THE PARKHILL COMPLEX AND EASTERN GREAT LAKES PALEO INDIAN

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ABSTRACT

The Parkhill complex is one of several fluted point complexes in the eastern Great Lakes area. Diagnostic Parkhill complex artifacts include Barnes fluted points and knives. A sequence for the manufacture, use and reuse of the various subtypes of Barnes points and knives is suggested. Finds at the Parkhill site are summarized. The relationship of the type site with other Parkhill complex sites is briefly examined.

A SUGGESTED SEQUENCE OF FLUTED POINT COMPLEXES

Enterline Points

Enterline points (Witthoft 1952) are known from surface sites in Michigan (Roosa 1965), Ontario, and Pennsylvania. Judging from published photos, the West Athens hill site in New York (Funk 1973:9-36, 1977:317-320) appears to be an Enterline site. The fluted point from the Shawnee-Minisink site in Pennsylvania (McNett, McMillan and Marshall 1977:Fig. 5, R) may also be an Enterline point. A C14 date of 10,590 ± 300 BP (W-1994) was obtained from a hearth at this level of the Shawnee-Minisink site.

Enterline points have short, often multiple fluting or basal thinning. They utilize a non-Folsom fluting or thinning technique that apparently occurs on some New Mexico Clovis points. In terms of fluting technique, and length of fluting, Enterline points are the closest thing to Western Clovis points in the eastern Great Lakes area. We consider them to be a Clovis analog rather than true Clovis points partly because of the possible age difference in the two point types.

Enterline points are small (ca 50-60 mm long) to medium size (60-100 mm long) points with short, multiple fluting or basal thinning. They are relatively thick, and often have shallow basal concavities. Many have fishtails. If West Athens Hill is an Enterline site, Enterline points may be accompanied by large fluted points or knives over 100 mm long with very wide flakes on the unfluted portions of the blade (Funk 1977:Fig. **4,** 13).

Gainey Points

Another class of partly fluted points occurs in Michigan and probably Ontario. These have much better fluting than Enterline points and are often larger than Enterline points. They have a variant of Folsom type fluting. The basal ends of the main flute scars are often obscured by one or two large (probably direct percussion) finishing flakes.

Roosa (1965) originally identified some of these points as Bull Brook points after the Bull Brook site in Massachusetts (Byers 1954). Recently the Gainey site in Michigan (Simons 1980) yielded portions of several of these points of Upper Mercer chert from Ohio. Although these points in the Great Lakes area are clearly related to Bull Brook points, they are also related to the Southeastern fluted type originally called Parrish points (Roosa 1965). Unfortunately,

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points of this type are firmly entrenched in the literature as Clovis points. Krieger's identification of points from the Carlson Annis mound as Clovis (Webb 1950) was based on a very small sample of Western Clovis points and ignored the fact that these points do not have Clovis type fluting.

We would suggest that these Great Lake points be identified as Gainey points. Hruska and Peske's Aebischer site in Wisconsin and Prufer's Welling site in Ohio probably represent this Southeastern Gainey complex.

Gainey points are medium to large points with long wide fluting - often 3-50 cm long. The base of the main flute is frequently overlain by one or two large finishing flakes. Basal concavities are often deep with rounded arcs. Very few of these points have fishtails.

The Parkhill Complex

The Parkhill complex includes 4 subtypes of Barnes points, and knives, 3 of which are good Folsom and Cumberland analogs. Subtype 2, 3a and 3b Barnes points have good Folsom type fluting, while subtype 1 points have poorly executed Folsom type fluting.

For a number of reasons we would suggest that the Parkhill complex probably postdates the Enterline and Gainey complexes in the area. The Parkhill complex has strong resemblances to the Folsom complex of the West and the Bull Brook and Debert complexes of the Northeastern United States and Southeastern Canada.

The Holcombe Complex

The Holcombe complex (Fitting, De Visscher and Wahle 1966) also occurs in Ontario and probably in New York as well. Holcome points are an excellent Midland analog. These points have very short, often multiple fluting or basal thinning. Preforms for these points apparently were made from thin flakes. Finished Holcombe points sometimes have large areas of the original flake surface on one face. A Holcombe site has been found below the 605 foot Algonquin beach level by Deller. This suggests that Holcombe is slightly more recent than the Parkhill complex which is associated with the 605 foot beach.

Holcombe points are quite thin (ca 4-6 mm thick), small to medium-sized points with short multiple fluting or basal thinning. Many appear to have been made from bifacial preforms that were made from thin flakes with triangular cross sections. In cross section one face is often much flatter than the other and may have large areas of unaltered flake surface remaining on the blade. Holcombe points do not have fishtails.

A DISCUSSION OF THE PARKHILL COMPLEX

General

The type site of the complex is the Parkhill site west of Parkhill, Middlesex County, Ontario. It is located on the 605 foot beach at a major bend of the shoreline. The 605 foot beach in this area marks Lake Algonquin and Lake Nipissing. The Paleo Indian occupation of the site apparently correlates roughly with the last manifestation of Lake Algonquin.

A date of ca 10,500 BP has been assigned to the Parkhill complex on the basis of overall similarities to the Folsom complex and to the Debert complex. There is also a very close similarity between Folsom and Barnes point fluting techniques, and a very close analog between subtype 3b Barnes points and Folsom points in size, fluting and degree of specialization.

Feature 9, a hearth in Grid B, contained a fluted point base, half of another fluted point base, and a channel flake. A pollen sample from just below the charcoal-stained sand of Feature 9, originally analyzed by an assistant at the Royal Ontario Museum as zone 2 pollen, was re-assessed by Dr. J. H. McAndrews as being zone 1 pollen. The transition from pollen zone 1 to

zone 2 has been dated elsewhere in Ontario at 10,750 BP (GSC 1006, 1028). Efforts to get a C14 date on charcoal-stained sand from Feature 9 were unsuccessful because the sample did not contain sufficient carbon. This suggests that the charcoal stain from the hearth had diffused below the original extent of the hearth. The top of the hearth had been truncated by the plow. The pollen sample was at least 25-30 cm below the Paleo Indian living surface. The plowzone around the hearth was the locus of a major cluster of Paleo Indian artifacts.

Karrow et al (1975:49) have dated the spruce-pine (zone 1-2) transition at 10,600 BP from a number of sites in Michigan and Ontario. They also suggest that Lake Algonquin was in existence about the time of the spruce-pine transition and that it drained ca 10,400 BP. This suggests that the site was occupied sometime after 10,600 BP. If it was contemporary with Lake Algonquin it was occupied prior to 10,400 BP. We cannot be certain whether the Paleo Indian occupation was contemporary with Lake Algonquin or occurred after the lake drained. Defier (1980) has suggested that the most logical time for the occupation of the site was contemporary with the lake. He bases this on the belief that the site was located to intercept migrating caribou and that conditions were more favorable for this when the lake was present than later when the Thedford Marsh formed in the old lake bottom.

Diagnostic Artifacts

These include: (1) Barnes points and knives, (2) other artifacts - especially small points and gravers made on channel flakes, and (3) several attributes usually associated with the Dalton complex including unifacial resharpening which approaches serration on some points and alternate edge beveling on large bifaces.

Barnes points were originally found at the Barnes site in Michigan (Roosa 1965; Wright and Roosa 1966). Most of the Barnes site points are partly finished preforms broken in manufacture. The sample from the Parkhill site is much larger and consists primarily of finished points that have been used, broken, and in some cases re-used.

Barnes points from the Parkhill site fall into three classes or subtypes based on fluting techniques.

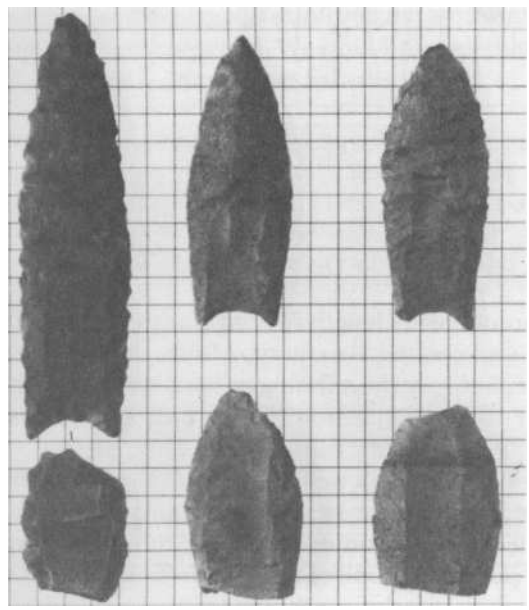

Fig. 1. Top row: Subtype 1 fluted knives. All three have been re-sharpened. They were probably hafted in slots on short handles.
Bottom row: Subtype 2 (left and centre) and subtype 3a (right) fluted point blades. All have been extensively reworked and tapered on the lower lateral edges. They were probably hafted in tapered sockets on short handles. On 5 mm grid.

Subtype 1 points have relatively short, narrow, parallel double flutes on one face with basal thinning or no basal modification on the other face. Roosa originally thought that this was non-Folsom fluting; however, Henry T. Wright has suggested that it may be sloppy or poorly centred narrow Folsom type fluting. This subtype is the least common of the three subtypes with four almost intact examples and one or two possible bases. The largest point of this subtype is 77 mm long (Fig. 1) and has been resharpened along almost the full extent of each edge. Only the extreme basal ends of the lateral edges are unmodified. The smallest known point of this subtype is ca 37 mm long and has been extensively resharpened, probably several times. One of the four has a very slight fishtail. These are the only almost intact points on the site and all four have been resharpened.

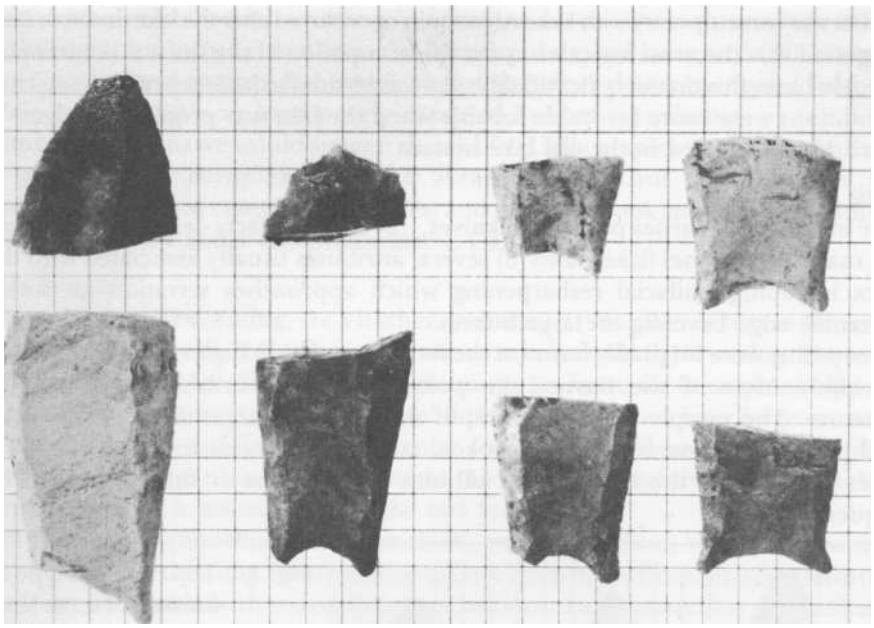

Fig. 2. Left: Reworked bases and tips of two subtype 2 fluted points. They were probably hafted in tapered sockets on short handles.
Right: Four subtype 3 fluted point bases. The two on the extreme right are unmodified subtype 3a bases. The large base with the missing ear may have been reworked from a subtype 3a to a 3b point. On 5 mm grid.

Subtype 2 points have well centred unifacial full length Folsom type fluting. The base of this flute has been overridden by a short well centred Folsom type flute, or in one case, by two percussion flakes. The other face has either very short fluting or basal thinning. No complete examples of this subtype exist at the site. Judging from bases, tips, and blades, they are medium size points ca 75-80 mm long. Some have fishtails (Fig. 2).

Subtype 3 points are bifacially fluted, usually with well centred full length or partial length Folsom type fluting. On larger points of this subtype the basal portions of the flute scar (probably on the second face to be fluted) are sometimes overridden by one wide well centred finishing flake. Other large subtype 3 points have one or two narrow finishing flakes near the lateral edges of the flute scar. This latter basal finishing technique sometimes produces double fluting similar to that of subtype 1 points.

There is some evidence for two fairly distinct sizes of subtype 3 points. Width at the constricted "neck" just above the fishtail shows two modes: one at X = 17.4 mm, n = 15, range 16.55 to 19.4 mm; the other at X = 15 mm, n = 26, range 13.4 to 16.1 mm.

This may indicate that they were hafted on two different sizes of shafts or foreshafts, and/or that they were also hafted on different kinds of tools. This follows the assumption that differences in basal measurements such as width, may be related to differences in hafting such as diameter of haft, and that different hafts may indicate different kinds of tools.

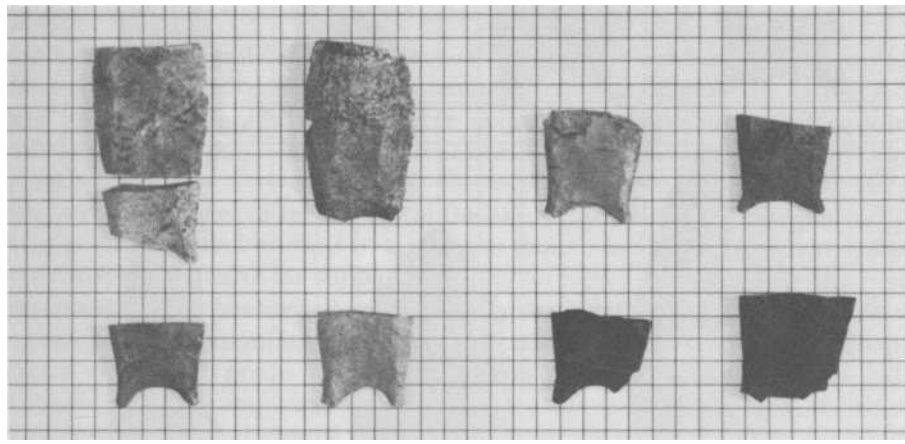

Fig. 3. Miscellaneous subtype 3a fluted point blades and bases. They were probably originally hafted in slots on heavy stabbing spears. On 5 mm grid..

Judging from the bases, blades and other modified remains of 3a Barnes points, they appear to be medium size points, averaging ca 75-80 mm long with a high percent of fishtails (Fig. 3). Subtype 3b Barnes points are represented at the Parkhill site only by bases. A whole subtype 3b Barnes point from Michigan (Dekin 1966:35) is 39 mm long with a maximum width of 15 mm. It may have been resharpened. We would suggest that subtype 3b points probably average ca 50-60 mm in length. Many have fishtails (Fig. 4).

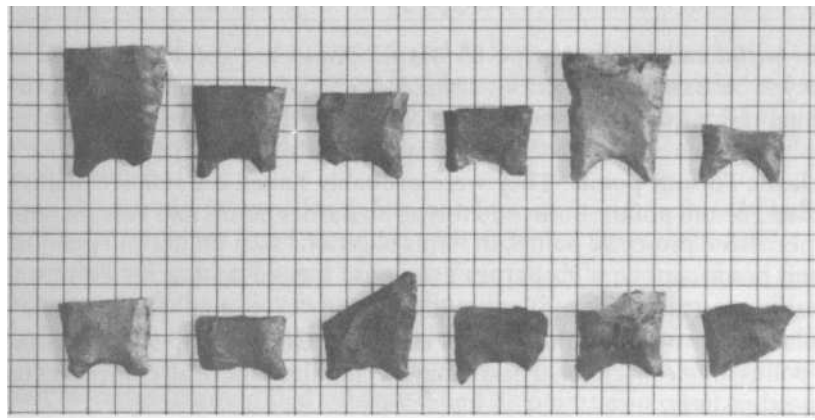

Fig. 4. Subtype 3b bases. The specimen at the extreme left of the top row may have been re-worked from a subtype 3a point. These points were probably hafted in slots on light stabbing spears or lances**.** On 5 mm grid.

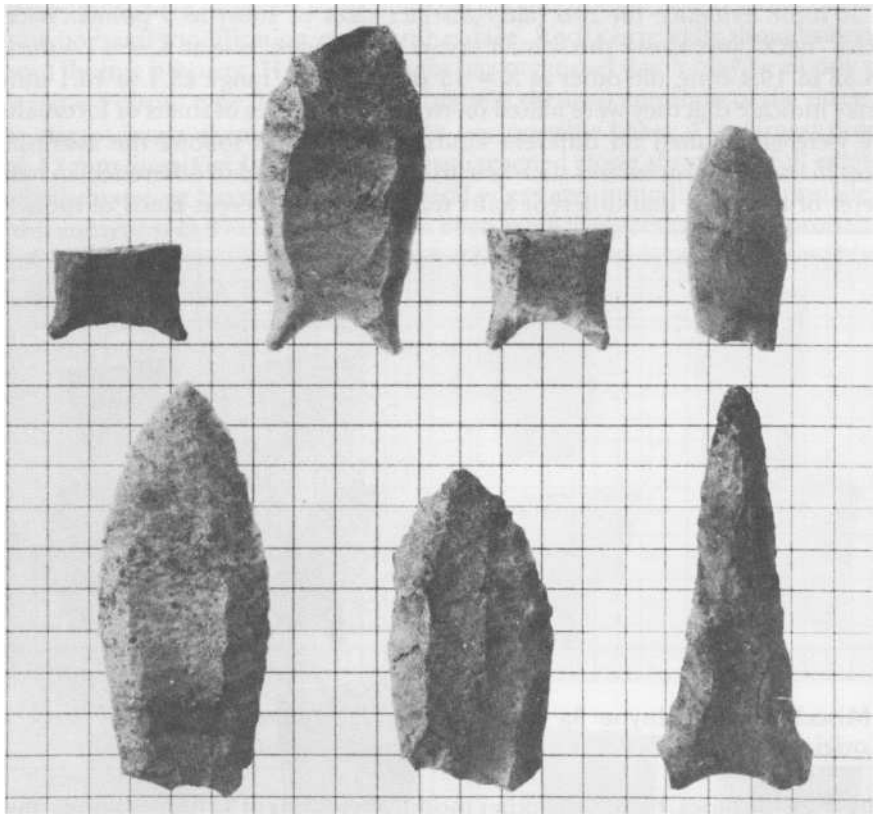

Fig. 5. Top row: On the left, three subtype 3b fluted points. The larger specimen in the centre may have been re-worked from a 3a point. The artifact on the far right is a tiny point made on a channel flake.
Bottom row: On the left, two basally modified and tapered subtype 3a fluted points; they were probably hafted in tapered sockets on short handles. The artifact on the far right is a drill made from a subtype 3a fluted point. On 5 mm grid.

Both subtype 3a and small subtype 3b Barnes points are good analogs for Cumberland points. Subtype 3a Barnes points fit in at the low end of the Cumberland point size range. Basal finishing techniques differ from those on Cumberland points. The subtype 3b Barnes points look like scale models at Cumberland points. They are very close to the size range for classic Folsom points. They were probably hafted on smaller diameter shafts or foreshafts than Folsom points. Both the subtype 3b Barnes points and Folsom points probably represent specialized projectile points. In terms of general size, fluting and possible similar use as specialized points, subtype 3b Barnes points are a good analog for Folsom points.

Other diagnostic Parkhill complex artifacts include very small points made on channel flakes. Similar points occur in the Folsom complex. Generally speaking, artifacts (gravers, knives and points) made on channel flakes may be characteristic of all complexes using Folsom type fluting extensively.

Five channel flake points were found at the Parkhill site. Four were at Grid B, one (Fig. 5) was at Grid D. The only almost whole example is 28 mm long, 12 mm maximum width, 10 mm basal width, and ca 2 mm thick. It isn't fluted.

An Analysis of the Use and Re-use of Parkhill Site Barnes Points

This is an attempt to explain some of the differences between and within the subtypes of Parkhill site Barnes points in terms of differences in hafting, use and re-use. A number of assumptions are relevant to the problem.

1. If the patterns of use and/or re-use of the various subtypes were different there should be differences in the survival patterns and/or distribution patterns of the subtypes.
2. If there were significant differences in shaft diameter between subtypes, such variability should be reflected in significant differences in basal dimensions, especially width, of the points.
3. If there were other significant differences in hafting between subtypes these should be reflected in basal attributes, especially length, width and shape of the hafting elements.
4. If there were other significant differences in hafting between unmodified points and modified (re-used) points within a subtype these should be reflected in the attributes cited in assumption 3.
5. If there were differences in technological functions (uses) between subtypes (or between unmodified vs. modified artifacts in a subtype) these may be evident in the hafting.

Different survival patterns for subtype 1 points (presence in camp of re-sharpened but otherwise intact points) vs. subtype 2 and 3a points (presence in camp of broken bases without matching blades and of extensively reworked major portions of points) suggests a different use for subtype 1 vs. *2* and 3a points (assumption 1). The presence of resharpened but otherwise intact subtype 1 points in camp suggests use and or re-use in camp. The pattern of resharpening subtype 1 points without substantial basal modification suggests that the re-use of subtype 1 points was identical to their original use.

Some subtype *2* and 3a points underwent extensive modifications prior to re-use. Both occur as resharpened fluted point blades without their original bases and with strongly tapered ground lower lateral edges, and as resharpened points with modified bases and strongly tapered ground lateral basal edges.

As noted above, the fact that subtype *2* and 3a points have different survival patterns from subtype 1 points suggests a different use for subtype *2,* and 3a points (assumption 1). The presence in camp of unmodified *2* and 3a bases without matching blades suggests that these artifacts were originally used and broken away from the site. The presence of modified *2* and 3a blades on the site without matching bases suggests that these modified blades were re-used on the site.

Tapering of lower lateral edges of subtype *2* and 3a fluted point blades and of lateral basal edges of subtype *2* and 3a points with modified bases suggests that a new kind of haft was associated with the re-use of these artifacts. Long bases on modified (re-used) subtype *2* points vs. short basal length for unmodified subtype *2* and 3a bases suggests different hafting for use vs. re-use (assumption 4.)

The length of the ground tapered lower lateral edges on *2* and 3a fluted blades and the ground tapered basal edges on *2* and 3a points with modified bases is similar. This suggests that the various modified (re-used) *2* and 3a points were in similar hafts and had similar uses - which differed from the hafts and uses of the unmodified *2* and 3a points (assumptions **4,** 5).

Subtype 3b points occur only as bases at Parkhill. No whole 3b points or 3b fluted point blades occur on the site (i.e. in camp). This suggests that they were used and broken elsewhere and not re-used in camp. Unmodified subtype *2* and 3a points also occur as bases in camp without matching blades. This suggests that they were also used elsewhere and broken elsewhere. Thus the original uses of *2,* 3a and 3b Barnes points were probably similar.

We would suggest that subtype *2* and 3a Barnes points were originally used as projectile points - probably hafted in slots in fairly large diameter shafts - averaging ca 17.4 mm in

diameter. We would also suggest that 3b Barnes points were used as projectile points, hafted in slots on shafts (or foreshafts) with an average diameter of 15 mm (assumption 2). The weapons may have been heavy stabbing spears for 2a and 3a points and light stabbing spears or javelins for 3b points.

Judging from the relatively light edge wear on the subtype 1 points, we would suggest that they were specialized knives hafted in slotted handles. Much heavier edge wear including splitting and battering indicates that the subtype 2 and 3a fluted point blades were re-used as heavy duty knives and scrapers. Subtype 2 and 3a points with modified bases were probably re-used as knives and heavy duty knives. The tapered lower lateral edges of the 2 and 3a fluted point blades and 2 and 3a points with modified bases strongly suggests that they were hafted in tapered sockets that completely enclosed the tapered elements of the artifacts (assumption 3). This would have made for a much more rigid haft than a slotted haft. A socketed haft would facilitate heavy duty use.

We would summarize the suggested use and re-use as follows: Subtype 1 Barnes points were probably specialized knives hafted in slots in short handles. Subtype 2 and 3a Barnes points were probably originally used as projectile points, hafted in slots, possibly on heavy stabbing spears. Modified (re-used) 2 and 3a points, including fluted point blades, were probably hafted in tapered sockets in short handles and used as knives, heavy duty knives and scrapers. Subtype 3b Barnes point were probably hafted in slots in shafts or foreshafts of light stabbing spears or javelins.

Incidentally if the small (15 mm) 3b points are scale models of the bigger **(17.4** mm) 3a points, the larger forms would weigh approximately 1.55 times the small ones. If the larger points averaged 75 mm long and the small ones averaged 50 mm, the ratio of weight would be ca 3.375 to 1. If the larger averaged 75 mm long vs. 60 mm for the others, the ratio of weight is 1.95 to 1.

Comments on the Lithic Reduction Sequence

The majority of the artifacts from the Parkhill site are made of chert from the Collingwood area that originates in the Fossil Hill formation. Bill Fox and others have known for some time that this Parkhill site chert is from the Collingwood area and, in fact, it is popularly referred to as Collingwood chert. Several years ago Dr. Bruce Liberty identified Collingwood chert found by Peter Sheppard in a field in the Collingwood area as being from the Fossil Hill Formation (Peter Sheppard 1978: personal communication).

Recently Dr. Peter Storck and Dr. Peter von Bitter located an outcrop of this chert on the escarpment near Collingwood. They also positively identified Collingwood chert from the Fisher site as being Fossil Hill chert (Storck and von Bitter 1981:28-36). The Fisher site is a Parkhill complex site near Collingwood.

The Collingwood or Fossil Hill chert is often marked by parallel bands which appear to be thin layers of chalcedony. Presumably these thin layers were horizontal paralleling the upper and lower surfaces of the tabular chert. This has been verified by Chris Ellis in conversations with Storck...

Collingwood chert Barnes points from the Parkhill site with visible bands, have the bands at right angles to the long axis of the points.

Parkhill site scrapers occur on several major kinds of flakes. One consists of angular flakes removed early in shaping the tabular quarry block into cores. Another is flakes removed from a large bifacial with ground edges. Chris Ellis, Juliet Garfit and others have noted that scrapers, especially those made on flakes from bifacial cores, do not show any one particular orientation of the bands.

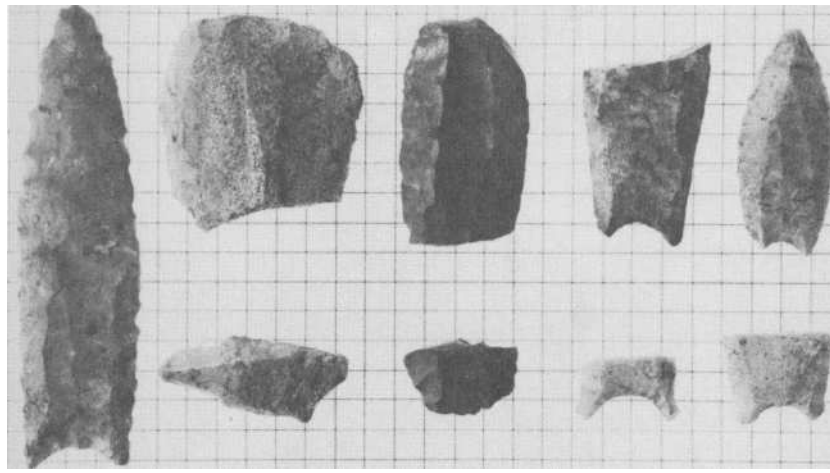

Fig. 6. Artifacts from three mini clusters, Feature 5, Grid B.
Left: large subtype 1 fluted knife.
Top row: Large end scraper (left), subtype 2 fluted point blade used as an end scraper, modified and tapered subtype 2 fluted point base, small subtype 1 fluted knife - much re-sharpened (right).
Bottom row: Groover or beak (left), fluted preform base, two subtype 3b fluted point bases (right). On 5 mm grid.

For years Roosa had assumed that the fluted point preforms were made from selected large blades removed from the bifacial cores, and that shorter flakes from the bifaces were used for scrapers. Whereas selected blades from large bifaces could be made large enough for fluted point preforms, they would have a curved longitudinal cross section which is undesirable on a point, but perfectly acceptable on a side or end scraper.

Chris Ellis has suggested that the type of flake necessary for a fluted point preform was probably derived from an early stage of shaping a bifacial core from the tabular quarry block or from a special kind of core intended for production of large straight flakes or blades (Chris Ellis 1981: personal communication). In either case the large flakes intended for fluted point preforms were driven off at right angles to the plane of the bands.

There are no cores or large unmodified flakes of Collingwood chert on the Parkhill site. Apparently most of the lithic material was brought to the Parkhill site in the form of blanks, preforms, or finished artifacts. The debitage from the site does not include anything indicative of the early stages of the lithic reduction sequence (Ellis 1979).

More data on early stages of the Parkhill complex lithic reduction sequence should be available from Storck's analysis of the Fisher site material.

Other Parkhill Complex Artifacts

The most common scrapers at the Parkhill site are end scrapers made on relatively wide flat multifaceted flakes from large bifacial cores. The striking platforms are usually multifaceted and/or ground. They have curved longitudinal profiles. Apparently some of them were hafted. Fig. 6 shows a large example of this type of scraper from Grid B. The proximal end of this

particular scraper was snapped off. It is doubtful if this could have happened if the scraper had not been hafted. The snapped proximal end of a similar end scraper, also from Grid B, has a ground striking platform. Similar scrapers have polish on dorsal ridges.

A few large side scrapers, some with concave or spokeshave segments, were made on large flakes or blades from large bifacial cores with ground edges.

Also present are end scrapers and side scrapers made on angular flakes with plain unfaceted striking platforms.

Two unusual artifacts from the site are shown in Fig. 6. One is an end scraper made from a subtype 2 fluted point blade. This is brown (heat treated?) Onondaga chert. The other is a small beak or groover. This is a very narrow pointed side scraper. The end of the pointed tip is missing. Similar artifacts from Bull Brook have been called groovers (Byers 1954; Jordan 1960). A similar artifact with a fluted base was recovered from the Martin site in the Estancia Basin, New Mexico, by the senior author (Roosa 1968: 404, Fig. 23). The Martin site is a Folsom campsite. We suggest that the Parkhill site beak groover was a specialized hafting tool.

The artifacts in Fig. 6 are from three mini clusters found around feature 5, Grid B. Each mini cluster included three or four channel flakes, plus a quantity of small flakes of bifacial retouch and small pressure flakes.

One mini cluster contained a big subtype 1 knife, a big end scraper, and a reworked subtype 2 base. A second mini cluster contained a subtype 2 blade with scraper up, a small subtype 1 knife, and a subtype 3b base. The third mini cluster contained the beak or groover, a preform base and a subtype 3b base.

Whether these represent three specialized tool kits, one specialized tool kit, or discards that were replaced on the spot is uncertain. Some items like the modified subtype 2 base are apparently discards; the extreme tip of this specimen was found ca 50 feet away. The subtype 3b point bases are discards, as is the fluted preform base. However, the two subtype 1 knives, the big end scraper, the end scraper on the subtype 2 blade, and the beak or groover could have been useful artifacts as they are. The big end scraper may have been re-hafted after having originally been broken. There is some polish on the dorsal ridge that suggests that it was re-hafted.

A number of gravers, mainly multiple spur coronet gravers occur on the site. They are made on thin flakes including channel flakes. They occurred primarily on Grids C and D which are thought to be base camps for a microband and a macroband respectively. None were present on Grid B which is a point making area. Whatever the function of gravers may have been, it appears that they were not related to the making or hafting of fluted points.

The major excavated Grids are B, C, and D. Grid B had bits and pieces representing 74 fluted points, 136 channel flakes, a fluted preform base with tips of three more, six good scrapers including two on subtype 2 fluted points), three worked flakes. 31 scraper retouch flakes, fragments of four channel flake points, and three biface preforms. For a detailed description of the seven mini and two major artifact clusters at Grid B see Roosa 1977a and 1977b.

Grid C had bits and pieces of 16 fluted points, a fluted preform, tips of two other preforms, 43 channel flakes, 13 scrapers, five gravers, 155 scraper retouch flakes.

Grid D is a larger area than C and apparently represents a larger base camp, i.e. a macroband base camp. Grid D has bits and pieces of nine fluted points, 15 channel flakes, one almost whole channel flake point, two gravers, 38 scrapers, 147 scraper retouch flakes, five bifacial preforms, a fluted drill, and the base of a small unfluted point.

We would suggest using 4 classes of artifacts to get a quick profile of an area of a fluted point site. A high percentage of fluted points and channel flakes is probably indicative of a point

making area, while a high percentage of scrapers and scraper resharpening flakes probably indicates a base camp or special processing area.

Roosa has previously suggested (1977a, 1977b) that ca 15 individual style groups, based on minor similarities and differences of fluted point bases, were present on the site. This suggests that ca 15 fluted point makers were present primarily on Grids B and D. If we assume a family of three to five for each fluted point maker, we have a total of 45 to 75, X = 60 for Grids B and D. Grids B and D artifacts are primarily of Collingwood chert. Two channel flakes from B fit two fluted point blades from D, providing a link between Grids B and D. Our 1975 excavations at Grid C raised the total style groups by three or four. Grid C has a higher percentage of exotic Michigan and Ohio cherts. Grid C has three or four style groups which are apparently not present at B or D.

We would suggest that B and D represent various occupations of a macroband of ca 60 persons that obtained most of its chert from the Collingwood area. Grid C probably represents a microband of ca 12-20 with connections to the Michigan-Ohio area. Judging from an inspection of a small sample of Fisher site artifacts, it appears that at least two of the Parkhill site style groups occur at Fisher. This strongly suggests that the same macroband traveled seasonally between the two sites, a distance of roughly 120 miles. Most Ontario fluted points occur on old beach ridges which were (and are) ecological edges-rich in plant and animal resources. The areas along the beach ridges were probably fairly open parkland with woodlands in the uplands and lakes, marshes, or grassland in the lake beds. This suggests that much of their activity was confined to beach ridges but with some use of river valleys. If we assume a territory roughly 10 miles wide along 120 miles of beaches from Parkhill to Fisher we have 1200 square miles for 60 people or a population density of 20 square miles per person.

Isolated finds of Barnes points on the north shores of Lake Erie and Lake Ontario suggest that a similar band operated along these shores. Finds in Michigan suggest one or two bands ranging along the lower portion of the Lake Huron basin up into the Saginaw Bay region, then across via the river valley systems that virtually bisect the lower peninsula to the lower shores of the Lake Michigan basin. The Dekin point from Grand Traverse County (Dekin 1966: 35-36) is well north of the major concentration of Michigan fluted points.

The above suggests a population of ca 120 individuals for Southern Ontario with a similar number for Southern Michigan during Parkhill times. It also suggests that *they* were not making much use of the wooded central upland areas of Michigan or Ontario.

ACKNOWLEDGEMENTS

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