserved environmental remains and other artefacts such as worked stone. Flint of Mesolithic to Bronze Age date has been recovered and will enable the use and exchange of raw materials to be studied through time. Frequently the 'domestic' element is missing from earlier prehistoric sites, at Yarnion there is an excellent opportunity to study this. The Peterborough Ware-associated flint assemblage, for example, is relatively large in regional terms, and will help to characterise flint from this poorly understood period, and will also help to elucidate depositional practices.

Kidlington

At Kidlington, Oxfordshire, development of a low-lying land prompted an evaluation, as the archaeological potential of this area was uncertain (Booth 1998, 21). Ten machine-dug trenches were excavated over the c 3.4 ha site. This identified a low density of largely undated linear features, a possible pit and gully (Booth 1998, 21). The latter features were associated with a small quantity of worked flint of late Mesolithic or Neolithic character (Booth 1998, 21; Bradley 1994). The potential importance of the findings initiated further archaeological work and an area of approximately 1000 m² was stripped and excavated (Booth 1998, 21).

The excavations revealed a late Iron Age penannular ditched enclosure with associated features (Booth 1998, 27). Possible earlier features were identified and the penannular enclosure was modified at some stage (Booth 1998, 27, 47). The site was subsequently ploughed in the medieval period (Booth 1998, 34). A large flint assemblage of 1052 pieces of mostly Mesolithic and Neolithic date was recovered (Durden 1998, 36). The majority of the flint was recovered from a single feature (Durden 1998, 36), a ditch terminal, and was interpreted as being redeposited (Booth 1998, 45). However, a Mesolithic trancheet axe recovered from the secondary fill of one of the ditches was presumably placed there during the later Iron Age (Booth 1998, 45).

CONCLUSIONS

In this paper I have tried to address some of the issues associated with assessing lithics from evaluations. In the three case studies presented the usefulness of the evaluation as a field technique for identifying earlier prehistoric sites and recovering lithics has been demonstrated. In two of the cases, Tubney and Yarnion, a staged approach was adopted where evaluation trenches, test pits and, at Yarnion, fieldwalking, produced complementary results. It has been shown in these cases that the small, frequently undiagnostic assemblages produced by the evaluations provided enough information, when viewed in conjunction with other evidence, to provide broad date ranges and generally characterise the activity occurring. However, when further archaeological investigation was undertaken, the full picture was frequently much more complicated than the results of the evaluations had demonstrated. In a number of cases, including at least one of the case studies, the lithic component recovered at the evaluation stage was the central, if not the deciding factor, in the decision to mount further archaeological investigations.

In the case studies presented the lithic component can be seen to have helped the evaluation process by providing a reasonably accurate picture of the lithics present. However, this is not always the case, and many sites have been excavated on the basis of a lithic scatter identified during the evaluation, only to produce limited or no further archaeological remains upon excavation (eg Durden et al. 1997, 50). The relationship between lithic scatters and subsoil features has received much attention (Healy 1983; Healy 1988; Zvelebil et al. 1992). Yet it is still difficult during an evaluation to understand the nature of the remains encountered and there still seems to be a degree of uncertainty about how best to investigate lithic scatters, perhaps resulting in too much excavation when the 'site' has been transferred into the ploughsoil. The case studies presented in this paper show that the actual cut features encountered during the evaluations were few in number, frequently spread over the landscape and often contained little dating material (Booth 1998, 21; Hey 1991).
Assessing lithics from evaluations can be a difficult exercise. The assemblages are frequently small and relatively undiagnostic yet they often form the "bread and butter" of the lithic analyst's existence. As such they can be frustrating and unrewarding until you find that an excavation is about to be mounted on the strength of the slim evidence that you and other specialists put forward; then the responsibility becomes a burden. However, by using a structured approach to assessing lithics, which has become easier with the framework that MAP2 (English Heritage 1991) provides, but also employing a degree of professional judgement and experience (cf. Darvill et al. 1995, 7), lithics from evaluations do provide an exciting challenge. Just as field archaeologists are discovering new unpredicted sites through evaluation, the lithic analyst may find new artefacts or approaches to reduction not encountered before or find exciting refitting or use-wear data, that might have the potential to answer specific questions about the site or landscape under study.

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