

IRON TRADE AXES FROM THE PLATER-MARTIN SITE

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Abstract

Thirteen iron axes from the historic Petun Plater-Martin BdHb-1 Site are reported and discussed.

Reportage sur les treize haches de fer trouvées sur le site archéologique Plater-Martin BdHb-1 des Petuns.

Introduction

The thirteen iron trade axes which are the subject of this paper are of interest because they are from the Plater-Martin BdHb-1 archaeological site, the remains of *Ekarenniondi*, ca. 1637-1650 a.d., the last principal Petun village in Ontario, and the one in which French influence and interaction with the Petuns, and the Petun resistance to the French, climaxed, and ended with the Dispersal in the spring of 1650 a.d.

While the subject axes were among those in use by the Plater-Martin Petun, Odawa, and Huron refugee people immediately before the 1650 Dispersal, the extent that they represent the active village of *Ekarenniondi* is unknown. If, when abandoning a village, the former residents took their axes with them (Peterson 1965:10), these were likely the best and preferred axes of those available. The axes now reported may well represent only the rejected, oldest, most damaged and least popular ones on the site. Although this argument applies to all artifacts on all abandoned archaeological sites and is therefore to some extent a constant, the circumstances of abandonment of Plater-Martin in the spring of 1650 must be considered. This was not a routine removal to a new site a short distance away, allowing convenient repeated returns, but part of the abandonment of the entire historic Petun homeland for the distant west, never to return. Probably, only the limitations imposed by their physical inability to transport more would have prevented the people taking everything they could on their migration.

It is tantalizing to consider two possibilities. The first is that some artifacts on the site, possibly including axes, may have been brought from New York by the Wenrohronons (moss-backed turtle people) in their flight, first to the Turtle Hurons of Ossossane in 1638, and then from Ossossane to the Petun Deer and Wolf eleven years later, to remain with them and emerge in later history as the Big Turtle Clan of the Wyandot (Chaumonot 1885:94; JR17:1-2,25-29; JR39:251; Steckley 1985:17-18). The second is that some of the iron trade axes found on the successor Rock Island II site in Wisconsin, occupied by the refugee Petun-Wyandot and Odawa ca. 1652, found in association with Petun-like ceramics, red glass trade-beads and bear-jaw tools (Mason 1986), and even later Petun-Wyandot axes further west, of which Harold L. Peterson speaks (1965:10-11), might well have been carried from *Ekarenniondi*.

The Plater-Martin BdHb-1 Site

The Plater-Martin BdHb-1 Site is identified by the writer as the last location of the principal Petun village of *Ekarenniondi* ("It is where a stone is standing out" Steckley 1996:9). The immediately prior location of this village is the Haney-Cook BcHb-27 site on the Scenic Caves property west of Collingwood, Ontario, where may yet be seen the actual rock for which the village is named.

The village appears on the 1639 Jesuit list of Apostles' names assigned to Petun villages (JR20:42-43) as St. Matthieu (Matthew)(Garrad 1997:6). In 1646 it became the headquarters of the resumed Mission of the Apostles, and the residence of the Jesuit Fathers Charles Garnier and Léonard Garreau. In 1647 the Mission of the Apostles was subdivided into two, reflecting the current relationship with the Odawa, and the political organisation of the Petun confederacy. Father Garnier removed to the village of *Etharita* (St. John), the local capital of the Petun Wolf "nation" (phratry ?), to serve the Mission district of St. John the Evangelist to the Petun Wolves. Father Garreau remained at *Ekarenniondi* (St. Matthew), which was both the principal village of the Petun

Confederacy and also the principal village of the Petun Deer "nation" (phratry ?), to serve the Mission district of St. Matthias to the Petun Deer (Garrad 1997:6), and also, presumably, the Odawa, should they return.

Although the name St. Matthew did not appear until 1639, it was probably assigned by Father Garnier at the time of his exploratory visit to the Petun villages in 1637 (Garrad 1997:1). Thus, the Plater-Martin BdHb-1 site was occupied for at least fourteen years until its abandonment in 1650, and was in turn contemporary with three Jesuit regional headquarters, La Conception (*Ossossane*) (to 1639), Ste. Marie I (1639-1649) and Ste. Marie II (1649-1650). French missionaries, soldiers and traders, and presumably native Hurons, Odawas and Petuns, travelled back and forth between the Plater-Martin BdHb-1 site and the Jesuit centres. Although the Mission of the Apostles was but one of a number of mission districts conducted from Ste. Marie, and located at the far western limit of New France as it was then, as the local headquarters, residence, and principal village, *Ekarenniondi* was considerably involved in contemporary French trade and missionary activity. The Plater-Martin BdHb-1 site has produced a wide range of European materials, iron arrow points, axes, fish-hooks, knives and spikes, glass beads dominated by red tubular beads, numerous brass and copper scrap, kettle parts and remanufactured articles, a European gunflint and clothing item, all consistent with the above historic and temporal identification. The remainder of this paper will be devoted to an examination of the iron axes.

The Axes Identified to the Plater-Martin BdHb-1 site

Of the thirteen iron trade axes to be examined, only three are in the possession of the writer. Two were found by him on the Plater-Martin BdHb-1 site and the third was given in 1963 by the late Mrs. Mary Susan Thomas, whose husband, the late Edward Harold Thomas, found it on the site, and published a drawing of it in 1956 (Thomas 1956). The remaining ten were kindly loaned for the purposes of this study by the Archaeological Survey of Canada (ASC) from the collection of the Rev. J. M. Goodwillie, purchased by the National Museum in 1908. They are not identified as to site, but variously recorded as "Craigleith", "at Craigleith", and "near Craigleith".

Because there are two major sites at Craigleith, an explanation of the writer's confident assignment of the Goodwillie collection to the Plater-Martin BdHb-1 site is necessary.

The Plater-Martin BdHb-1 Site was well known at an early time. Andrew F. Hunter recorded it in 1904 (n.d.), and it was known to the Collingwood Huron Institute in 1906, perhaps because of the activities of Rev. J. M. Goodwillie. John Lawrence of the Huron Institute, and the principal local authority at the time, believed the site to be the most northerly of all Petun sites (Lawrence, Gaviller and Morris 1909:17-8; Lawrence 1909:63,69,70; Lawrence 1916:43,47,48), and described its location as "south of the village of Craigleith", "at Craigleith", and simply "Craigleith", the terms almost identically used by Rev. Goodwillie.

The presence of a second site at Craigleith was evidently unknown to the local resident researchers, and therefore more certainly so to the visitor Goodwillie. This is the Plater-Fleming BdHb-2 site some quarter of a mile northerly from Plater-Martin BdHb-1, and identical to it as to period and virtually so as to artifacts. In Goodwillie's day the site was concealed in an orchard planted by the family of Sir Sandford Fleming in the 1850s, and the Fleming farmhouse was unoccupied. Not until 1961 when old uprooted apple trees were being removed by Donald Plater was the Plater-Fleming BdHb-2 site discovered. The writer therefore accepts as certain that the Goodwillie material, although not identified by site or site owner, came entirely from the Plater-Martin BdHb-1 site, and rejects any possibility of any material from Plater-Fleming BdHb-2 being in the Goodwillie collection.

The Work of Thomas "Tim" Kenyon

In the following text the description terminology, measuring system and dating criteria devised by the late Thomas "Tim" Kenyon are used, with his permission, reproduced herein as figures 2, 3, and 4, taken from Kenyon & Kenyon (1983). Tim personally saw, drew, measured, and assigned Identification Numbers to all thirteen subject axes, including the axes provided for this study by the Archaeological Survey of Canada, (numbered VIII-F-etc.). He incorporated this information into his own records (Kenyon n.d.). The accompanying illustrations of the forge marks, and the axe outlines, (figs. 6, 7) are entirely by Tim Kenyon, and represent his last contribution to Petun

research prior to his death in 1996.

The Thirteen Axes: Characteristics and Dating

All thirteen iron axes from the Plater-Martin BdHb-1 site are immediately recognizable as "typical" French-imported iron trade axes, yet no two are identical, and each is found to have at least one unique characteristic when compared with other axes found in the Petun Archaeological Zone (fig. 1). The forge marks on seven of the thirteen axes are unique to the site and to the Petun area.

All thirteen are made by the same hand-wrought, folded-over iron strap method, but vary widely in dimensions, weights and inter-dimensional ratios. Five (Kenyon numbers 88, 195, 199, 200, 201) have their polls bashed in. Two (1a, 24a) have no polls remaining at all. Six (1a, 88, 197, 198, 200, 201) have blade edges missing or damaged.

Attempts were made to reconstruct and estimate the original measurements and weights of damaged and incomplete axes. In a previous study, which inspired this one, reconstruction was made "by eye" (Kenyon and Kenyon 1987:14). In the present study, estimation relied on comparison with other axes from the Petun Archaeological Zone. The reference sample available to the writer for comparison currently comprises 102 axes, of which 76 are reliably provenanced to twenty-seven sites in the Petun Archaeological Zone. Fifty-six of these, including all thirteen from the Plater-Martin BdHb-1 site, were examined, measured and drawn by Tim Kenyon.

The axes were dated by relating them to Glass Trade Bead Periods (GBP) using systems independently devised by Ian and Thomas Kenyon (Kenyon and Kenyon 1983, 1987), and William R. Fitzgerald (1988). These are termed GBP1, 2, 3a and 3b by Kenyon and Kenyon (1983:59-74), and GBP1, 2, 2-3, 3 by Fitzgerald (1988:11-19).

Kenyon and Kenyon concluded that iron trade axes can be related to GBP by size (determined by a variety of measurements) and the number of forge marks (see 'The Marks' later, and Fig. 6), rather than weight (1987:13 Table 1, 14). Fitzgerald concludes that the weight of the axe, the size determined by specific measurements which relate to the weight, and lastly the association with specific forge marks, produces clustering relevant to GBP (1988:14-18). For example he convincingly demonstrates that the smallest axes become a discrete cluster in GBP3 when the length ('B' on figs. 3, 4) is 165 mm or less, the bit width ('Q') is 84 mm or less, and the weight is 800 grams or less (1988:14 Figure 11, 16 Figure 12) regardless of the IJL width. The Kenyons term this cluster "Group E".

Using measurements, and a computer program not available to the writer, the Kenyons also established that axes "group" into certain measurement range clusters within and corresponding to GBP. Using weight and fewer measurements, Fitzgerald also establishes ranges for GBP. The two systems are compatible and have been brought together for presentation in Fig. 4. Plater-Martin axes are assigned to GBP by comparing the data in Fig 5 with the criteria ranges in Fig. 4. It is convenient to refer to these ranges as 'criteria' but they are not strictly so, representing only those axes present in the sample from which the measurements were derived. As will be seen, the smallest axes at Plater-Martin, clearly Group E and GBP3 by Kenyons' description and Fitzgerald's criteria, nevertheless do not correspond well with the Kenyons' 'criteria', because they are smaller than the axes used by the Kenyons in their study.

Because the village of *Ekarenniondi* was occupied ca. 1637-1650, the Plater-Martin BdHb-1 archaeological site falls within GBP3b. GBP3 is marked by a greater range of weight classes and variety of axes than the previous periods (Fitzgerald 1988:18), and includes axes of earlier periods (see Kenyon and Kenyon 1987:13, 18)

By combining the Kenyons' and Fitzgerald methods, the thirteen axes are seen to include two Group B axes from GBP2, five axes in Groups B and C from GBP3a, and six axes in Groups B, D and E from GBP3b. It is concluded that the entire assemblage is representative of the Plater-Martin BdHb-1 site even though GBP2 axes are present. A test of this conclusion is that, when compared with other sites with axes dated by a similar procedure, Plater-Martin falls into its correct place in the Petun sequence (Garrad 1994).

As noted, the assemblage includes axes of previous periods GBP2 and GBP3a. If an average axe longevity is assumed to be equal to or greater than the life of a village, the presence of earlier axes from the village's previous location is to be expected. Applied to the circumstances of the abandonment of *Ekarenniondi*, which possibly included intentional selection of axes to be left behind, it is to be noted that eight of the thirteen abandoned axes are damaged, and that these include the oldest, all certain GBP2 and GBP3a axes. The five axes in good condition are all certainly or possibly the latest GBP3b axes. It might be assumed that the eight damaged axes were intentionally abandoned at the time of the Dispersal as not worth taking on the potentially long and uncertain migration, but the presence of the five good and new axes is not so readily explained.

Comments on Individual Axes

The thirteen axes are discussed in sequence of Kenyon numbers. The forge marks on the axes are illustrated in Fig. 6 (p. 16) and 7. Outlines of the axes at reduced scale are given in Fig. 7 (pp. 17-19). Details of other axes referred to for comparison are taken mostly from Kenyon n.d., and partly from additional information gathered more recently by the writer, notably a study of the axes in the collection of the Collingwood Museum.

Axe 1a See p. 17. Garrad Collection

This is the remaining part of an axe which was cut up. It is remarkable for showing two different cutting methods employed. The poll and leading edge have been removed, the latter visibly by the 'cut-and-snap' method. The groove of the cut is uneven in depth and was presumably made by sawing with chert, of which other examples are known (e.g. Boyle 1892 AARO 5:51), rather than with a steel file as suggested by Bradley (1980:111). No steel files are known from the Plater-Martin BdHb-1 site.

The blade is being cut across by a different method which leaves an even and consistent 8 mm. dia. wide cut with semi-circular rounded bottom. In searching for a technique which could have created this effect the local prolific availability of thin slabs of sandstone, probably able to cut by abrasion, as suggested by Bradley (1980:110), was noted and considered, but dismissed as unlikely to produce such an even and consistent rounded groove.

Kenyon (pers. com.) suggests the cutting agent was a cord, citing the *Pijao* tribe of Columbia who "were expert at cutting metals by abrasion, and were even able to cut the iron and steel of Spanish weapons. The process consisted of rubbing twisted cotton threads with sand and water across the object they wanted to cut. The results amazed the chroniclers" (Steward 1963:957).

The use of sharp sand rotated with thin (wet ?) wooden sticks is recognized on the Plater-Martin BdHb-1 site from the long bore holes made in limestone pipestems. Friction by sharp sand bound by wetting to a taut cord such as a bowstring could well have created the grooves seen in this specimen. However, this is the only specimen showing this technique so far recognized in the Petun area. In assuming this was the technique used, it is not proposed that the sharing of the same cutting technology by the people of *Ekarenniondi* and a remote South American highland tribe is anything more than a coincidence.

Pieces of cut-up axes occur on a number of sites. A specimen from Plater-Martin, not further discussed here, has been shaped into a celt-like wedge form (ASC VIII-F-24075).

This fragment is also notable for the clarity of the forge marks, a cluster each side of three 2-bar crosses with fairly broad bars within circles 9 mm. diameter. This combination is the most frequently recurring in the Petun Archaeological Zone and is found on 20% of the recorded axes. At Plater-Martin BdHb-1 however it is one of two specimens in thirteen, an occurrence of only 15%.

The visible measurements and dimensional characteristics of the specimen do not match any other axe from Plater-Martin. The axe corresponding most closely in weight and measurements, and used as a guide in reconstructing those originally of the subject, is #179 from the earlier GBP2 Melville BbHa-7 site. This is appropriate as Axe 1a appears to be a GBP2 Group B axe.

Axe 24a See p. 17. ASC Collection VIII-F-14772(3312)(397)

The poll strap of this axe is missing, but the blade is intact and undamaged. If the estimated original weight of 1,588 grams is correct, this axe was the heaviest at Plater-Martin and has no near equal in the Petun reference sample. Its closest counterpart is a fragmentary axe in Mr. Bill McConnell's collection, assigned to GBP3.

The forge marks on the subject axe uniquely comprise three good, large (12 mm diameter) 2-bar crosses with fairly broad bars in circles, each side, not matched by any other axe at Plater-Martin or in the Petun Archaeological Zone.

The missing poll was reconstructed from Axe #58, probably from the contemporary Kelly-Campbell BcHb-10 GBP3 site. Axe 24a appears to be a GBP3a Group C axe.

Axe 87 See p.17. Garrad Collection from Edward H. Thomas via Mary S. Thomas (1963)

This is another unique axe in the Petun area, having no counterpart in outlines, weight related to dimensions, or in its forge marks.

At 1,389 grams this axe is the second heaviest from Plater-Martin. Its exceptional weight for its size results from an abnormal thickness (measurements 'M' and 'N'), yet the cutting edge is short ('Q') because of the abnormal shape of the under edge of the blade. While the dimensions suggest a strip of iron has been removed from the underside, there is no certain evidence visible on the axe of this having been done, although some modification is suggested by the rounded shape of the under edge of the blade. In measurements it best fits a GBP1 Group A axe. However, Group A axes are not found on later sites (Kenyon and Kenyon 1987:17). The next best fit is GBP3b Group B.

The marks consist of a unique cluster of five small shallow regular 8-pointed stars, apparently on one side only. Their correspondence to any particular GBP is not known. Two other axes from the Petun area which are marked with stars on one side only are both of uncertain GBP. #7a from the GBP1 McAllister BcHb-25 site is too small a fragment for the original weight and outlines to be estimated, but clearly has a unique cluster of four 6-pointed stars. #99 from the GBP2 Melville BbHa-7 Site is a smaller axe at 1,049 grams and has a single erratic 8-pointed star mark, also unique in the Petun area. #99 does not fit well enough into the dating criteria to be of assistance in dating #87; indeed it appears to be too late an axe for the site on which it was reportedly found.

This axe is possibly the first from the Petun Archaeological Zone to have been described and illustrated in print: ". the iron tomahawk, seven-and-one-half by over three inches at the blade. The iron is soft and does not take a good edge. The eye of the axe is two inch by one inch and is oval. Five small stars identify the French blacksmith. These are heavy and clumsy instruments and are found in almost the whole Petun area" (Thomas 1956:45,46, fig.12). Tim Kenyon (1992) notes there is still some wood in the poll.

Axe 88 See p. 17. Garrad Collection (found 1965)

This is one of five axes from Plater-Martin BdHb-1 with bashed-in damaged polls, in this instance substantially broken away at the top and bottom of the axe. The specimen is unique both in its visibly distorted dimensions, being exceptionally short, and in its three "walking-stick" forge marks each side, two crossed and one detached. This axe has no counterpart in the Petun Archaeological Zone for either attribute. The width/length (Q/B. see later) of this specimen is .65 compared with the more usual ca. .5.

This appears to be an example, and the only one recognized in the Petun area, of an "upset" axe restored to use by shortening the blade to make a new edge. Compared with another axe with similar dimensions except for length (Collingwood Museum X975.974.1 from the earlier Haney-Cook BcHb-27 Site), this one may have been shortened by as much as 6 cm.. Kenyon (n.d.) has noted that the blade edge is split, indicating that there is no

steel insert. If the axe was indeed originally 6 cm. longer, it seems logical that the blade was damaged beyond casual repair and was repaired by being skilfully reforged to provide a consistent taper to a new cutting edge. Any competent blacksmith could repair an axe by shortening it. Such an axe was "upset" (Woodward 1946:8-9).

The only known competent blacksmith in Ontario during the lifetime of the Plater-Martin BdHb-1 site was the Jesuit brother Louis Gaubert, stationed at Ste. Marie I and II 1642-1650. An apparently "upset" axe was found at Ste. Marie I, with a distorted appearance fairly similar to the subject, and an evident width/length (Q/B) of .557 (Kidd 1949:113, and Plate XLIII 'F'). That an axe found at Plater-Martin had been repaired on the forge at Ste. Marie I indicates a close relationship between the two centres. The "walking-stick" marks unique to this axe are presumably improvised substitutes replacing originals destroyed in the reforging. Details of this, and of a third "upset" axe from the Neutral area, have been published (Garrad 1993, 1994).

Kenyon (1992) notes "Pushed top, missing parts from poll". Both the damaged poll and the missing blade edge were reconstructed by comparison with Collingwood Museum axe X975.974.1 from the earlier Haney-Cook BcHb-27 Site, marked with three crosses, visible on one side only. The width/length (Q/B) calculation for the reconstructed axe is .54.

As reconstructed, this axe best fits into GBP1 Group A, but allowing that Group A axes are not found on later sites (Kenyon and Kenyon 1987:17), the next best fit is GBP3a, Group C.

Axe 193 See p. 17. ASC Collection VIII-F-15236(3318)

Kenyon (1992) comments "This is a complete axe, marks fairly clear, small piece of wood in eye of poll" It is marked each side with a cluster of three two-bar 10 mm. crosses.

Axe #187 from the possibly contemporary Glen Best BbHb-4 Site most closely corresponds with similar marks in similar orientation on an axe of fairly similar weight. However the subject axe has no counterpart in outline.

This axe meets all criteria for GBP3b Group D and is therefore entirely appropriate for the Plater-Martin BdHb-1 Site. The bars of the crosses are not of consistent width. This is presumably due to wear of the die rather than intentional modification. The 10 mm. die that marked this axe is not the one that marked #195.

Axe 194 See p. 17. ASC Collection VIII-F-14777(3312)44

This is a small and light axe, the smallest at Plater-Martin and the second smallest in the Petun area. The only smaller is 3b, Petun area but site unknown, which weighs only 454 gm.

Kenyon (1992) notes "Complete axe. Some small areas show original finish?".

The mark, one three-bar cross within a 9 mm. dia. circle each side, is unique at Plater-Martin and without counterpart in the Petun Archaeological Zone. Three-bar cross marks in clusters of three in circles 9 mm. and 11 mm. are known on two other recorded Petun area axes, both of which are bigger and heavier than the subject (McKay collection #12b, site unknown; Collingwood Museum X976.634.1). An axe found at Ste. Marie I also has a cluster of three 11 mm. 3-bar crosses (Kidd 1949:114 Fig.19 'E').

A small axe with a single forge mark each side, this specimen meets the Kenyons' description of Group E axes "... very small axes, found both in (GB) periods 3a and 3b ... tend to have only a single mark" (1987:17). Fitzgerald's criteria also places this axe firmly in GBP3. Yet it is too small to fit well with the Iron Axe Dating Criteria figures for GBP3 (fig. 4). It does fit GBP3 and Group E better than any others, and marginally so as GBP3b rather than GBP3a.

Axe 195 See p. 18. ASC Collection VIII-F-14778(3312)(394)

This axe is the second of the five Plater-Martin axes with crushed polls. It is uniquely marked with three 10 mm. dia. crosses each side, but the impressing tool has been notched in one of the quarter segments. The axe outline and mark has no counterpart from Plater-Martin or anywhere in the Petun Archaeological Zone.

Kenyon (1992) notes "Poll bashed in. The hammered marks on the poll look like they were made from another axe, could this have been used as another tool, perhaps a wedge, to split wood? A close look at the impressed marks shows a small V in one of the impressions".

The proposed poll was reconstructed from Axe #161, which is close in weight, from the contemporary Kelly-Campbell BcHb-10 Site. This axe scores best against the criteria for GBP3b Group D and is therefore an axe appropriate to the Plater-Martin BdHb-1 Site.

Axe 196 See p. 18. ASC Collection VIII-F-14776(3312)(401)

This is a complete axe. The impressed marks are not clear (Kenyon 1992), but are taken to be a cluster each side of three 9 mm. dia. simple two-bar crosses. This is the second of two axes from Plater-Martin so marked, and with similar orientation, but the bars of the crosses differ in width so that the same die was not involved.

The axe outline has no counterpart in the Petun Archaeological Zone.

Fitzgerald's criteria places this axe in GBP3. This is confirmed by the Kenyons, to whom it could be either a Group C in GBP3a, or Group D axe in GBP3b.

Axe 197 See p. 18. ASC Collection VIII-F-14775(3312)(400)

The leading edge of the blade of this axe is damaged and bent. The marks are one simple two-bar 9 mm. cross each side, the only axe so marked at Plater-Martin. Axe #200 from the site has a similar cross but it has a diameter of 14 mm.

Two other Petun area recorded axes are marked each side with a single 9 mm. cross but the orientation does not match the subject. #178 from the earlier Hamilton-Lougheed BbHa-10 Site, and unprovenanced Collingwood Museum X975.977.1 Evans 14, match in orientation, but the subject axe corresponds only in some similarity of weight and of the damage to the cutting edge of the blade.

This axe meets all criteria for a GBP2 Group B axe. This is the second of two GBP2 axes from the site. It is noted that the Kenyons' twenty-three GBP3b samples also include two Group B axes (1987:13).

Axe 198 See p. 18. ASC Collection VIII-F-14774(3312)(399)

This long and slim axe is marked each side with a single notched or cogged ring. It has no counterpart in either outline or mark in the Petun Archaeological Zone. There is damage to the cutting edge of the blade.

Kenyon (1992) comments: "Badly corroded. Impressed mark not too clear."

Axe 198 best meets the criteria for a GBP3a Group C axe.

Axe 199 See p. 18. ASC Collection VIII-F-14770(3312)(395)

This is the third Plater-Martin axe with a bashed-in poll, more extensively so than the others. Kenyon (1992)

comments "Poll bashed in. Impressed marks fuzzie. Marks on drawing only a guess"

The marks appear to be a cluster of three small (6 mm. dia.) 6-petal flowers each side, unique in the Petun Archaeological Zone. Examples with six (McKay collection #192), seven or eight (Collingwood Museum X975.966.1), and eight petals (Ste. Marie I per Kidd 1949:114 Fig. 19, 'H' and 'J') are not at all similar.

The poll outline was reconstructed from the somewhat heavier axe #161 from the contemporary Kelly-Campbell BcHb-10 Site, and which has the closest correspondence in outline.

This axe fits into the dating criteria somewhat ambiguously, marginally closest to being a Group B axe in GBP3a, followed closely by Group C in GBP3a, Group B in GBP2 and Group D in GBP3b.

Axe 200 See p. 18. ASC Collection VIII-F-14771

This axe is somewhat bashed in at the poll and the blade edge is broken off. It is noticeably thin in width, narrow in height, and therefore light in weight. It is the fourth of the five Plater-Martin axes with crushed polls. It has no counterpart in the Petun area in outline, and is unique in the size of the single 14 mm. dia. mark each side. The mark, seemingly a two-bar cross, has not been placed evenly. One side is deep and the other barely present. Unevenly placed dies are frequent but the unusually long diameter of this one makes it more noticeable. Perhaps for this reason the smaller dies were more popular.

Kenyon (1992) comments "Top of poll pushed in. A number of axes I have recorded are like this. Speculation - if the axe started to come loose from the haft a hefty blow or so on the top of the poll should make it secure."

The blade outline was reconstructed from Axe #4b, Petun area site unknown, which is close in weight. The poll was copied from Axe #187 from the contemporary Glen Best BbHb-4 Site.

As with axe #194 this axe #200 meets Fitzgerald's criteria for GBP3 and meets the Kenyons' descriptive criteria for Group E axes, but does not correlate well with the metrical criteria. It is marginally a GBP3b axe.

Axe 201 See p. 19. ASC Collection VIII-F-14773(3312)(398)

The poll of this axe is slightly crushed. This is the fifth of the five Plater-Martin axes so damaged. The cutting edge is well blunted. It is the second smallest axe from the Plater-Martin Site (see #194), and the third smallest from the Petun area.

The axe has one erratic 5-pointed star forge mark each side, and is unique, having no similar match in outline, weight or mark elsewhere in the Petun Archaeological Zone.

Kenyon (1992) comments "Incomplete axe. Poll distorted. Leading edge missing. The impressed mark showing a five-pointed star is the first I have recorded".

The poll reconstruction was loosely based on Axe #98 from the earlier Hamilton-Lougheed BbHa-10 Site.

As with Axe #200, this is clearly a Group E GBP3 axe, marginally GBP3b.

The Marks

All thirteen iron trade axes from the Plater-Martin BdHb-1 Site bear visible forge marks added during manufacture. The intent, meaning and purpose of the marks is not known. They have been described above, and are reproduced as Fig. 6.

Forge marks, also variously called armourer's, axe, guild, impressed, maker's, punch, stamp, and trade marks (Baker 1984:52; Fitzgerald 1988:13,15-16, 1990:438-440,447; Kenyon 1987:6; Kenyon & Kenyon 1987:13; Kidd 1949:112-114) on axes elsewhere, have been studied and illustrated by a number of scholars. In recent years some general correlation of mark types and numbers with time/GBP has been achieved (Fitzgerald 1990:439-440; Kenyon and Kenyon 1987:13,18). At Plater-Martin a number of marks are unique.

Arthur Woodward states that there are four marks which occur the most frequently on 17th and 18th century iron axes (Woodward 1946:29). The first of these is the simple two-bar cross. In Ontario the two-bar cross mark is reported in a variety of sizes, orientations and numbers by Fitzgerald (1988:15,3,4), Kenyon (n.d.), Kenyon and Kenyon (1987:13 Fig.3A) and at Ste. Marie (Kidd 1949:114,A,B,C,D). In the Petun Archaeological Zone the simple two-bar cross has been found both singly and in clusters of three within circles of 6, 8, 9, 10, 11, 12, 13 and 14 mm. diameter. The highest occurrence is a cluster of three 9 mm. crosses, which appears on 20% of the known Petun area axes. This combination occurs on the Plater-Martin BdHb-1 Site on two axes (#1a, 196), a frequency of only 15%. Single unmodified two-bar crosses also occur on only two Plater-Martin axes (#197, 200).

The second mark claimed by Woodward to be among the most popular is the three-bar cross, reported by Fitzgerald (1988:15, 8), Kenyon and Kenyon (1987:13, F), Kidd (1949:114, E) and Woodward (1946:29). Only one example occurs at Plater-Martin (#194) and only two other examples are known in the Petun area (McKay 12b, Collingwood Museum X976.634.1).

The third and fourth of Woodward's popular marks are the six-bar 'waggon-wheel', reported by Fitzgerald (1988:15, 1a, 1c), Kenyon (n.d.), Kenyon and Kenyon (1987:13, C) and at Ste. Marie (Kidd 1949:114, G), and the two-bar cross modified by dots added to three of the four quarter segments. These marks have not been found at Plater-Martin.

While in some cases there are similarities and variations, the marks on six Plater-Martin axes, #87, 88, 195, 198, 199 and 201, are unique. These are all GBP3 axes, three each GBP3a and 3b. (Axe #88, q.v., is an anomaly if the supposition is correct that the mark is later than the axe).

Conclusions

The thirteen iron axes from the Plater-Martin BdHb-1 Site are generally alike, yet individually distinct. All are appropriate to the site. Included are two GBP2 Group 2 axes, one GBP3a Group B axe, four GBP3a Group C axes, one GBP3b Group B axe, two GBP3b Group D axes and three GBP3a Group E axes. An unusually high percentage of marks on the axes are unique. Eight of the axes, including the oldest, are damaged, and it is suggested their abandonment on the site was intentional.

Acknowledgements

Grateful thanks must go to the late Thomas "Tim" Kenyon for his interest in Petun area iron axes, for the use of his work and the inspiration of his kindness; all the axe drawings in this paper are by Tim Kenyon. Thanks also go to Antonia Holden, ASC Loans, Canadian Museum of Civilization, for providing the iron axes from the Goodwillie collection for study; to Tracy Marsh, Curator, Collingwood Museum, for access to the iron axes in the Huron Institute Collection; to Sandra Saddy and Jeanie Tummon at Sainte-Marie-Among-the-Hurons for information; and to Jim Shropshire for constructive comments.

Figures (following)

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FIG. 3 - Kenyon Iron Trade Axe Measuring System.

FIG. 4 - Iron Axe Dating Criteria.

FIG. 5 - Data for Thirteen Iron Axes from the Plater-Martin BdHb-1 Site.

FIG. 6 - Marks on Thirteen Iron Axes from the Plater-Martin BdHb-1 Site.

FIG. 7 - Outlines of Thirteen Iron Axes from the Plater-Martin BdHb-1 Site.

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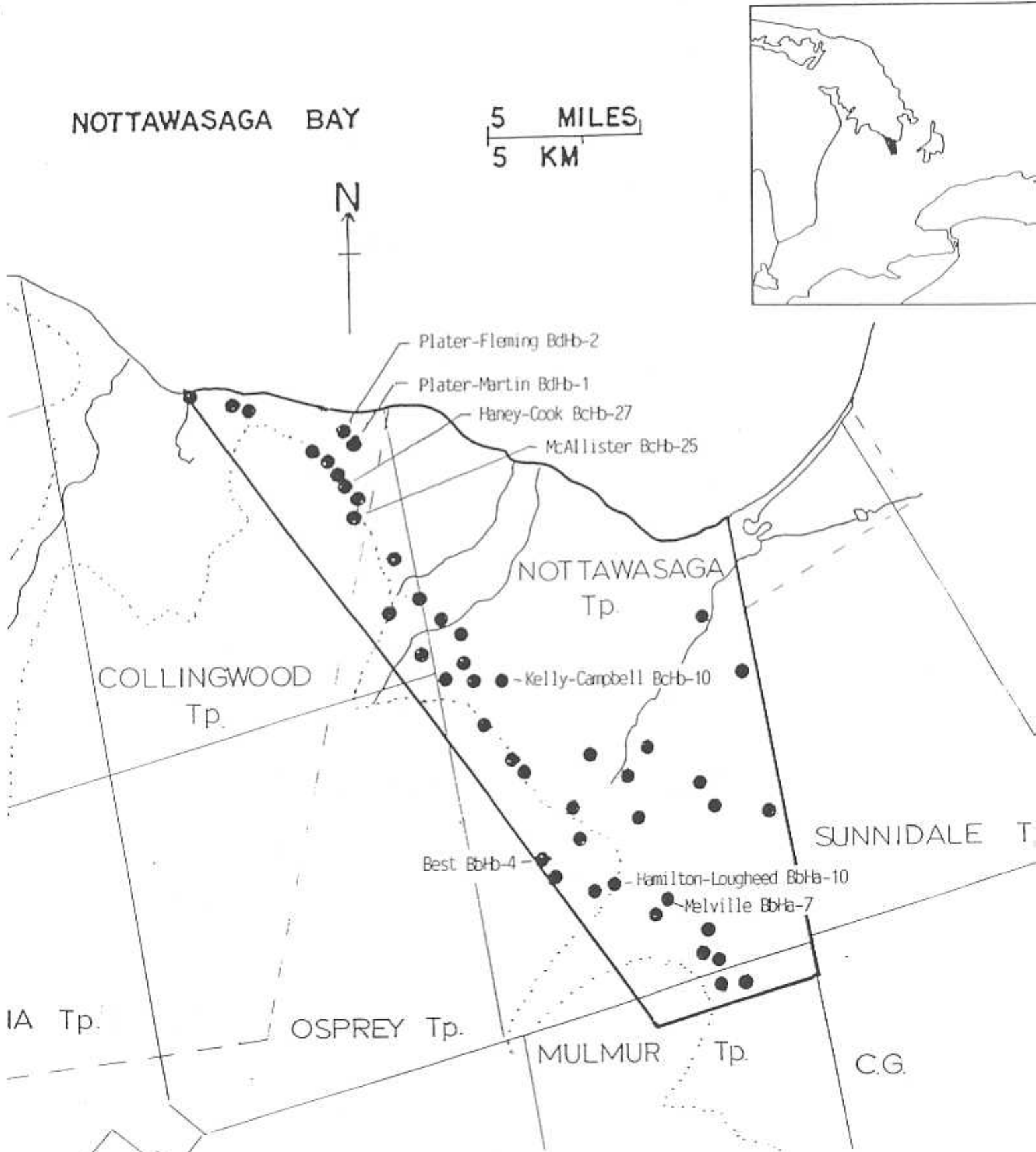


FIG. 1 - Location of the Petun Archaeological Zone and Sites Mentioned in the Text.

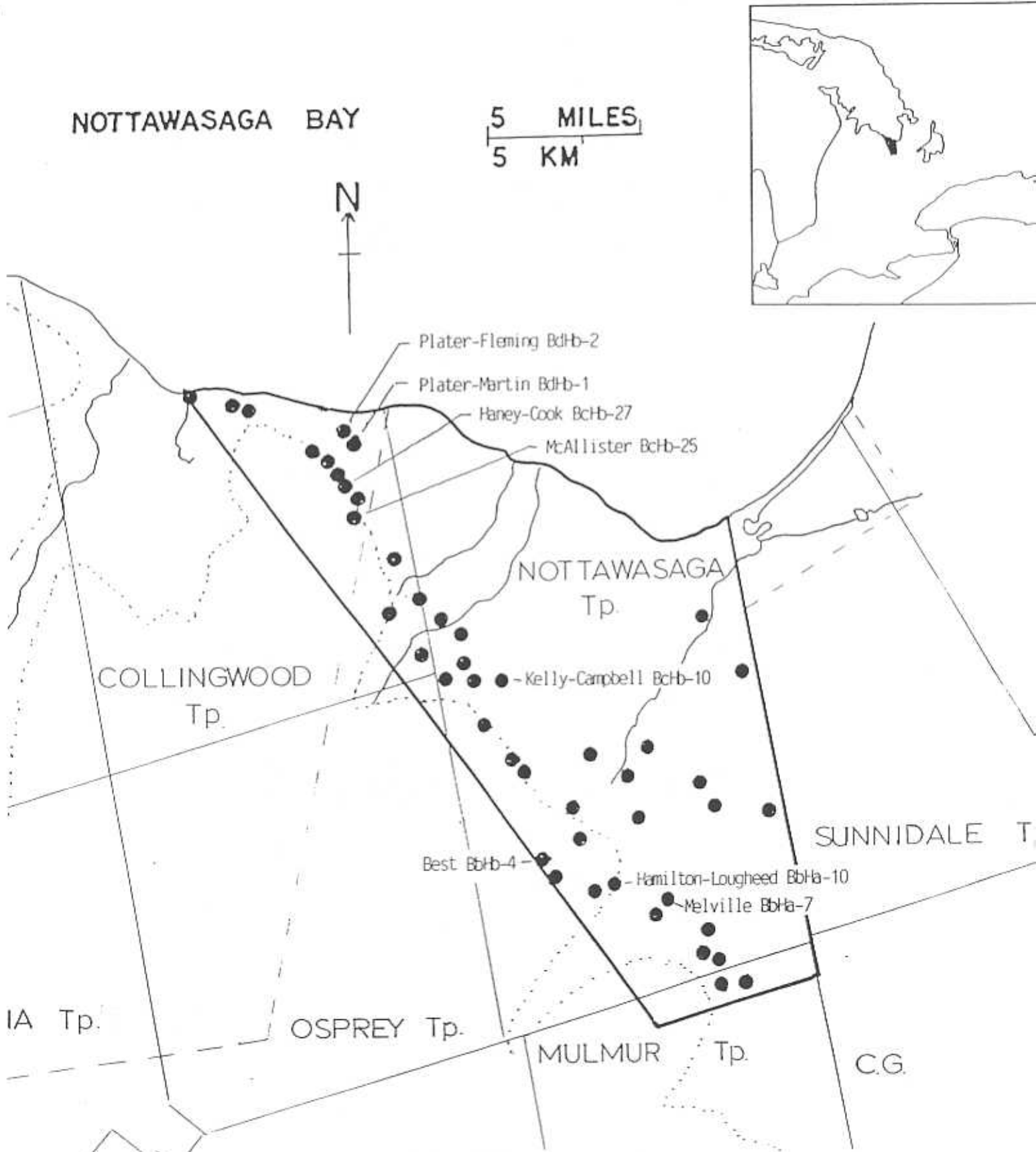


FIG. 1 - Location of the Petun Archaeological Zone and Sites Mentioned in the Text.

TRADE AXES

from *Trade Axes in Ontario 1580-1650*

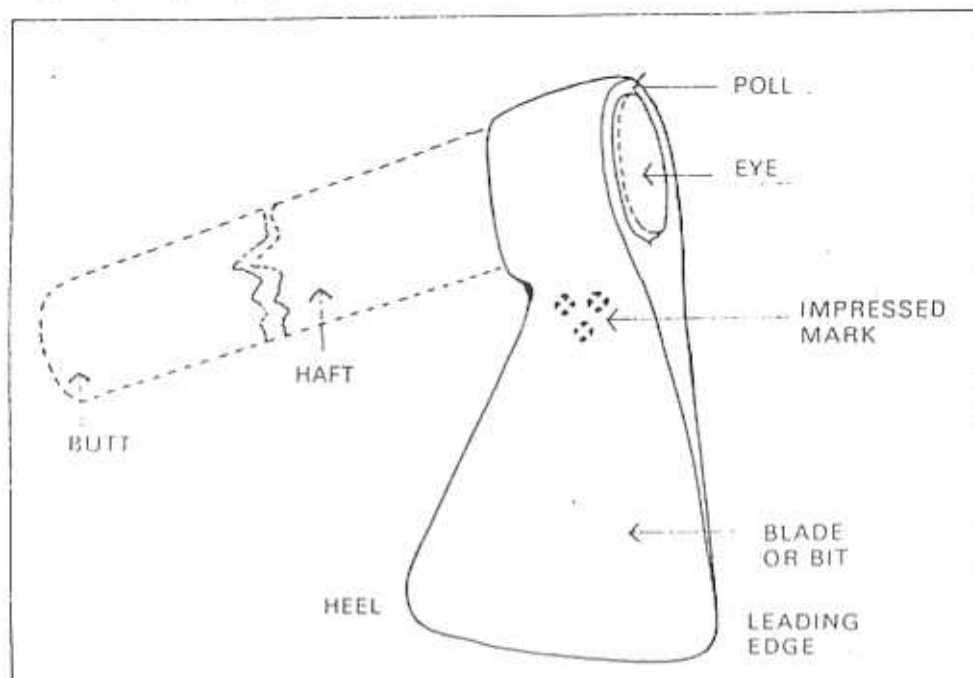


FIG. 2 - Kenyon Iron Trade Axe Terminology

Iron Trade Axes in Ontario 1580-1650

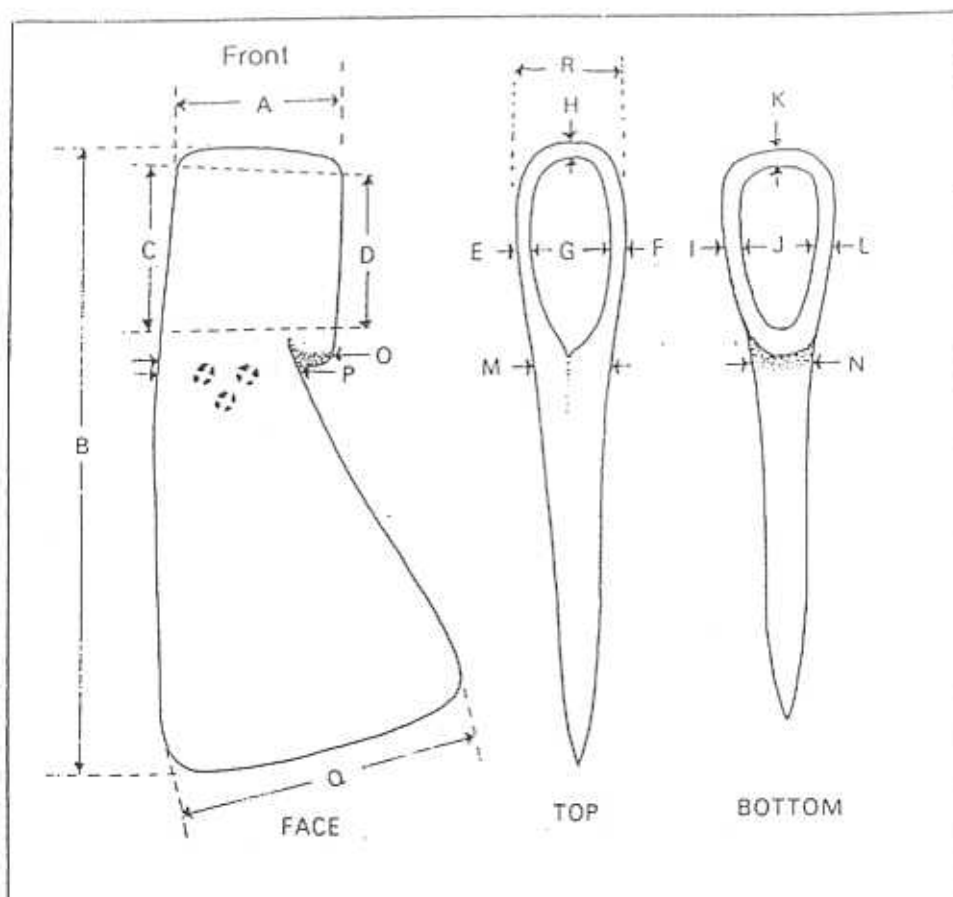


FIG. 3 - Kenyon Iron Trade Axe Measuring System

FIG. 4 - IRON AXE DATING CRITERIA

GBP Group (Kenyon's data)	A	B	IJL	KD	N	O	P	Q	weight (grams)	
	(measurements in Millimetres, weight in grams)									
1	A	62-71	186-232	32-37	54-63	23-32	59-70	51-62	90-128	
2	B	50-59	190-211	31.5-35	49-58.5	18-25	47-59	40-48	90-113	
2	C	58-58	191-200	34.5-36	55-61	25-26	56-57	47-50	107-112	
2	D	61	192	36	62	27	62	52	103	
3a	B	55-60	186-210	34-36	53-61	20-22	53-54	42-47	93-103	
3a	C	54-65	186-215	33-37	53-61	21-25	53-60	43-50	94-114	
3a	D									
3a	E	37-55	167-172	31-36	50-66	22-25	36-51	31-42	82-89	
3b	B	58-58	173-191	33-36	52-53	20-23	53-59	46-52	92-95	
3b	C	55-59	192-206	35-37	55-57	25-27	54-57	46-47	95-104	
3b	D	57-63	185-210	24-40	58-62	18-28	49-61	45-53	84-100	
3b	D	45-55	155-178	33-38	49-54	18-24	42-53	36-41	77-93	
(Fitzgerald's data)										
1		175-228							105-125	1,190-2,237
2		185-219							55-115	888-1,710
2-3		168-219							76-117	950-1,355
3		139-222							70-113	540-1,479

Fig. 4 - IRON AXE DATING CRITERIA

FIG. 5 - DATA FOR THIRTEEN IRON AXES FROM THE PLATER-MARTIN BdHb-1 SITE
 Measurements in millimetres, weights in grams.
 est. = estimated original

Axe #	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	Q/B	weight	GBP Group
1a as is	45	104																			
est.	56	194	52	48	4	5	24	5	5	22	4	4.5	26	25	57	45	87	21	.5	794	B
24a as is	61	215	58	47	5	5	28	5	5	27	5	5	28	26	56	50	108	37		1,361	C
est.	63	191	52	46	5	4.5	24	5	5	22.5	6	5	28	23	64	58	85	36	.445	1,390	B
88 as is	63.5	142	49	4.5	6	34	5	5	27	5	6	23	20	63	55	92	45			907	C
est.	215	59	56	5	5	27	5	5	27	5	6	23	20	63	55	92	45		.544	1,276	C
													24	23		117	38				
193	60	205	63	57	6	6	28	6	5	28	5	5	27	23	53	45	91	40	.44	1,290	D
194	46	155	46	40	4	4	24	4	3	22	3	3	18	16	46	38	78	33	.5	581	E
195 as is	58	190	63	58	4	4	23	4	4	23	4	4	27	23	60	52	98	39	.515	1,318	D
est.	58	220	63	56	4	5	27	4	4	27	4	4	27	25	57	41	98	37	.445	1,318	C
196	56	190	53	50	4	4	25	4	4	25	4	4	25	23	55	40	98	35		1,191	B
est.	196															100			.51	1,200	B
198	55	212	57	50	4	4	23	4	4	22	4	4	22	21	55	47	100	33	.47	1,219	C
est.	60	190	58	51	4	4	30	4	4	27	4	4	25	22	54	46	95	38	.5	1,176	B
199 as is	50	165	62	55	5	4	30	5	4	32	4	4	22	21	42	33	80	40	.44	737	E
est.	180	62	55																	850	E
201 as is	44	165	54	47	4	4	27	4	4	24	4	4	21	20	45	38	80	46	.48	765	E
est.	44	155	46	40	4	4	23	4	3	22	3	3	18	16	42	33	78	32	.44	581	
minimum	63.5	220	63	58	6	6	34	6	5	32	6	6	28	26	64	58	117	46	.544	1,700	
maximum	53.7	187	54.5	49	5	5	28.5	5	4	27	4.5	4.5	23	21	53	45.5	97.5	39	.49	1,140	
mean	56	194	57	51	4.5	5	26	4	4	25	4	4	24.6	22	54.5	45	94	37	.48	1,177	
average																					

FIG. 5 - DATA FOR THIRTEEN IRON AXES FROM THE PLATER-MARTIN BdHb-1 SITE

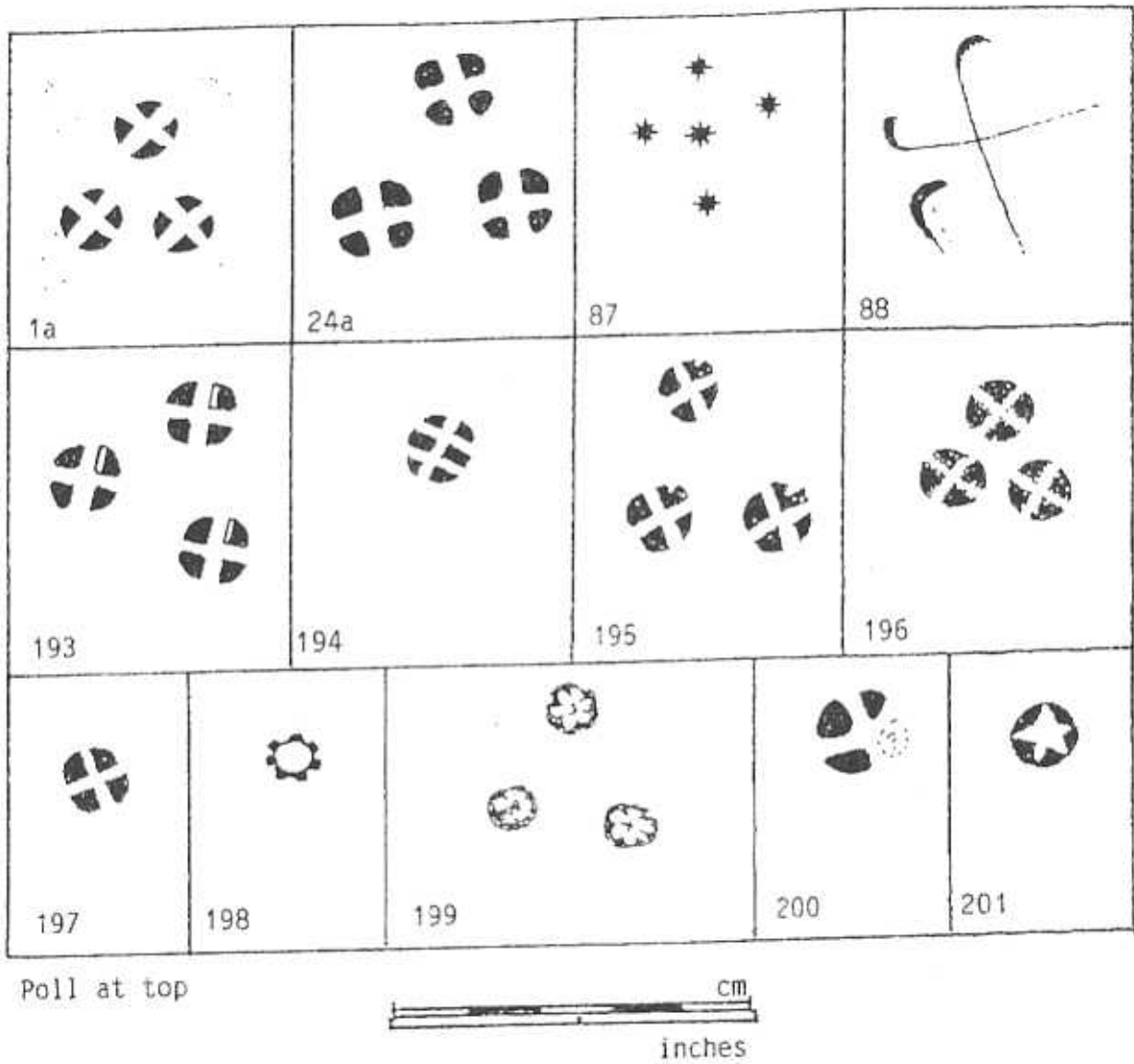
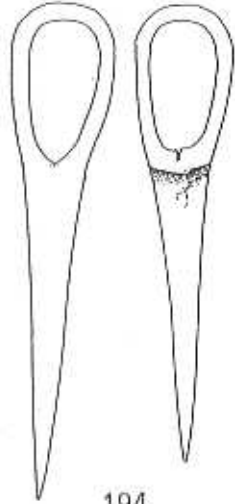
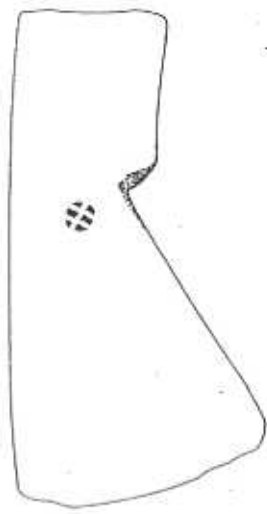
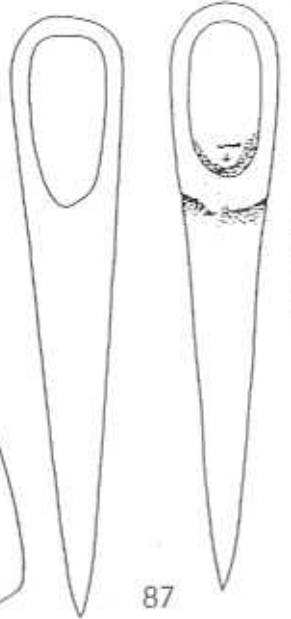
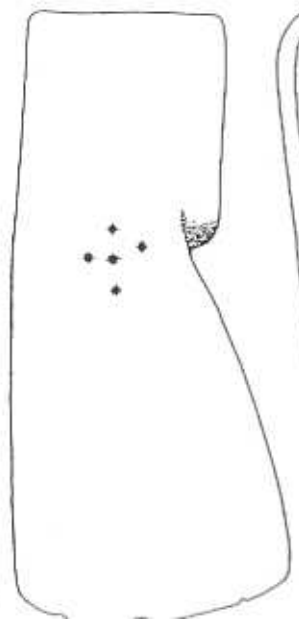
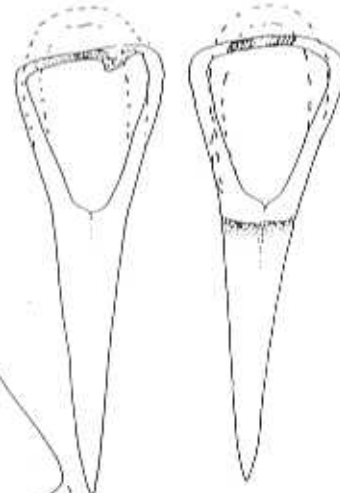
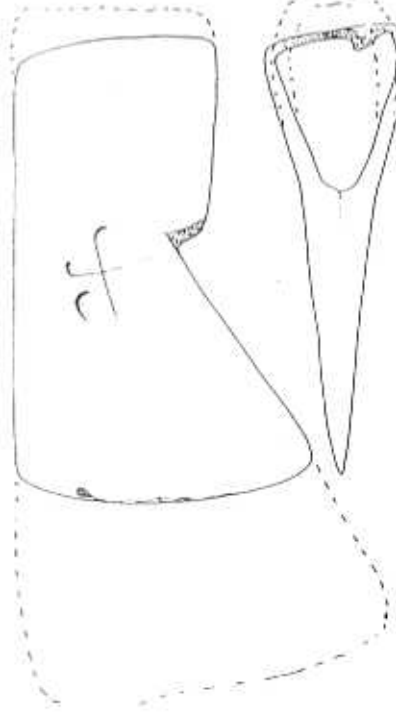
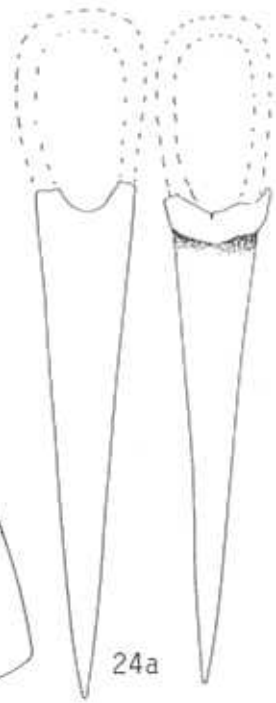
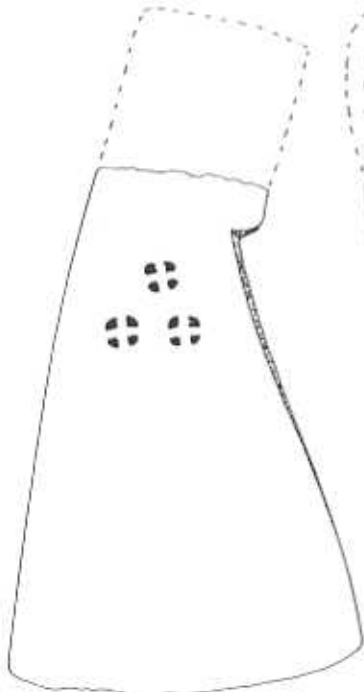
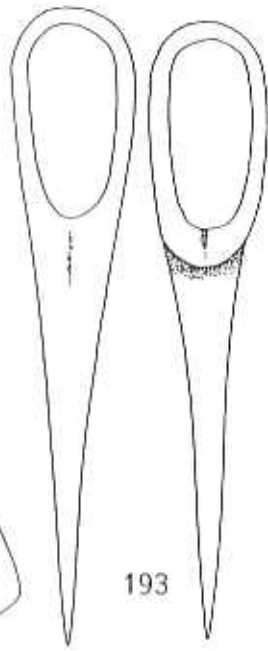
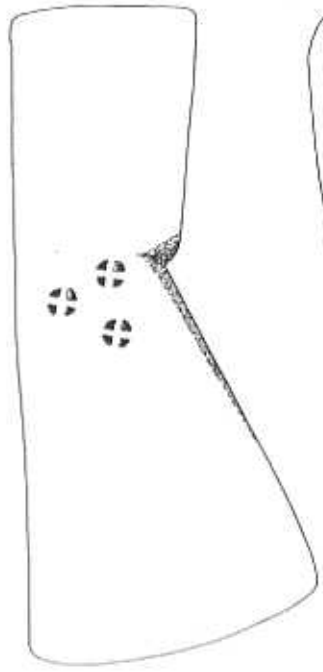
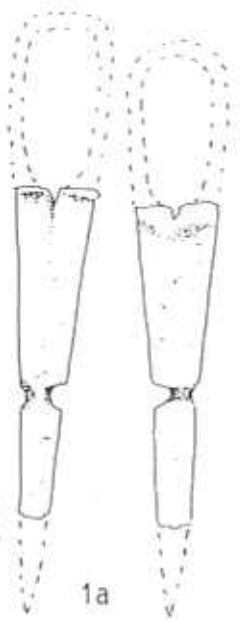
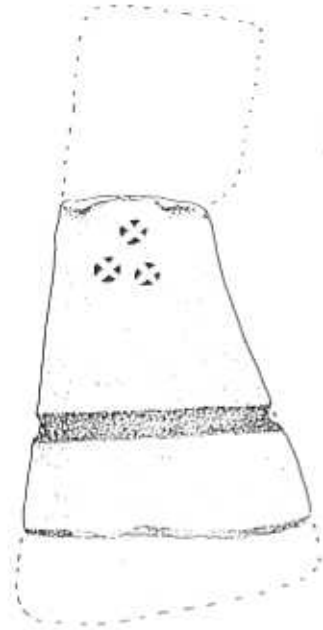
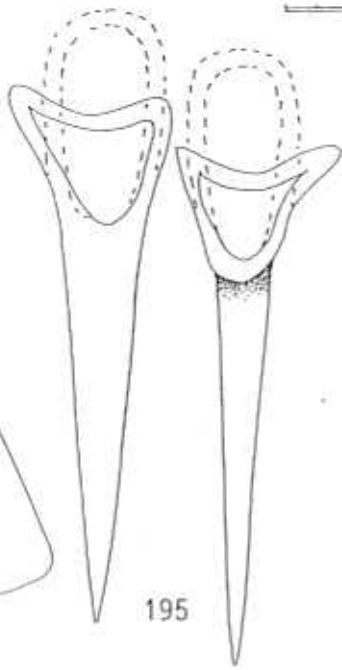
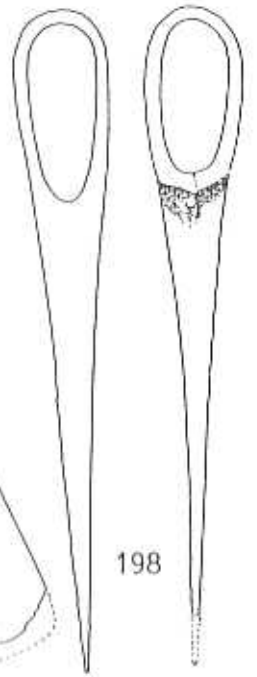
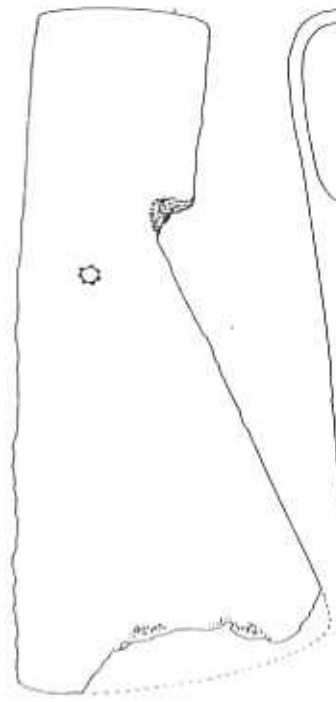


FIG. 6 - Marks on Thirteen Iron Axes from the Plater-Martin BdHb-1 Site

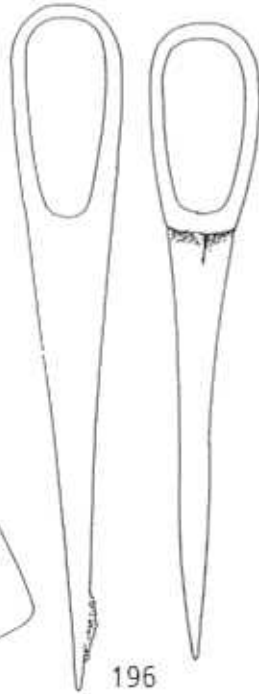
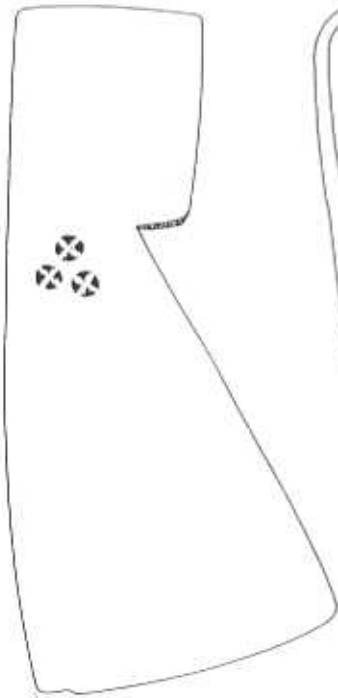




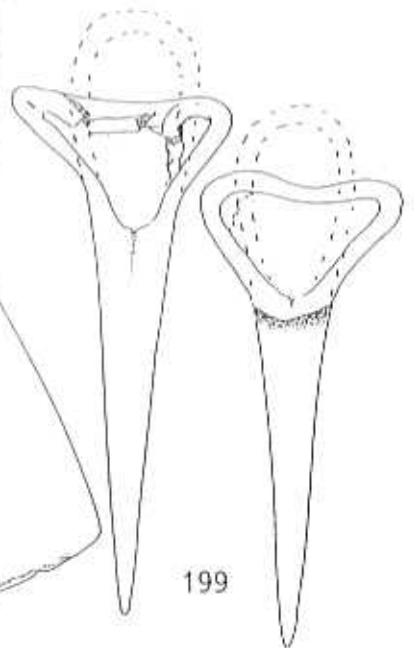
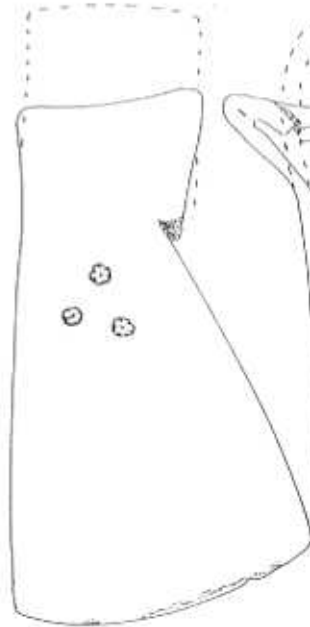
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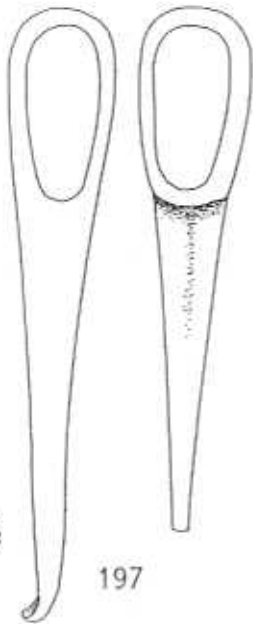
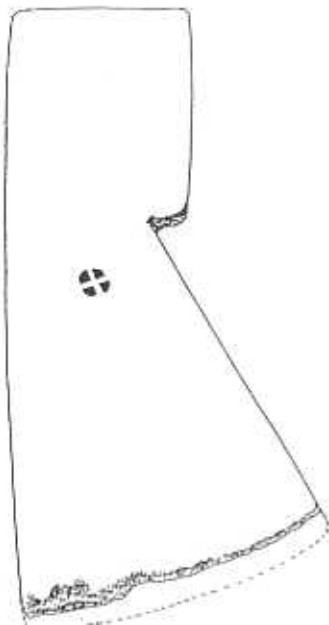
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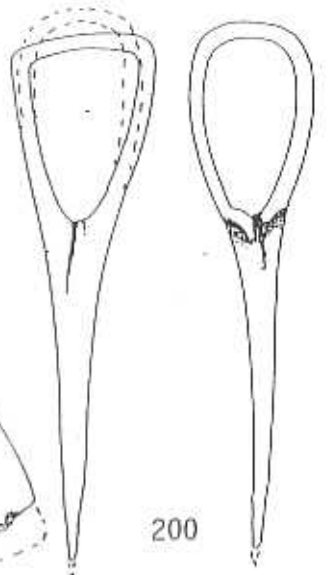
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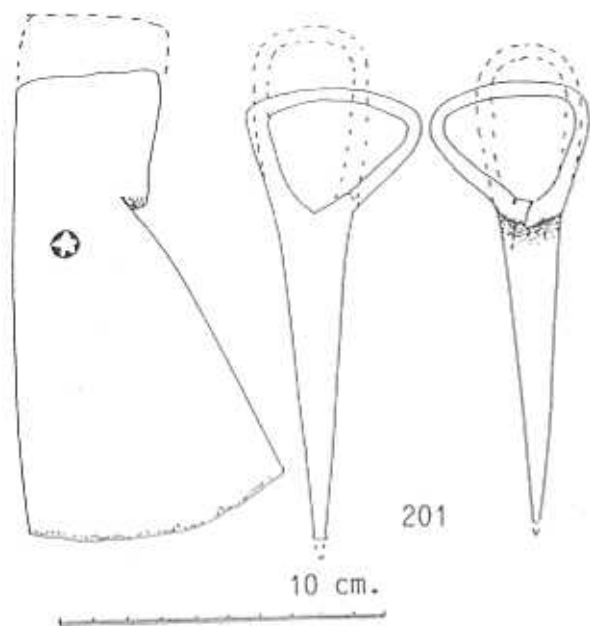


FIG. 7 - Outlines of Thirteen Iron Axes from the Plater-Martin BdHb-1 Site.