

Colonial Plantation Hoes of Tidewater Virginia

By
Keith Egloff
Research Report Series, No. 1



**Virginia Department of Historic Resources
221 Governor Street
Richmond, Virginia 23219**

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(Third Printing)

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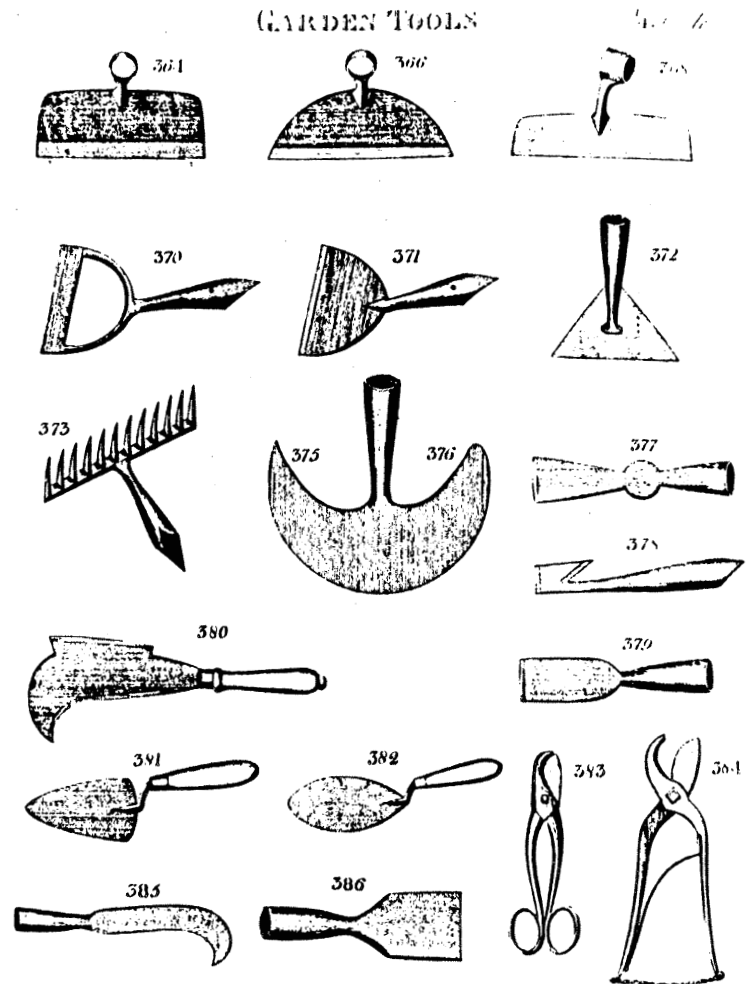
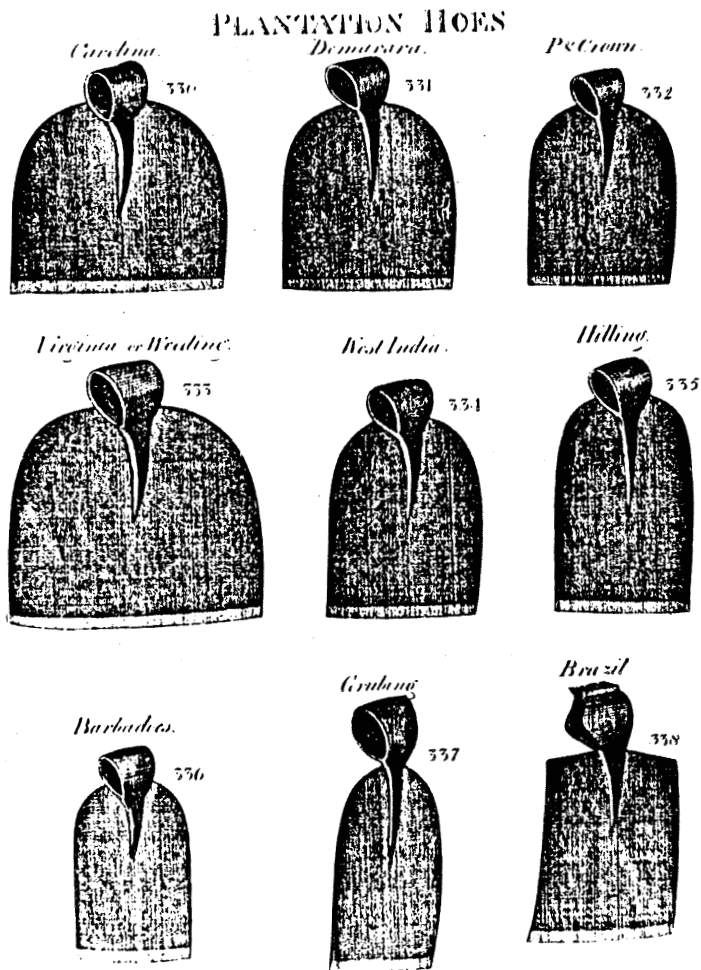
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INTRODUCTION

Recent archaeological investigations at Kingsmill on the James River near Williamsburg, Virginia have yielded a substantial collection of contextually dated seventeenth and eighteenth century plantation hoes. Synthesis of archaeological data and historical documentation has resulted in a hoe typology that expands our knowledge of how this particular example of material culture evolved and became integrated into the agricultural system of tidewater Virginia.

Between 1972 and 1975, 23 hoes dating ca. 1720 were recovered from the Harrop well at Kingsmill, and 90 other hoes or hoe parts were found at other Kingsmill colonial sites (Kelso 1973: 29-31). This assemblage forms the basis for the present study, although a total of 162 hoes were examined, including examples from Flowerdew Hundred Plantation, Maycock Plantation, Carter's Grove Plantation, Governor's Land, and Bennett Farm, all on the James River below Hopewell, Virginia.

While there were many varieties of hoes used by colonial planters, this study is concerned solely with plantation hand hoes, or those used in hand-tilling such field crops as tobacco (Fig. 1). Garden hoes, a smaller version used in kitchen gardens (Fig. 2), will not be included in the discussion, nor will fluke, harrow, trowel, or plow hoes, all of which were too



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Figure 1. Plantation hand hoes illustrated in Explanation or Key to the Various Manufactories of Sheffield, by Joseph Smith, 1816.

Figure 2. Garden hoes on top row are from Explanation or Key to the Various Manufactories of Sheffield, by Joseph Smith, 1816.

heavy to be hand-held and which probably were drawn by horses (Gibbs 1976: 90-97).

Initial research on plantation hand hoes was stimulated by the unusual collection of 23 intact hoes from the Harrop well. Why so many functionally whole though somewhat worn hoes had been discarded as a group in a well that was still being used remains a mystery, but the puzzling circumstance created a unique collection which probably represented the hoes in use on one plantation at one time. Perception of plantation hoe study was influenced by the unusually good state of preservation of the Harrop hoes, which laboratory conservation enhanced. All attributes of the hoe - its shape, its component parts, the maker's mark and initial, the way the wrought iron was twisted, drawn out, and welded to make the hoe - were highly visible, even to an untrained eye. From this group explicit criteria were established for the study of earlier and later hoes, as well as less well-preserved ones.

For easier consultation, the many photographs illustrating hoes discussed in this report have been placed together in a section beginning on page 25. Detailed descriptions, including the provenience of each hoe illustrated, are available in Appendix A, following the illustrations section. Hoe photographs have been chosen to illustrate three hoe types (Type I, II, and III), as well as the three hoe varieties, or styles (grubbing, hilling, and weeding). In some cases, comparable photographs and drawings of the same hoe are presented.

CHAPTER I: PLANTATION HAND HOES IN COLONIAL VIRGINIA

In an 1800 essay on tobacco culture and commerce, an English agricultural historian named William Tatham discussed three varieties of hoe used in tobacco production: the grubbing hoe or mattock, the narrow or hilling hoe, and the broad or weeding hoe. The first of these, the grubbing hoe or mattock, was used to break up ground. A smaller version, which he called a sprouting hoe, "serves to break up any particular hard part of the ground, to grub up any smaller sized grubs which the mattock or grubbing hoe may have omitted, to remove small stones and other partial impediments of the next process" (Tatham 1800: 12).

Records from the Virginia colony reveal that these same varieties of hoe were employed on eighteenth century plantations. The journals kept by Francis Jerdone, owner of a Louisa County plantation which included a blacksmith's shop operated by an indentured smith, describe the sales of grubbing hoes made and repaired there, together with information concerning size, price, and weight (Jerdone 1749-1755). Excerpts from Jerdone's blacksmith account book (Jerdone: 1766-1768) also indicate that his smith made and repaired grubbing hoes:

1766 work done for FJ	(f. s. d.)
Novr. 18	20 Grubbing hoes made @ 2/ a piece	2..0..0

Novr. 25	Mrs. Judy Belsches making a Grubbing hoe Eye & setting on	0..1..0
Decr. 2	Mrs. Kimbrow To laying 2 Grubbing hoes 2/6	0..2..6
1767 Jany. 27	Mr. Samuel McGehee To laying a Grubbing hoe 1/3 & beating 1 out 6d.	0..1..9
1768 June 30	To laying 5 Grubbing hoes	0..6..3

The second variety of hoe described by Tatham is the narrow or hilling hoe (Fig. 3) which he described as

generally from six to eight inches wide, and ten or twelve in the length of the blade, according to the strength of the person who is to use it; the blade is thin, and by means of a moveable wedge which is driven into the eye of the hoe, it can be set more or less *digging* (as it is termed), that is, on a greater or less angle with the helve, at pleasure. In this respect there are few instances where the American blacksmith is not employed to alter the eye of an *English*-made hoe before it is fit for use; the industrious and truly useful merchants of Glasgow have paid minute attention to this circumstance.

The use of this hoe is to break up the ground and throw it into shape; which is done by chopping the clods until they are sufficiently fine, and then drawing the earth round the foot until it forms a heap round the projected leg of the labourer like a mole hill, and nearly as high as the knee; he then draws out his foot, flattens the top of the hill by a dab with the flat part of the hoe, and advances forward to the next hill in the same manner, until the whole piece of ground is prepared.

Although Tatham uses "narrow" and "hilling" as synonymous terms for the same hoe, Francis Jerdone's Virginia accounts refer to them as if they were two different hoe styles. In the late 1740s Jerdone sold both narrow and hilling hoes at a store

he kept in Yorktown. His cargo waste book (Jerdone 1748-1749: fol. 30, 47, 101) indicates that narrow hoes were bought at the store by Captain John Perrin on December 7, 1748, while Jerdone sold a single hilling hoe to a Mr. Cooke on March 4, 1748 and two and one half dozen hilling hoes to one William Nelson on July 19, 1749. Excerpts from Jerdone's blacksmith accounts further illustrate that there were apparently distinctions between narrow and hilling hoes:

		(£. s. d.)	
1766	...work done for FJ		
Novr. 18	3 Narrow hoes & 2 broad hoes beat out	0..1..3	
	18 Narrow hoes laid @ 1/6 a piece	1..7..0	
	4 dozen & 8 new hilling hoes made @ 2/	5..12..0	
1767	Mr. Samuel Ragland		
Jany. 16	To laying 1 hilling hoe 1/6 to 4½ ld. Iron 1/6	0..3..0	
Feby. 28	Capt. James Overton per his overseer To 2 new hilling hoes @ 4/	0..8..0	
April 24	Mr. Thomas Lipscomb To making 3 new hilling hoes out of old Iron @ 2/3	0..6..9	
1768	Mr. Samuel Temple		
May 11	To laying 2 Narrow hoes	0..3..0	

A third variety of hoe, the broad or weeding hoe (Figs. 3,4) was described by Tatham, together with its use:

This is made use of during the cultivation of the crop, to keep it clean from the weeds. It is wide upon the edge, say from ten inches to a foot, or more; of thinner substance than the hilling hoe, not near so deep in the blade, and the eye is formed more bent and shelving than the latter, so that it can be set upon a more acute angle upon the helve at pleasure, by removing the wedge. We shall have occasion to notice the application of this implement under a subsequent head of this paper.

The operation of *hoeing* comprehends two distinct functions, viz. that of hilling, and that of weeding; and there are moreover two stages of hilling. The first hilling commences, as heretofore described, in the preparation of the field previous to planting the crop, and it is performed, as before explained, by means of the peculiar implement called a hilling hoe, the second hilling is performed after the crop is planted, with a view to succor and to support the plant as it may happen to want strengthening, by giving a firm and permanent foundation to its root; and it may be effected according to the demand of the respective plants by a dexterity in changing the stroke with the weeding hoe, without any necessity to recur to the more appropriate utensil.

The more direct use of the weeding hoe commences with the first growth of the tobacco after transplantation, and never ceases until the plant is nearly ripe, and ready to be *laid by*, as they term the last weeding with the hoe; for he who would have a good crop of tobacco, or of maize, must not be sparing of his labour, but must keep the ground constantly stirring during the whole growth of the crop.

As with the narrow and hilling hoes, Tatham discusses the broad and weeding hoe in synonymous terms, although Jerdone's accounts appear to differentiate between the styles. Francis Jerdone charged both broad and weeding hoes to his plantation accounts, and his blacksmith made both styles. For example, on December 4, 1758 " $\frac{1}{2}$ doz. broad hoes No. 3 & $\frac{1}{2}$ doz. ditto No. 4" were charged to his North Garden plantation. On January 4, (?) " $1\frac{1}{2}$ doz. Weeding hoes @ 4/6 No. 4 sent up 4..1..0," and on December 13, 1765 "1 dozen broad hoes @ 4/5 2..14.0" were charged to his Ivy Creek plantation (Jerdone 1750-1772: fol. 123, 245). Jerdone's blacksmith beat out two broad hoes for him on November 18, 1766 and beat out a weeding hoe for Col. John Snelson on November 27, 1767 (Jerdone 1766-1768).

A further description of the use of the broad hoe is extracted from discussion of the English cultivation of turnips in the *Farmers Kalender* for July 1778 (see Appendix B). Turnips, usually planted in kitchen gardens, were also cultivated as a field crop. Accordingly, the turnip weeding hoe, 12" broad and 4" high, was larger than a garden hoe and similar in size and shape to the Virginia plantation hand hoe illustrated at the top right in Figure 22.

The records of Charles Dabney, an eighteenth century Piedmont planter, itemized three varieties of hoes - grubbing, hilling, and weeding - without distinguishing between broad and narrow (Dabney 1744-1940). (Dabney did, however, compare pre-Revolutionary rates with the inflated prices during the Revolution):

The rates of Smiths Work settled from the 11th March to the 11 July 1780 settled by Mr. Crenshaws rates.

	Old Rates	New Rates
Makg Weedg Hoes of B[ar] Iron	3/6	£4..4..0
Makg ditto of Old Iron		4..7..6
Layg ditto with Bar Iron	2/6	3..0..0
Layg ditto with Old Iron		3..12..6
Makg Hillg Hoes of B[ar] Iron	2/	2..16..0
Makg ditto of Old ditto		3..0..0
Layg ditto with B[ar] Iron	1/6	2..2..0
Layg ditto with old Iron		2..5..0
...		
Makg Grubg Hoes of B[ar] Iron	2/	2..16..0
Makg ditto of O[ld] Iron		3..0..0
Layg ditto with B[ar] Iron	1/3	1..15..0
Layg ditto with O[ld] Iron		1..17..0

In summary, documentation indicates that the grubbing hoe was narrow, heavy, and reinforced for the initial penetration and breaking of the ground. The collar formed a right angle to

the blade to provide a vertical force for ground-breaking. The sprouting hoe was a smaller version of the grubbing hoe. Hilling hoes tended to be high in the blade, square shouldered, with the collar set at a more acute angle to the blade than the grubbing hoe, allowing the hilling hoe to carry more soil when drawn to the hill. Weeding hoes were broad and heavy, with the collar set at a still more acute angle to the blade than either the grubbing or hilling hoe. When raised and dropped, the weeding hoe made a wide cut that penetrated into the soil to sever weed roots.

The historic documentation cited illustrates inconsistencies in hoe terminology for which there are two possible explanations. Either the terms narrow/grubbing-sprouting, narrow/hilling, and broad/weeding refer to six different hoe styles, or else two sets of terms co-existed, one describing general hoe shape and the other specific hoe function. In the latter case, grubbing, sprouting, and hilling were functional terms further specifying the usage of a narrow hoe, and the term weeding further describes the function of a broad hoe. This second, more probable, explanation suggests that an 18th-century bookkeeper may have had the choice of applying either a functional or shape-descriptive term to a hoe.

CHAPTER II: PLANTATION HAND HOE TYPOLOGY

Hoe Nomenclature

Even an object as seemingly simple as a hoe has several identifiable parts to its structure, their distinctiveness providing clues to age, manufacturing techniques, and function (Fig. 5). The wooden handle of a hoe is inserted into an "eye," and is held in place by a "collar." The "neck," when it occurs, is formed between the collar and the blade. The slope of the neck to the blade forms the "shoulder" of the hoe. Seen in profile the hoe has a "back" (flat plane of hoe, facing away from hoer) and a "front," (uneven plane of hoe, facing hoer).

Several manufacturing features occur on the front of the hoe. A thickened midrib area, or "spine," gives added strength to the blade. The blacksmith's stamp, or "maker's mark," is most commonly found on, below, or off to one side of the spine. The purpose of the "initial," which is stamped or etched into the blade less deeply than the maker's mark, is not clear, but may be the signature of a middle man or distributor of the hoe. The "weld seam," marking the joining of the collar to the blade, reveals the manufacturing technique of the hoe and is of particular importance in formulating a hoe typology.

Hoe Typology

Three types of chronologically distinct hoes, applicable to both narrow and broad hoe varieties, have been defined by manufacturing techniques (Figs. 6, 7).

The first type of hoe, Type I, commonly occurs in archaeological contexts dating ca. 1620-1675 (Fig. 8). The collar is open, extending less than 3/4 of the way around the circumference of the eye. It may have a joint weld seam visible at least part way down the middle of the blade, and tends to have a longer neck than later hoes (Figs. 9, 10). Great variation exists in Type I hoes. The earliest Type I, ca. 1620-1650, has no spine and is most open in the collar. A bell-shaped blade occurs (Fig. 11). Later Type I hoes, ca. 1650-1675, are made with either a lap weld seam or a rudimentary spine, but never both (Figs. 12-15).

The Type II hoe, which typically appears on sites ca. 1675-1740, always has a spine and a lap weld seam (Figs. 16-21). The lap weld seam leads off to one edge on the front and to the opposite edge on the back, indicating a twist-and-wrap-around motion with the wrought iron before welding. The collar is more closed than Type I collars, extending slightly more than 3/4 of the way around the circumference of the eye.

The last type of hoe, Type III, which is found on sites dating ca. 1740-1790, has a collar that completely closes around the eye (Figs. 22-27). The lap weld seam is always located on the top of the collar, and there is always a spine. An exception to this, one of two late examples, appears in Fig. 27.

Manufacturing Techniques

Descriptions of techniques for manufacturing seventeenth and eighteenth century hoes are lacking, but one can arrive at an understanding of the methodology by studying the finished products.

Type I hoes appear to have been made from bar iron (readily available in any size) that was drawn down and bent around a form to make the collar, then brought together and joint-welded to form the middle seam (Gill 1965: 86-88). The welded bar iron evidently was further hammered out to form the finished hoe shape, for the joint weld seam that is visible just below the eye is eliminated on the remainder of the blade where successive hammer blows would have obliterated it.

In Late Type I hoes a lap weld seam sometimes occurs, made by lapping rather than butting two pieces of metal up against each other (Fig. 12). In joint-welded Late Type I hoes a rudimentary spine area appears to have been made by leaving the area below the eye high when hammering out the blade after welding, presumably to add strength to the blade of the hoe (Figs. 13, 14).

A different manufacturing technique was employed in producing Type II hoes, which are far more homogeneous as a group than Type I (Fig. 16). These hoes seem to have been drawn down from bar iron, bent around a form to make the collar, and more extensively lapped before welding than Late Type I hoes (Figs. 17, 18). The lap seam on many Type II hoes extends entirely across the breadth and height of the hoe blade, forming

a laminated blade (Figs. 19, 20, 21). The spine area, again, was left high for reinforcement.

Although Type III hoes, like Type II, display a uniform manufacturing technique, they give evidence of a distinctly different manufacturing process. Unlike Types I and II, Type III hoes were made from sheet iron (perhaps initially drawn down from bar iron) that was cut to a specific blade form, its collar bent into a full circle and welded only in a small area at the top (Figs. 23-27). Once again the blade was drawn down, leaving a spine area high for reinforcement. This manufacturing technique, perfected in the eighteenth century, lasted for at least one hundred and fifty years and is illustrated in *Practical Blacksmithing* (Richardson 1890: 294; Appendix C).

Changes in hoe manufacturing techniques between Type I, II, and III hoes reflect improvements in hoe strength and a concern for efficiency in hoe production. Evolution of a thick, elongated spine and extensive lap welding of the blade improved the strength of Type II hoes over those of Type I. The laborious process of drawing out, twisting, and lap welding the wrought iron of Type II hoes was eased in the production of Type III hoes by cutting from a single piece of sheet iron a hoe pattern that required only bending at the neck and welding in one spot.

The great variation in Type I hoes suggests that manufacturing techniques had not been widely standardized in the seventeenth century. Most of the Type II and III hoes studied were quite standardized, however, so one presumes that many of

them were made in factories from widely accepted hoe patterns. Unfortunately, hoes of local manufacture cannot be readily discerned from those made in England, suggesting that local smiths probably based their manufacturing techniques on factory patterns. It is evident from blacksmith's accounts that local smiths altered, repaired and resteeled hoes, as well as made new hoes to meet the specific hoe-shape needs of Virginia. Francis Fauquier referred to the work of local blacksmiths in a letter to the Virginia Board of Trade in December 1766: "Every gentleman of much property in land and negroes have some of their own negroes bred up on the trade of blacksmiths, and make axes, hoes, ploughshares, and such kind of coarse work for the use of their plantation" (Fauquier: 163-171).

Hoe Collar

The configuration of the hoe collar, its size and angle to the blade, suggests the hafting technique, the age of the tool, and the function of the blade. The hefting technique, or method of fitting the hoe to the handle, is determined by measuring across the breadth of the eye at the front and back of the collar. In all 31 Type III hoes found, the back measurement was larger than the front, allowing the hoe to slip over the grip end of the handle and wedge itself tightly against the knob end. The same design occurred in the 61 Type II hoes found, the back of the eye measurement being greater in all but two cases. But in 23 Type I hoes the back measurement was greater in only four cases, the same in six cases, and smaller in thirteen cases than the front eye measurement. Apparently

the hoe was not slipped over the grip end of the handle of these 13 hoes, but hafted directly onto the knob end, in the same way an axe head is driven onto a shaft.

In general, eighteenth-century hoes have larger eye diameters than seventeenth-century hoes. Mean eye diameter, measured at the back of the collar, is 1.7" for Type I hoes, with a range of 1.2" to 2.3". The Type II hoe has a significantly greater mean eye diameter of 2.4", with a range of 2" to 2.7". The Type III hoe, like Type II, has a mean eye diameter of 2.4", with a range of 2.1" to 2.8".

Angle of blade to haft partially determines the efficiency of a hoe for its specific agricultural function. Agricultural historian William Tatham, when discussing weeding hoes, mentions that "the eye is formed more bent and shelving than the latter [hilling], so that it can be set upon a more acute angle upon the helve at pleasure, by removing the wedge" (Tatham: 13-14).

In theory, the collar of the grubbing hoe should be set at nearly a right angle to the blade in order to provide vertical force for breaking ground; the collar of the hilling hoe should be set at a smaller angle than the grubbing hoe, in order for the blade to penetrate and carry the soil to the hill; and the weeding hoe's blade should be set at a more acute angle than either the grubbing or hilling hoe to direct force vertically down but also under the weed roots. All complete and unbent hoes in the collection were measured for the angle between the collar and blade. Mean angle measurement was 83° for 5

grubbing hoes, 77° for 4 hilling hoes, and 73° for 8 weeding hoes. Although the sample size of 17 hoes is small, the results of the measuring procedure support the above hypothesis.

Hoe Seriation

A hoe seriation chart (Fig. 28) illustrates the contextually dated hoes from the Kingsmill, Carter's Grove, Governor's Land, and Flowerdew Hundred collections, and includes the three types of plantation hand hoes used throughout the colonial period. Numbers in the middle of each bar represent the number of hoes of a particular type that relate to a particular period. Each hoe was placed in a general time range based upon its archaeological association with datable artifacts. The three type definitions are chronologically significant, providing a general date for hoes found archaeologically in tidewater Virginia.

Additional information not included in the seriation chart was provided by the study of 23 identifiable agricultural hoes uncovered during 1978 VRCA excavations at Bennett Farm in Poquoson, Virginia, a site dating to ca. 1677. Nine of the Bennett Farm hoes were Late Type I, the other 14 were Type II, suggesting that this latter type had started its rise to popularity by the beginning of the fourth quarter of the seventeenth century.

Hoe Repair

Of nine hoes in this study that show repair, seven are of Type I and two are of Type II. Although no repaired Type III

hoes occurred, blacksmith accounts from the last half of the eighteenth century indicate that repairs were indeed made to this later type. Apparently in the seventeenth century and in the first quarter of the eighteenth century planters valued metal implements, and would mend rather than discard an old or broken hoe.

In repairing hoes, it was essential to heat the pieces of metal to be welded to the proper temperature, or until the metal became pasty. After dipping in flux, the pieces bonded with a little pressure or a few hammer blows (Gill 1965: 92-97). Since it was difficult for a blacksmith working alone to handle rapidly enough the hammer and both sets of tongs which held hot metal, the hoe parts often were riveted together first before welding them (Figs. 29, 31).

It was common for hoes to break where the collar met the blade. In Francis Jerdone's letter dated September 1758 he wrote about structurally weak narrow hoes received from Tappenden and Hanbey (Jerdone 1756-1763).

Some time ago I received by our favour of Nov. the 1st by Capt. Archbald Crawford with the 10 dozen of narrow pattern hoes; which I am sorry to say did not answer my expectations, nor did those you sent me formerly; the maker having not regarde the pattern in putting on the Eyes, as scare one in a doz. will hold out working a whole day before it breaks off; which was a very great disappointment to me as well as a loss; I beg leave to trouble you again to get 3 doz. made with Eyes exactly the same as grubbing hoes: the blades to be made as the others were and to be kept up to the full breadth and length and made tapering from the shoulder to the Edge, with a pound of steel in each, if these answer, I shall order a much larger parcell another year.

Jerdone's request that the narrow hoes be made "with a pound of steel in each" probably meant that a pound of steel should be added to the blade of each hoe to produce a more durable blade with a harder edge. Many Type II and some Type III hoes have laminated blades that could represent the steeling of wrought iron hoe blades.

In the collection studied, two Type II hoes that broke across the neck area were repaired by lap welding (Fig. 29). The metal remaining in the collar and neck area of one appeared to have been drawn out to form a flap that was lapped over the blade before welding (Fig. 29, bottom center; Fig. 32). In the second, a third piece of metal was introduced to bridge the gap between the collar and blade before welding (Fig. 29, top center). Examination of a repaired Early Type I hoe from Flowerdew Hundred Plantation revealed it was strengthened by adding a plate across the entire upper surface of the blade.

The process of resteeing the worn edge of an implement was termed "laying" (Gill 1965: 88-89). The laying of worn blades was frequently mentioned in blacksmiths' records concerning plantation hand hoes. Excerpts from Edward Ambler's estate account with James Dabney refers to repairing and lay hilling hoes (Dabney 1744-1940):

1769	To laying 5 hilling hoes 7/6 making	(<i>£. s. d.</i>)
Febry. 1	3 do. 6/ & 47½ lb. iron @ 4d. 15/10	1..9..4
1770	To mending 1 hilling hoe eye &	
April 22	Beating out 1 do. 6d.	0..0..6
April 26	To making 2 hilling hoes 4/laying	
	1 do. 1/6 & 21½ lb. iron 7/2	0..12..8

Invoice

1 Doz. welded Eyed Broad hoes No. 4
 1 Doz. Ditto. No. 3
 6 Lopping Axes

The last hoes & axes my Father had from Mr. Sharp was very indifferent particular those marked IM and all the axes.

The digits "1" and "4," perhaps referring to blade size, occur frequently in maker's marks (Fig. 35). Hoes were ordered by number, the number referring to the hoe width within each category. An increase in the number indicated an increase in the hoe width. The grubbing hoes section of an 1880 Sargent and Company tool catalog serves as illustration (Appendix D).

A large selection of numbered narrow hoes was available at William Allason's store in 1766, having been purchased from the English firm of Theodosia Crowley (Allason 1764-1766: fol. 40):

	[Size Number]	[Number on Hand]	[Unit Price]	[Total Value]
				(£ . s . d .)
	No. 1 small	6	13/	0..6..6
	1 large	2 doz. 2	19/	2..1..2
Hoes...	2	7 doz. 6	19/	7..2..6
Narrow	2 large	2 doz.	21/	2..2..0
	3	3 doz.	21/	3..3..0
	4	6 doz. 1	23/	6..19..11
	5	6 doz. 9	25/	8..8..9
	6	1 doz. 10	27/	2..9..6

In the same year Charles Yates purchased broad hoes from Crowley (Allason: fol. 29):

	No.			(£ . s . d .)
	1	3	18/	0..4..6
Hoes..	2	2 doz. 1½	21/	2..4..7½
Broad	3	6 doz. 1½	23/	6..18..0
	4	1 doz. & 2	26/	1..10..4

Crowley, one of the major tool companies in England, supplied hoes to Virginia through the Glasgow Merchants. Presumably Crowley's patterns and hoes were of a higher quality of workmanship than those produced by competitive companies (Appendix E).

Initial

The purpose of the initial, which appears occasionally lightly stamped or etched into the blade (never on the spine), is uncertain. The initial may represent the English merchant or distributor of the hoe (Figs. 39, 40). Three initials, R, M, and C, have been found on eight hoes from Kingsmill:

ca. 1720 hoes

- R Type II narrow hoe; "S" maker's mark; KMLX.
- M Type II narrow hoe; "M" maker's mark; KMLX.
- C Type II narrow hoe; "IR" maker's mark in a square strike mark; KMLX.
- R Type II narrow hoe; "S" maker's mark in a heart strike mark; KMLV.
- M Type II broad hoe; "B" maker's mark, KMLX.
- R Type II broad hoe; "B" maker's mark, KMLX.
- C Type II broad hoe; "IK" maker's mark in a rectangular strike mark; KMLX.

Post 1740 Hoe

- C Type III broad hoe; "P" maker's mark in a square strike mark; KML51C.

CHAPTER III: HOE EVOLUTION

As plantation agriculture in Virginia evolved through the seventeenth and eighteenth centuries, the preference for different hoe styles changed (Table 1). Weeding hoes, the most numerous style, show a steady increase in popularity between 1620 and 1780, from 44% for Early Type I to 91% for Type III. Conversely, grubbing hoes, never an abundant style, declined in preference from 22% to 3% during the same time span. The two sprouting hoes that occurred were Early Type I. They were not encountered again on the plantation sites sampled. Only three hilling hoes were identified, the earliest of which were excavated from an archaeological context of ca. 1690. A specific narrow hoe shape (Figs. 16, 20), which functionally could be used as either a grubbing or hilling hoe but was not clearly assignable to either style, was most popular from ca. 1650-1740.

	Early Type I 1620-1650		Late Type I 1650-1675		Type II 1675-1740		Type III 1740-1780	
	No.	%	No.	%	No.	%	No.	%
Grubbing	2	.22	3	.17	5	.07	1	.03
Sprouting	2	.22						
Hilling			1	.05			2	.06
Narrow	1	.11	6	.33	15	.21		
Weeding	4	.44	8	.44	50	.71	32	.91
Total	9	.99	18	.99	70	.99	35	1.00

Table 1. Frequency of hoe styles from 1620 to 1780 based on evidence from Carter's Grove, Flowerdew Hundred, Maycock, Kingsmill and Governor's Land.

Unquestionably, grubbing hoes, or hoes which could function in such a manner, were most prevalent in the seventeenth and first quarter of the eighteenth century when the Colonists were first breaking the soil, before the advent of the plow. Weeding hoes, which also could be used for hilling, became increasingly abundant during the eighteenth century, and adequately performed the cultivating function through most of the century. During the late eighteenth and nineteenth centuries, the ground breaking and cultivating functions of plantation hand hoes gradually were replaced by the plow.

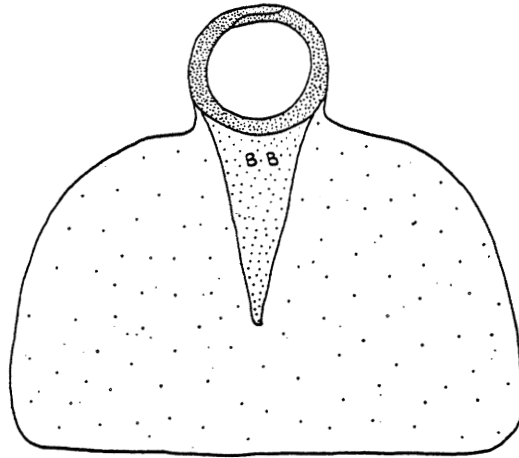
The first eighteenth century plow hoes were pushed by one man and pulled by another between rows of crops to clear away unwanted growth (Partridge 1973: 69). Eventually the plow hoe was pulled by a horse. Virginia planters were slow to recognize the value of the plow hoe because it was expensive and because the planters engaged in slave-based labor, with its attendant use of traditional hand-held farm implements (Gray 1941: 194-195). Only when labor became increasingly expensive after the Revolutionary War did planters frequently turn to the more efficient horse-drawn plow.

The Chillington Tool Company of England today manufactures and exports plantation hand hoes to many developing nations that cannot afford modern plow agriculture or that have an excess of inexperienced labor. Among the Chillington hoe patterns are examples nearly identical to hoes found archaeologically in Virginia dating to the last half of the eighteenth century (Appendix F). Chillington's marketing policy is to produce the

hoe the farmer requires, rather than educate him to use the tool they offer (Appendix G). This policy has applied in Tanzania, for example, where the local communities had formed their own idea of the hoe styles needed to suit their own particular conditions. Local blacksmiths made the tools by a laborious hand process until growth in population made location of other hoe sources imperative. After studying the problem, the Chillington Tool Company decided to manufacture the patterns used in the various districts of Tanzania. Although there is no documentary evidence, the same policy may have been followed by English tool firms in the seventeenth and eighteenth centuries when they marketed hoes for North America.

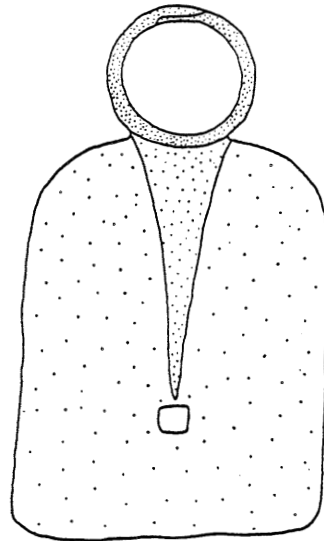
The plantation hand hoe which evolved in the seventeenth and eighteenth centuries in this country in response to tobacco agriculture and a slave economy is still evolving today to meet local needs throughout the world. It continues to be as important a feature of the material culture of developing nations as it was in the formative years of the Virginia colony.

BROAD HOE



ca.1750

NARROW HOE



ca.1750

Figure 3. Type III weeding and hilling hoes illustrate the two basic hoe shapes, broad and narrow.

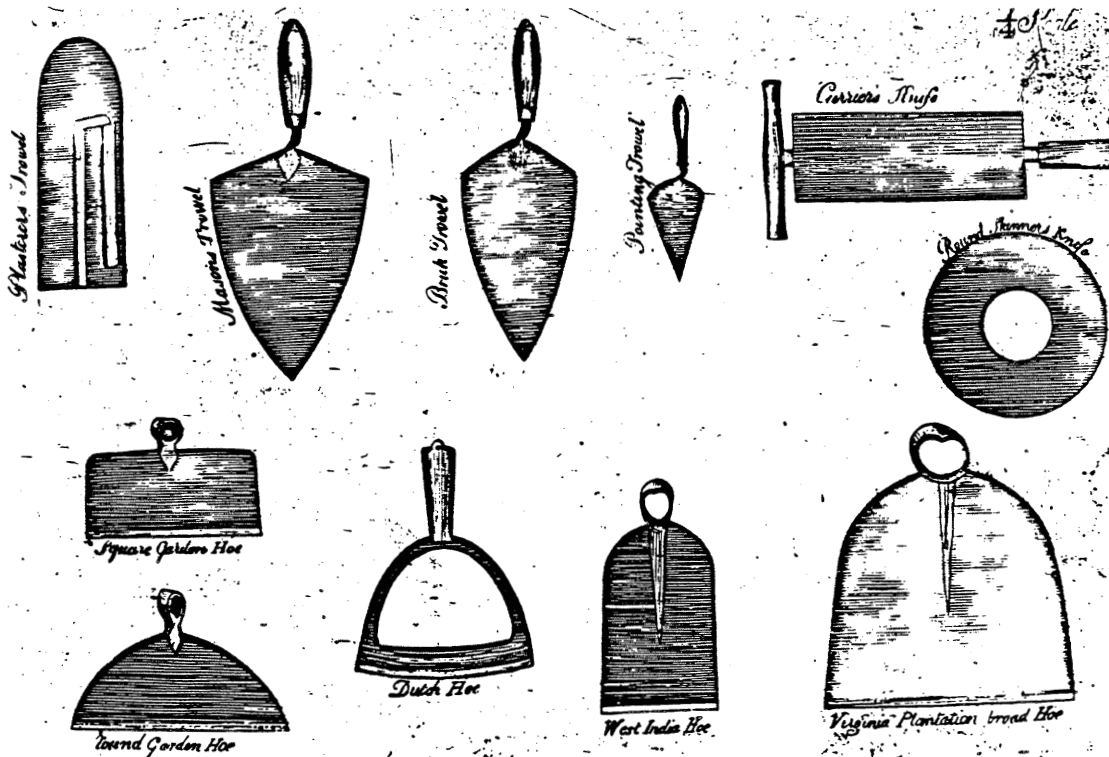


Figure 4. Portion of a tool catalog published by J. Holyoake and J. Corbett in 1799 or later. Essex Institute Sample book (672/519/v.1)

HOE NOMENCLATURE

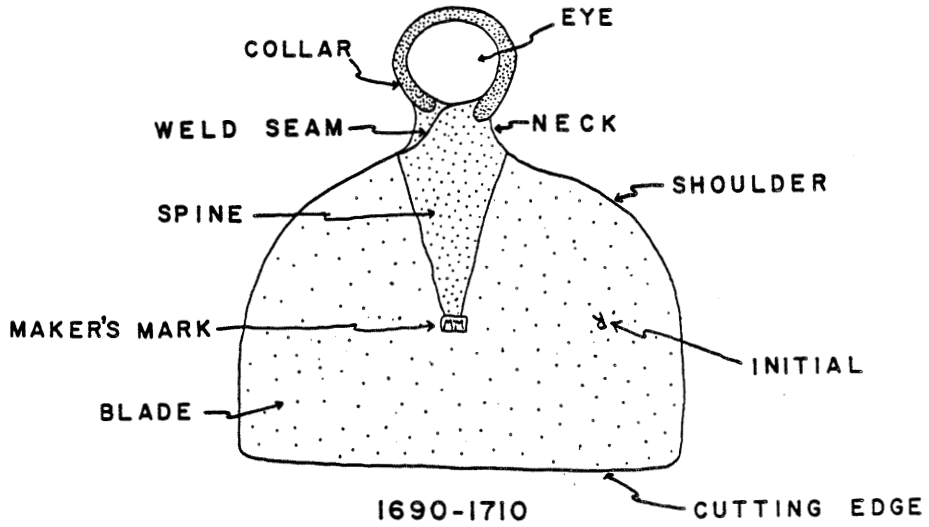


Figure 5. Hoe nomenclature illustrated on front view of a Type II broad hoe.

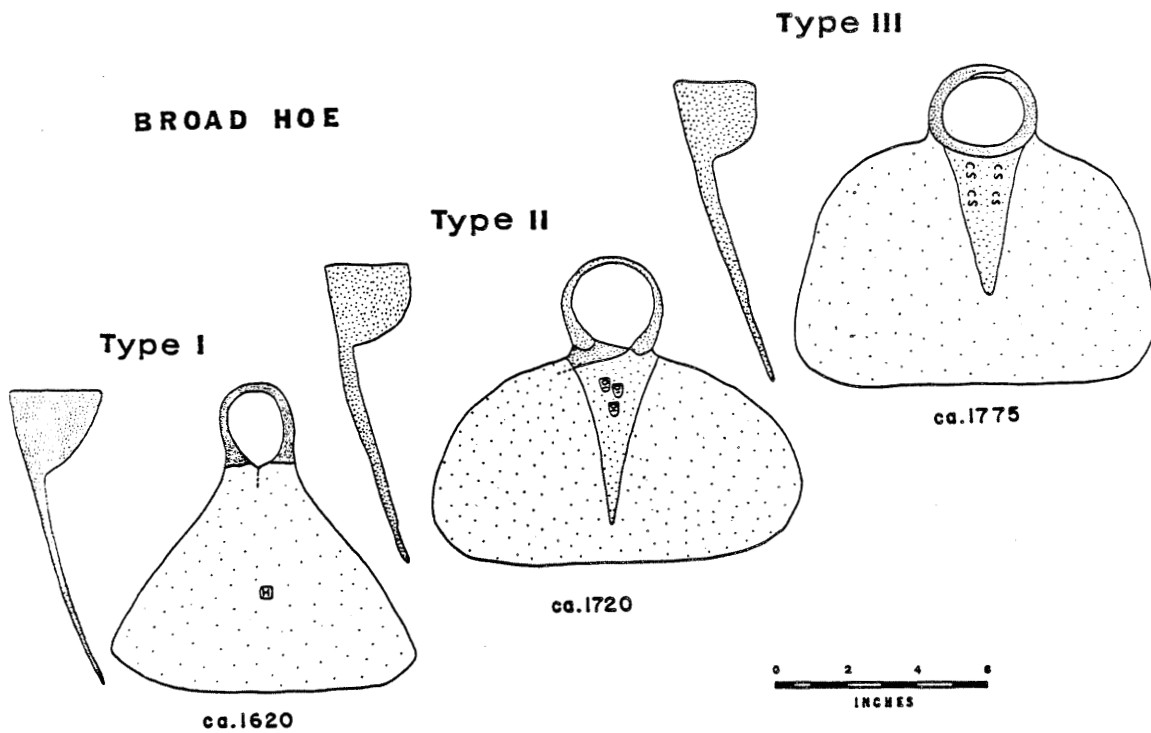


Figure 6. Chronological typology of broad hoes.

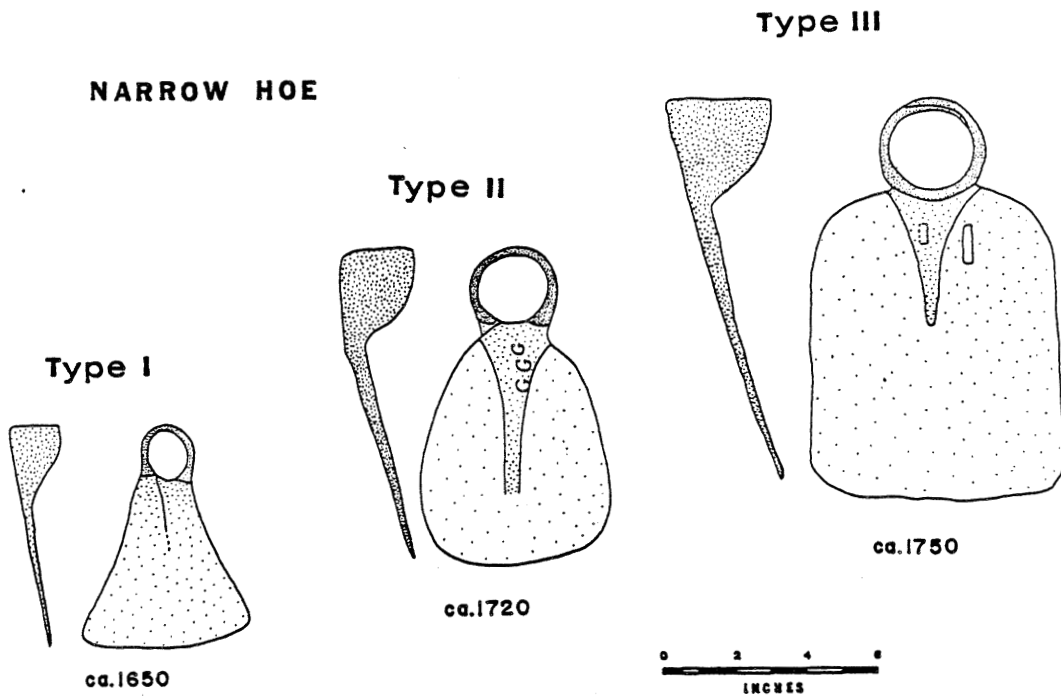


Figure 7. Chronological typology of narrow hoes.

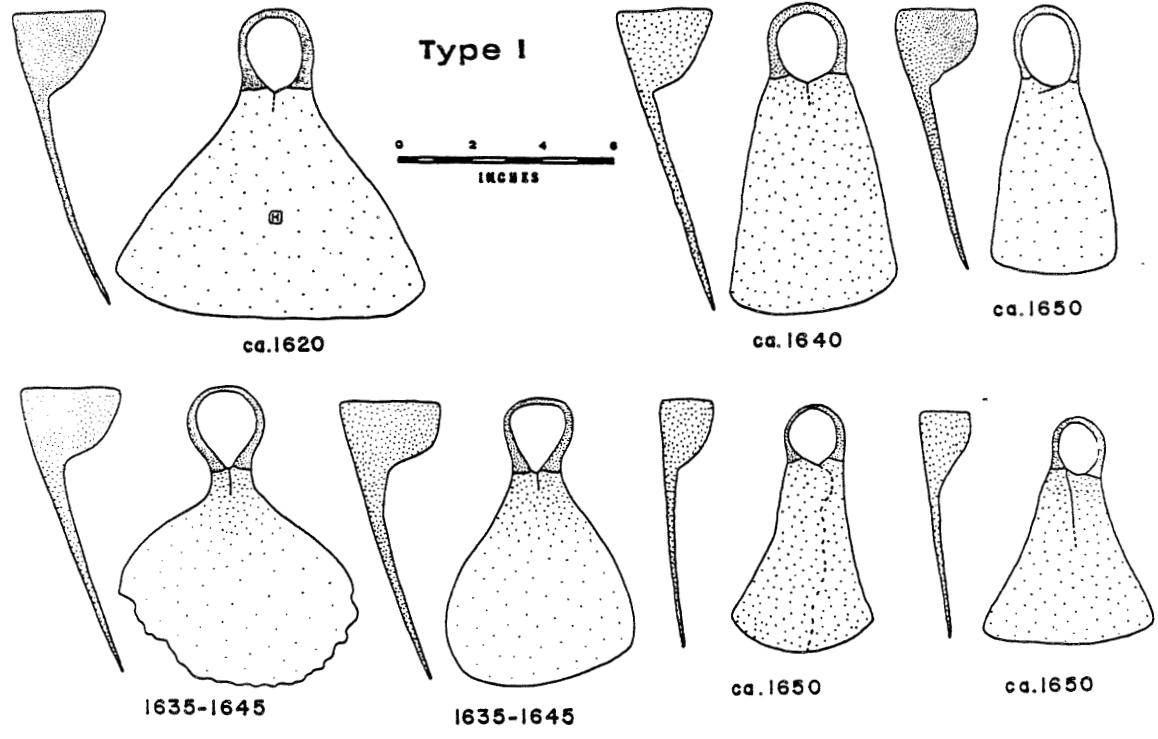


Figure 8. Early Type I broad and narrow hoes. Weeding hoe at top left, grubbing hoe top center, and sprouting hoe at top right.

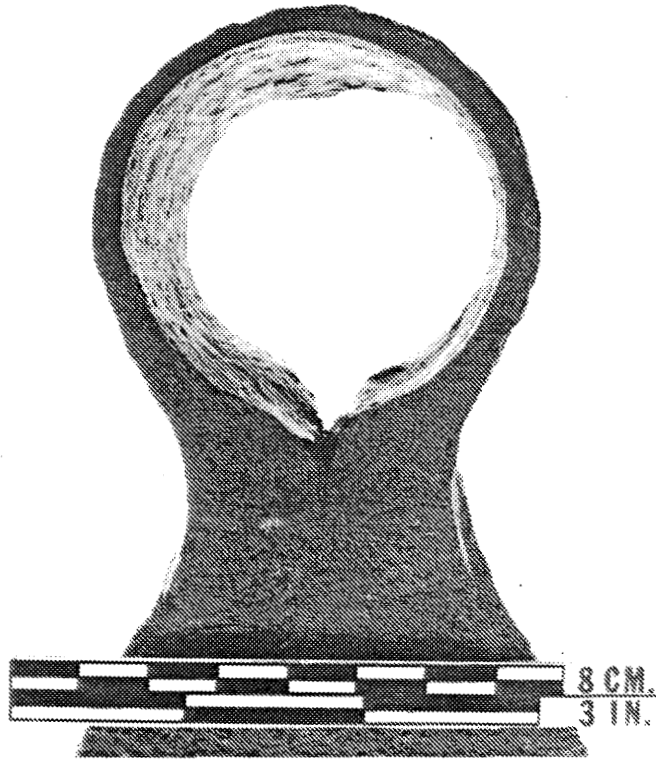


Figure 9. Joint weld seam in Type I hoe. Back view of hoe collar.



Figure 10. Joint weld seam on a different example of Type I hoe. Front view of hoe collar.



Figure 11. Early Type I bell-shaped hoe blade.



Figure 12. Late Type I grubbing hoe with lap weld, lacking a spine.



Figure 13. Late Type I hoe with joint weld seam and spine.

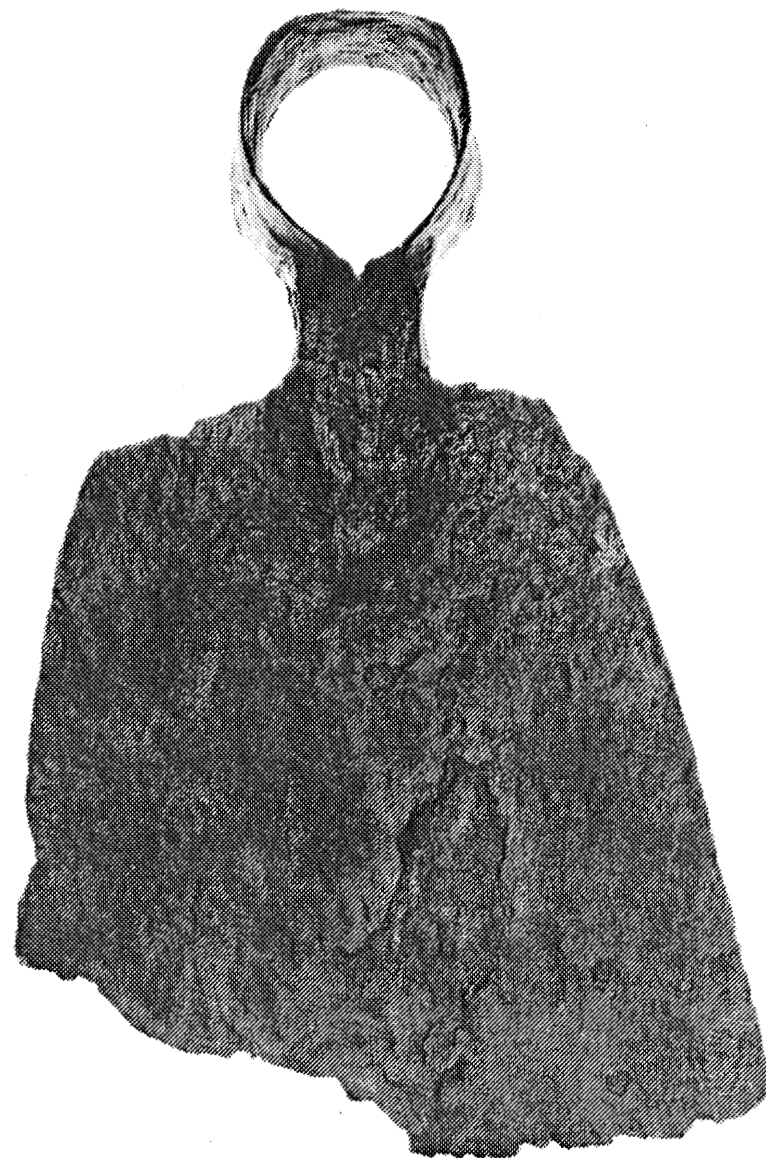


Figure 14. Late Type I hilling hoe with joint weld seam and rudimentary spine.

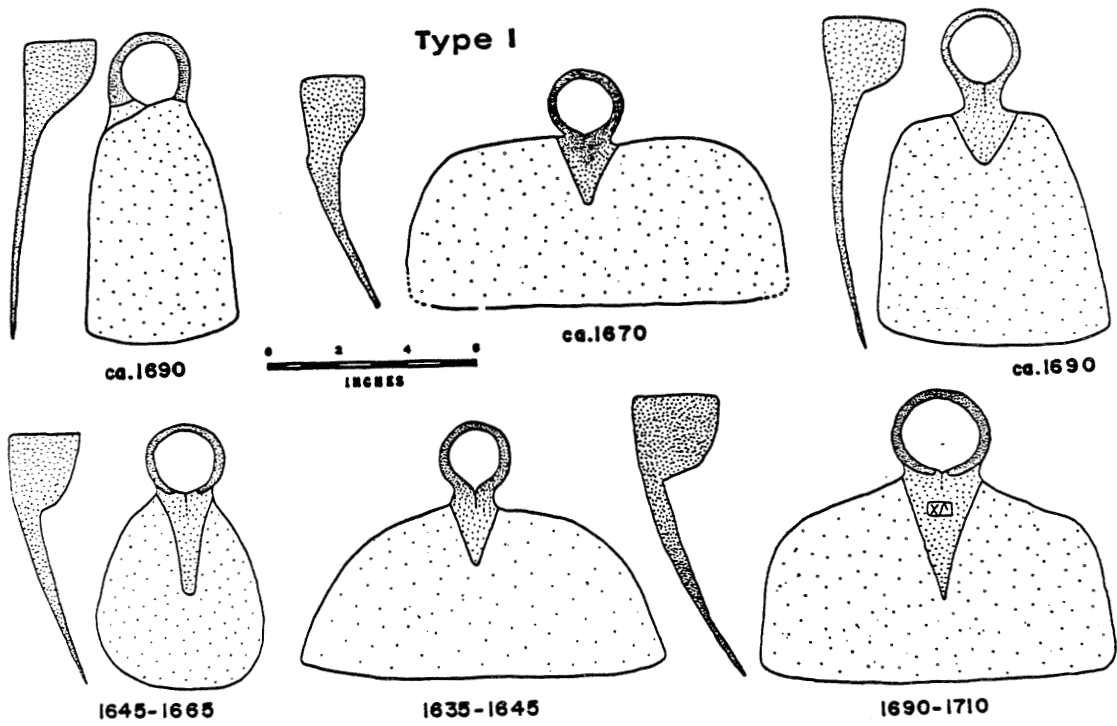


Figure 15. Late Type I broad and narrow hoes. Weeding hoe at bottom center was found in an earlier-than-expected archaeological context.

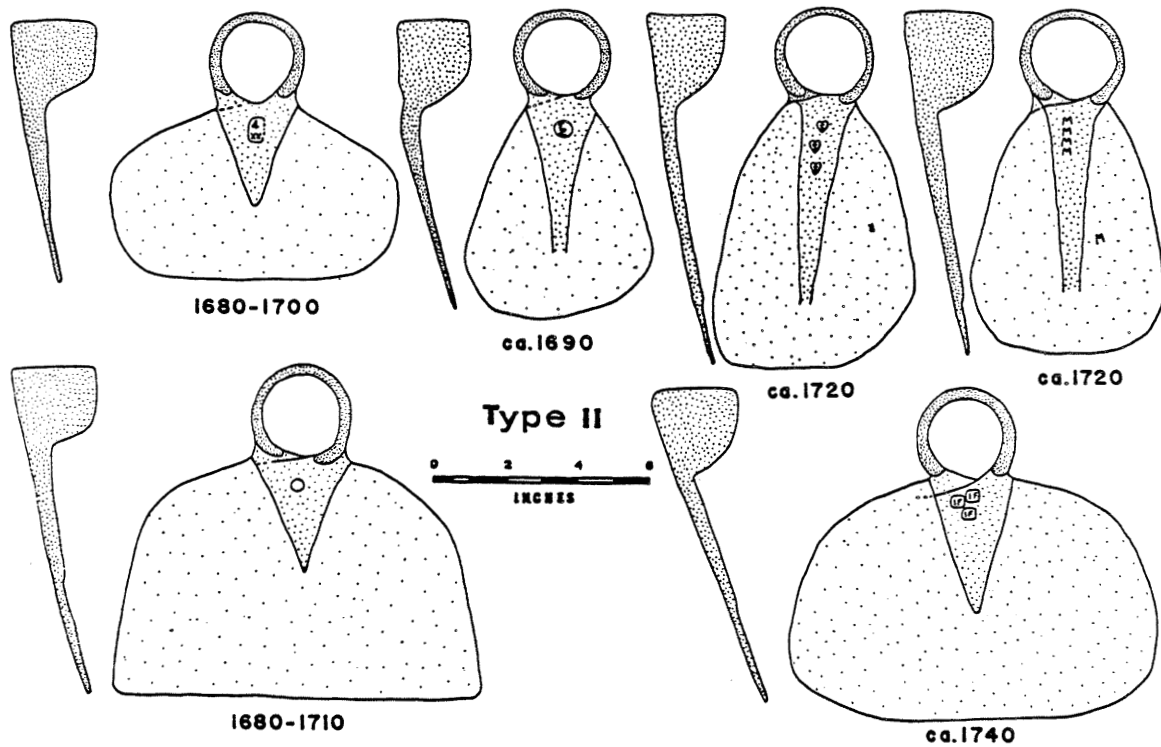


Figure 16. Type II broad and narrow hoes.



Figure 17. Lap weld seam in Type II hoe.
Front view of hoe collar and spine.



Figure 18. Lap weld seam on the same hoe as
Figure 17. Back view of hoe collar.

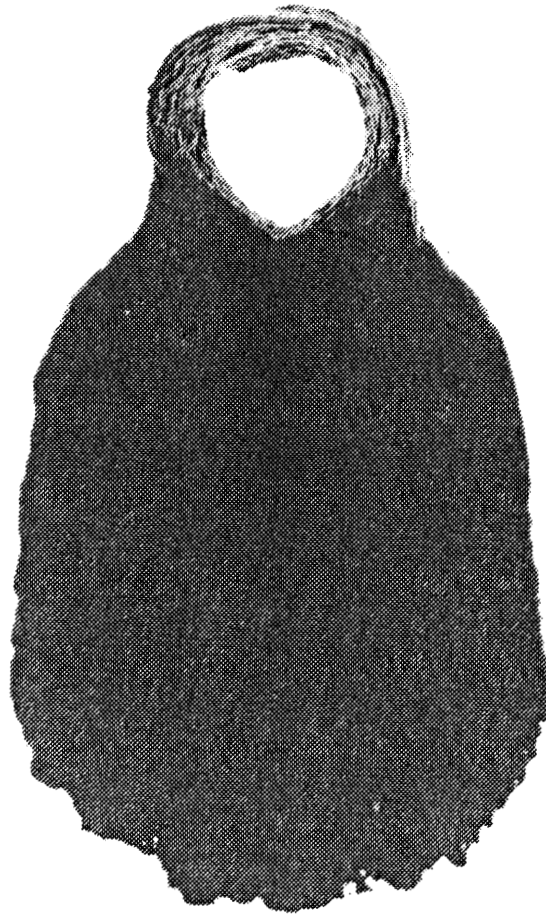


Figure 19. Type II grubbing hoe with lap weld seam to the right, and gradually tapering spine. Note the heavy reinforced collar.

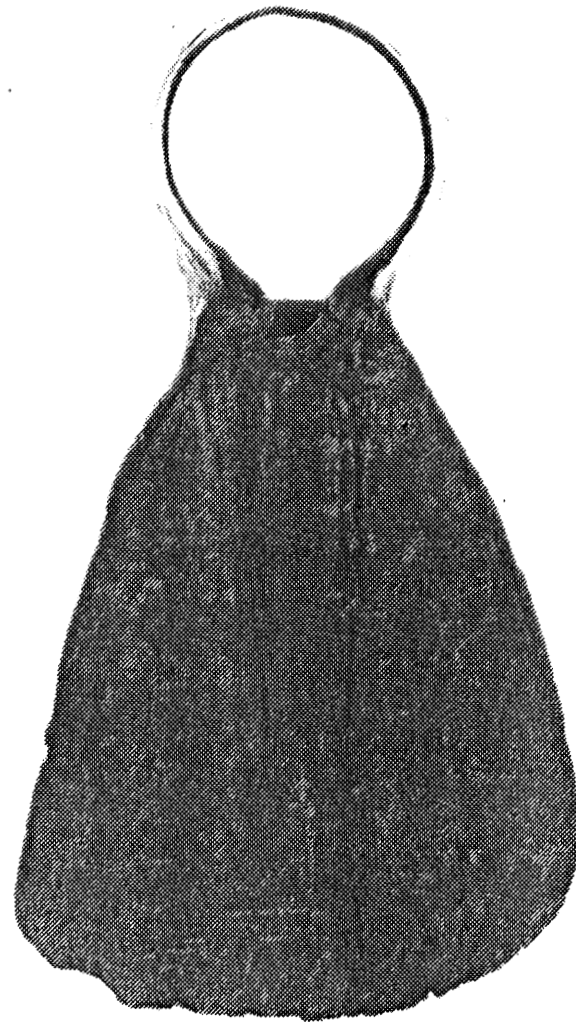


Figure 20. Type II hoe.

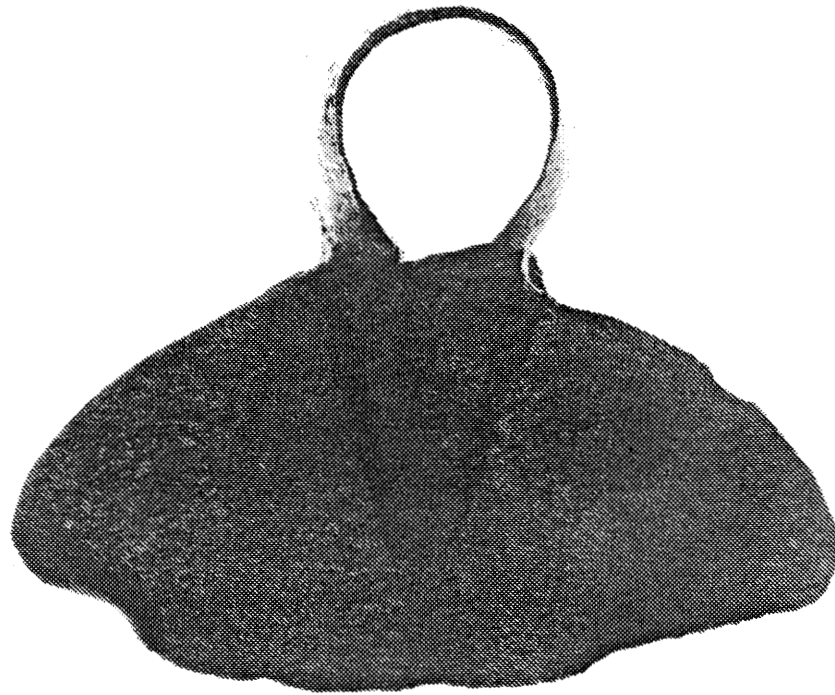


Figure 21. Type II weeding hoe with excessively worn edge.

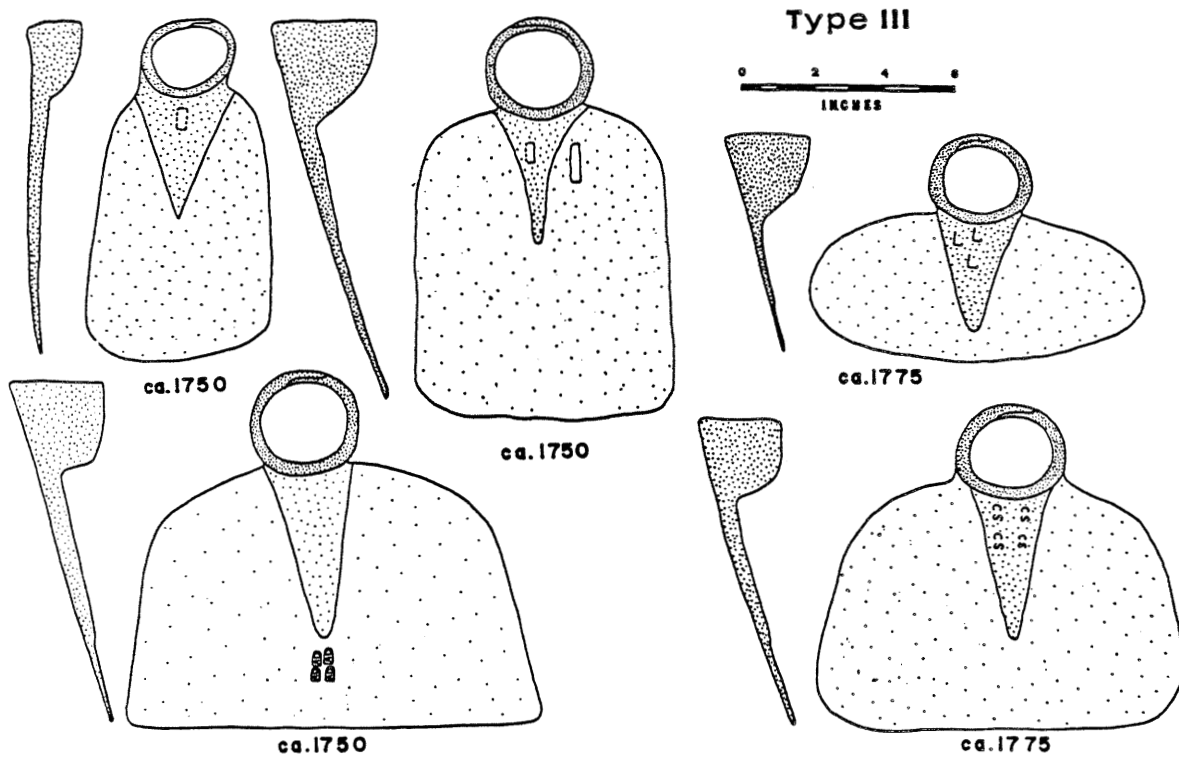


Figure 22. Type III broad and narrow hoes. Grubbing hoe at top left, hillling hoe at top center, and turnip hoe at top right.

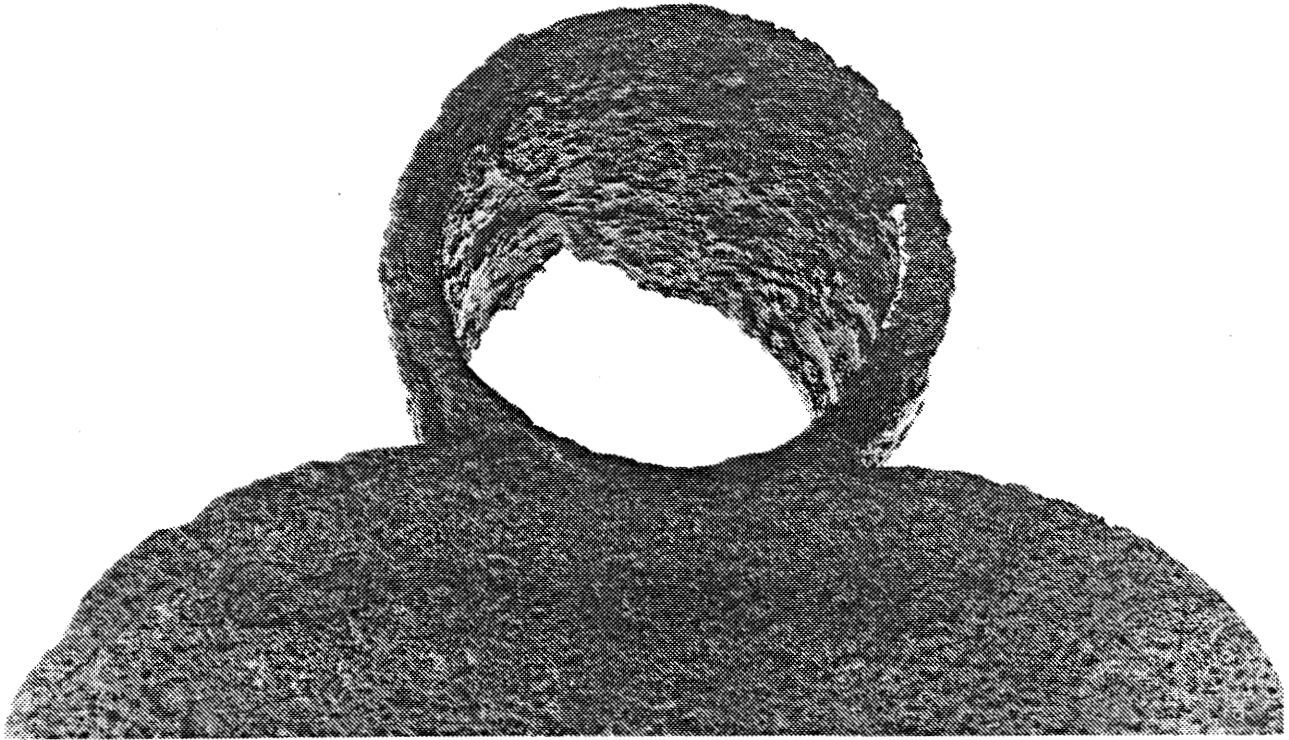


Figure 23. Lap weld seam in top of collar on Type III hoe.
Back view of hoe collar.



Figure 24. Lap weld seam in top of collar on the same example
of a Type III hoe. Front view of hoe collar.

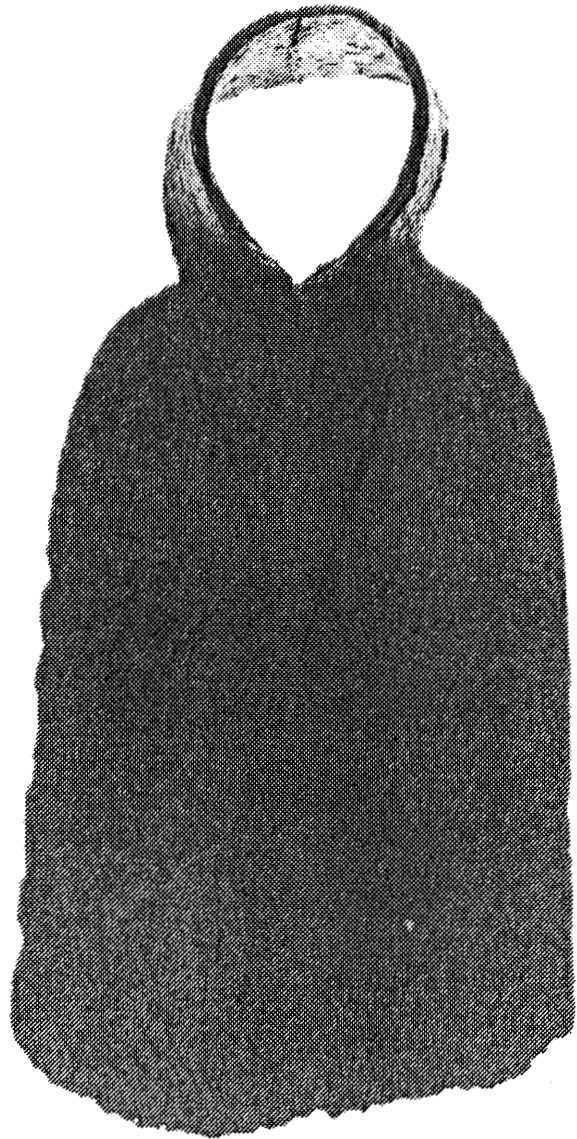


Figure 25. Type III grubbing hoe.



Figure 26. Type III hilling hoe.

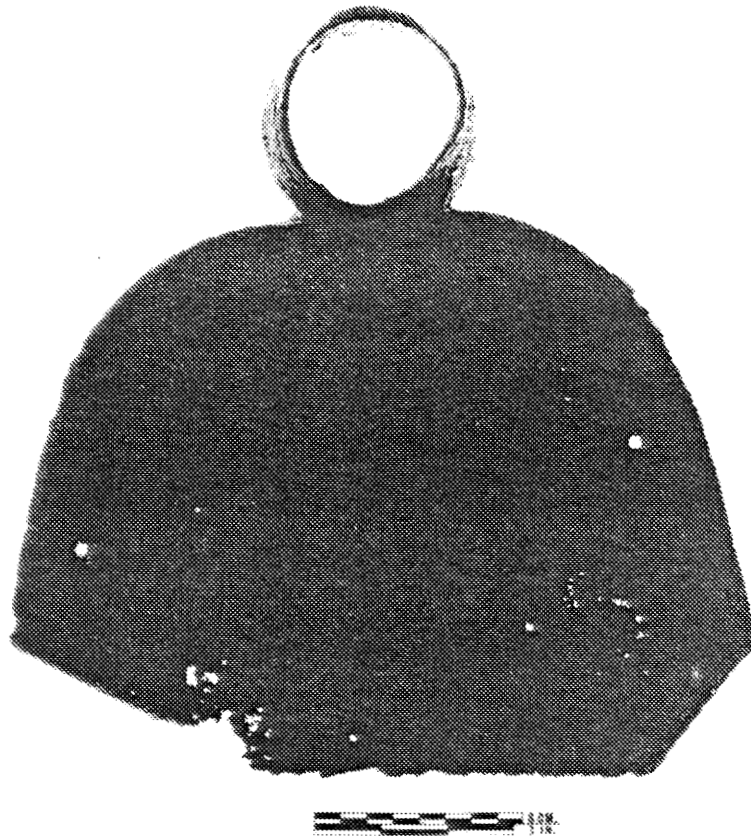


Figure 27. Type III weeding hoe. The hoe, lacking a spine and with its collar ineffectively attached to the blade, is structurally weak.

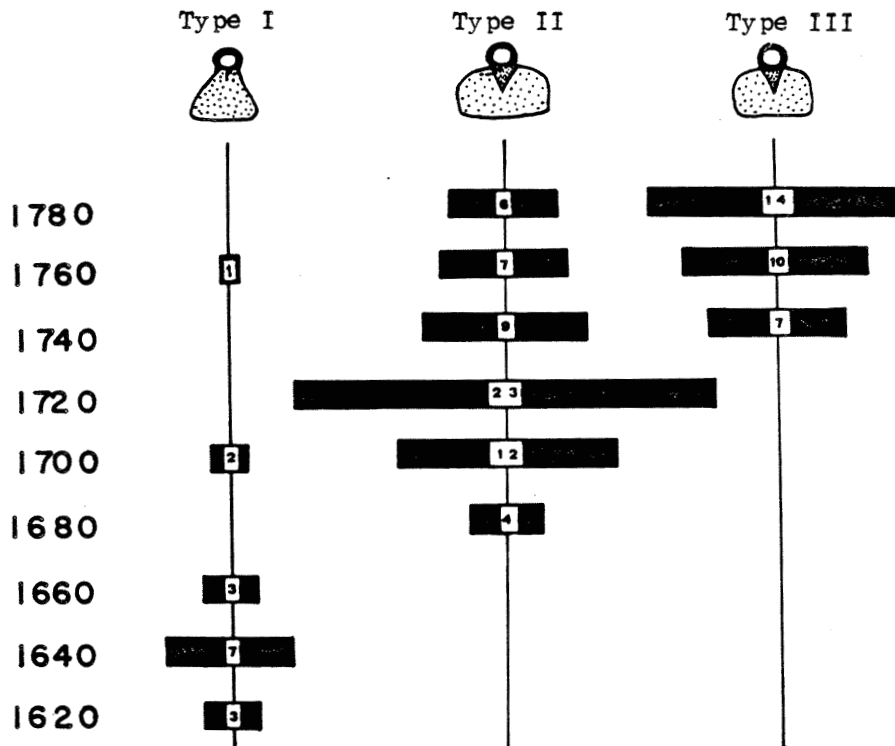


Figure 28. Seriation chart of contextually dated hoes.

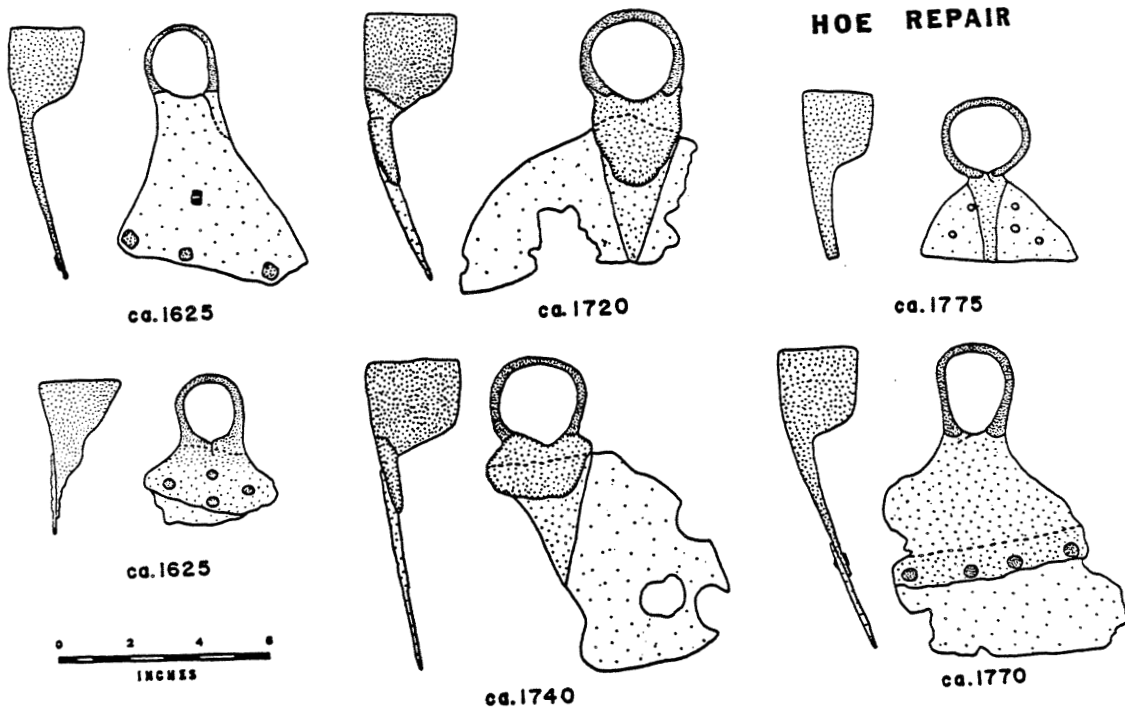


Figure 29. Hoe fragments illustrating hoe repair. Hoes at the top and bottom center show lap welding; the rest represent riveting before welding.



Figure 30. Resteeled worn edge of hoe. Resteeled seam is visible near bottom edge of hoe.



Figure 31. Type I bell-shaped hoe, blade repaired with rivet technique.



Figure 32. Type II hoe, neck repaired with a lap weld.

Type I

MAKER'S MARK



ca. 1620



1690-1710



Figure 33. Three makers' marks from Type I hoes.

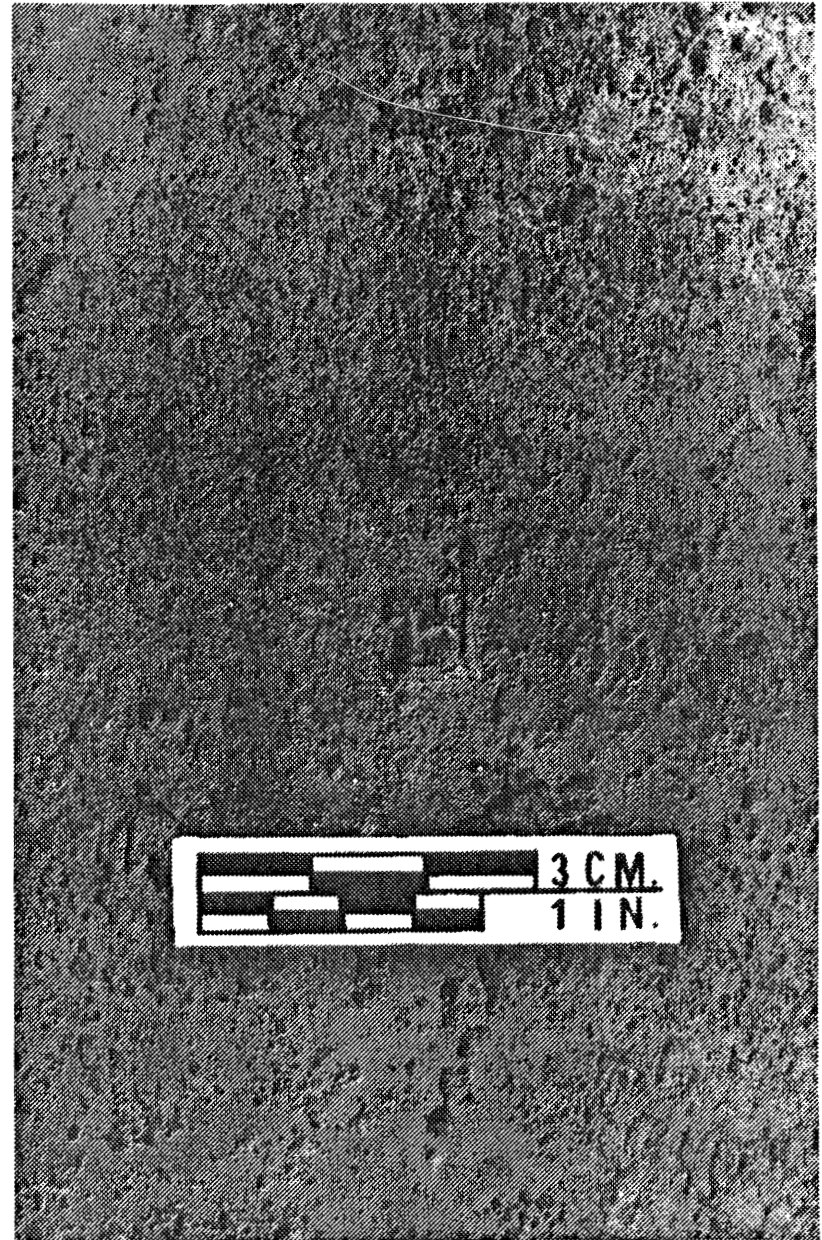


Figure 34. "H" maker's mark from Type I hoe.

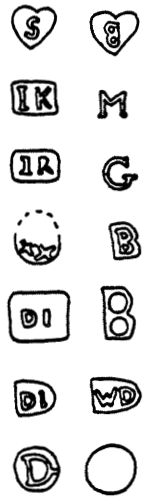
Type II

1680-1710

MAKER'S MARK



ca. 1720



1740-1780



Figure 35. Makers' marks from Type II hoes.

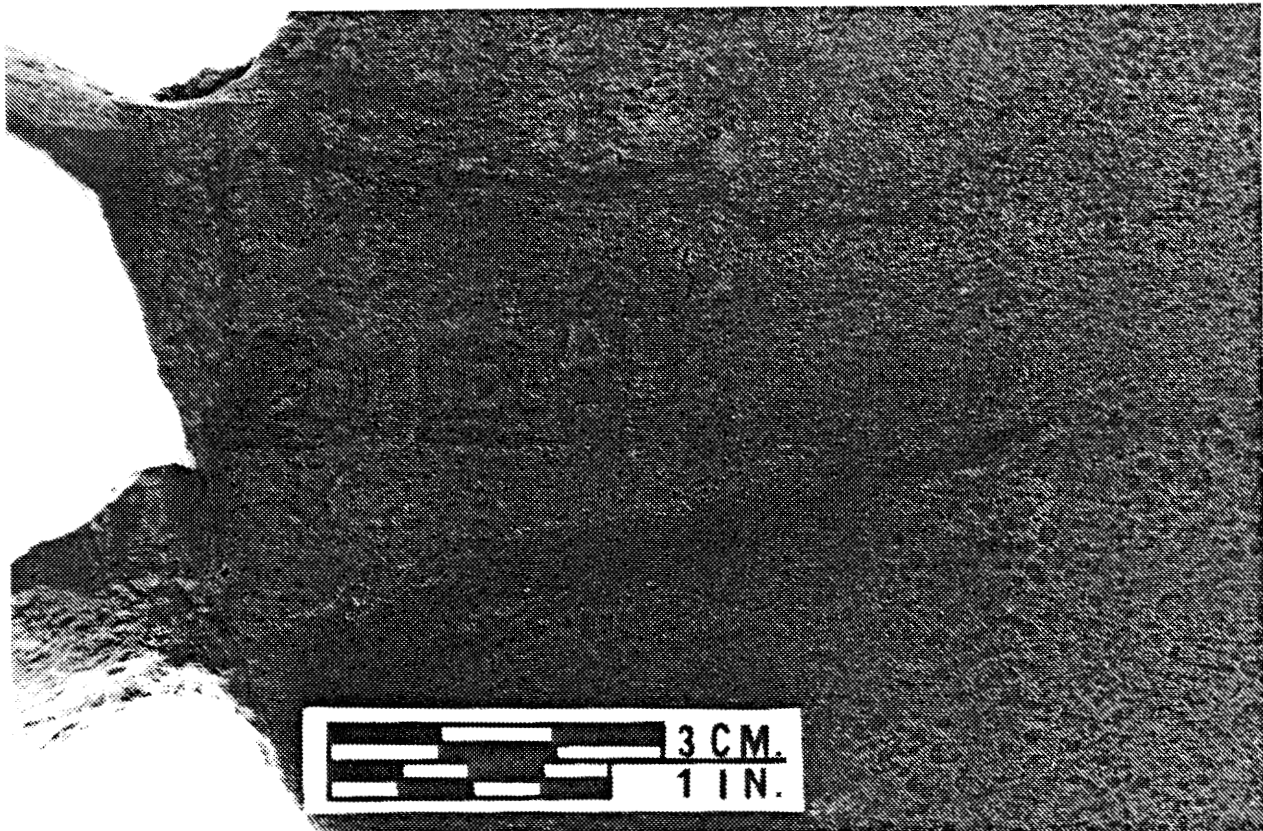


Figure 36. "DI" maker's mark from Type II hoe.

Type III

MAKER'S MARK

POST 1740



1750-1775



POST 1770



1740-1760



CS



Figure 37. Makers' marks from Type III hoes.

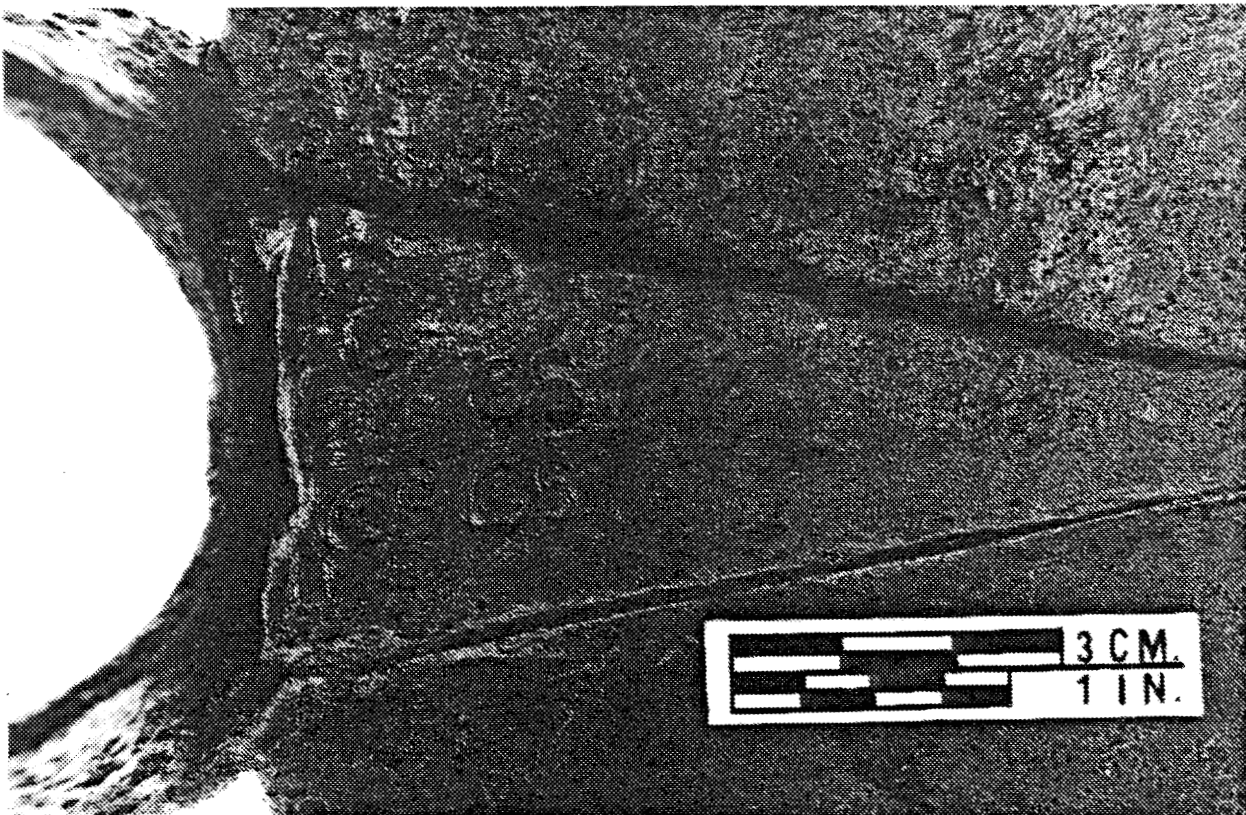


Figure 38. "CS" maker's mark from Type III weeding hoe.

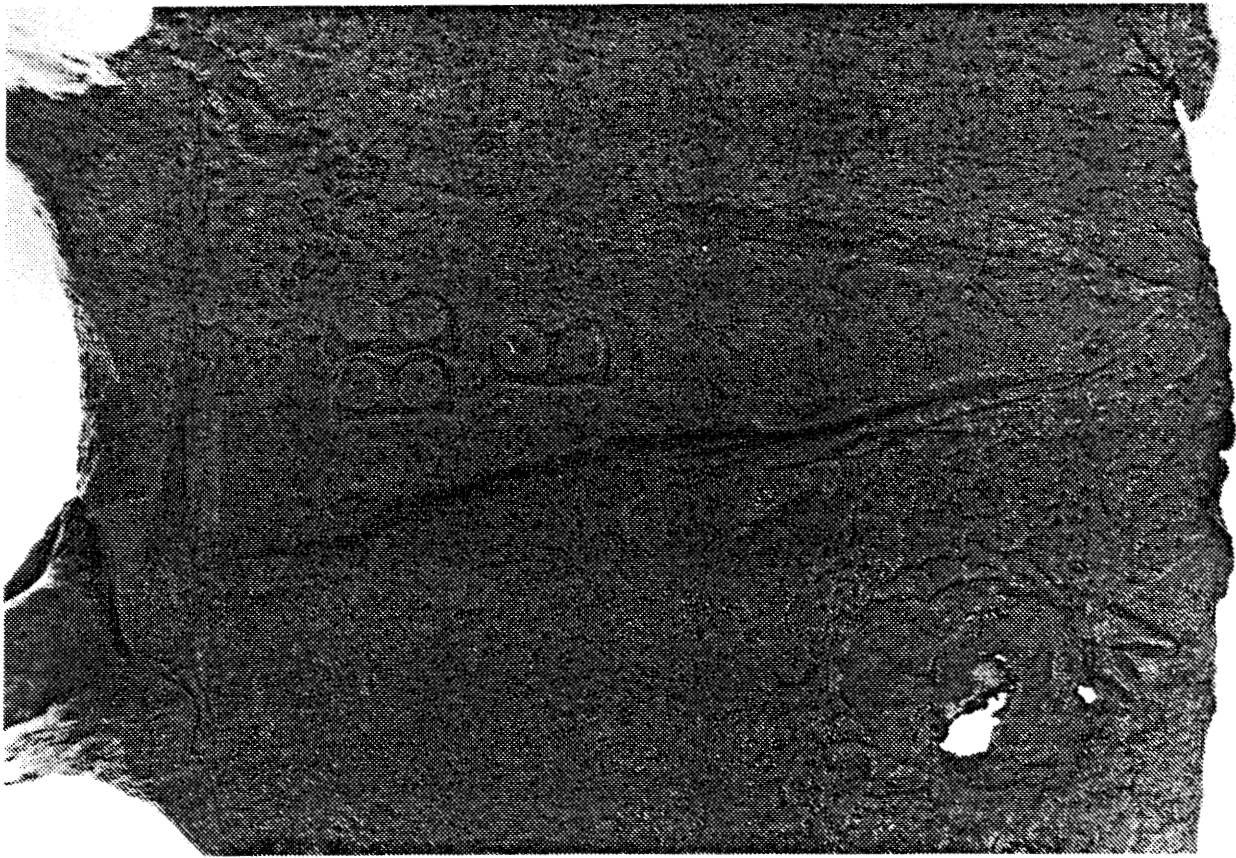


Figure 39. "M" initial on Type II weeding hoe blade.



Figure 40. "C" initial on Type II narrow hoe blade.

APPENDIX A

In the following detailed description of illustrated hoes it is occasionally impossible to identify hoes as grubbing, sprouting, hilling, or weeding. In some cases where the hoe is missing a portion of its blade through corrosion, the illustrated drawing has been restored to represent the entire hoe. Only when the hoe is present in a relatively uncorroded condition is the weight of the hoe given, reflecting as nearly as possible its original manufactured weight.

Figure 3

Broad Hoe. Type III weeding hoes: illustrated shape has been restored, excavated hoe has slightly corroded edges; blade $10 \frac{3}{4}$ "w. x $6 \frac{3}{4}$ "h.; maker's mark "B" stamped two times; 2 lbs. 13 ozs.; Kingsmill, Bray Field, archaeological context of 1740 to 1760; KM494A.

Narrow Hoe, Type III hilling hoe: illustration exact shape of hoe; blade $6 \frac{1}{2}$ "w. x $8 \frac{1}{2}$ "h.; maker's mark indistinguishable in a square strike mark; 2 lbs. 13 oz.; Kingsmill, Kingsmill Quarter, archaeological context of ca. 1750; KM363B.

Figure 5

Broad Hoe, Early Type II weeding hoe: illustrated shape has been restored, excavated hoe has left half of collar missing; "R" has been added in figure to illustrate an initial; blade $9 \frac{3}{4}$ "w. x 8"h.; maker's mark "W.W" in a rectangular strike mark; Kingsmill, Pettus Plantation, archaeological context of 1690 to 1710, KM72A.

Figure 6

Broad Hoe, Type I weeding hoe: illustration exact shape of hoe; blade $8\frac{1}{2}$ "w. x $6\frac{1}{2}$ "h.; maker's mark "H" in a square strike mark; 2 lbs. 1 oz.; Flowerdew Hundred Plantation, archaeological context of ca. 1620; PG3/319K3-1.

Broad Hoe, Type II weeding hoe: illustrated shape has been restored, excavated hoe has slightly corroded edges; blade is $10\frac{1}{2}$ "w. x 6"h.; maker's mark is "DI" in a rectangular strike mark with rounded end, stamped three times; Kingsmill, Harrop Well, archaeological context of ca. 1720; KMLX.

Broad Hoe, Type III weeding hoe: illustration exact shape of hoe; blade $10\frac{1}{2}$ "w. x 7"h.; maker's mark "CS" stamped four times; Kingsmill, Kingsmill Quarter, archaeological context of post 1770; KM400D.

Figure 7

Narrow Hoe, Type I: illustrated shape has been restored, excavated hoe has slightly corroded edges; blade 5"w. x $4\frac{3}{4}$ "h.; Flowerdew Hundred Plantation, surface find, occupational context of 1620 to 1650; PG3/-189.

Narrow Hoe, Type II: illustration exact shape of hoe; blade $5\frac{1}{2}$ "w. x $6\frac{1}{2}$ "h.; maker's mark "G" stamped three times; 1 lb. 15 ozs.; Kingsmill, Harrop Well, archaeological context of ca. 1720; KMLX.

Narrow Hoe, Type III hilling hoe: illustration exact shape of hoe; blade $7\frac{1}{4}$ "w. x 9"h.; maker's mark indistinguishable in two rectangular strike marks; 3 lbs. 8 ozs.; Kingsmill, Kingsmill Quarter, archaeological context of 1740 to 1760; KM363A.

Figure 8

Top Left-Right

Broad Hoe, Early Type I weeding hoe: illustration exact shape of hoe; blade $8\frac{1}{2}$ "w. x $6\frac{1}{2}$ "h.; maker's mark "H" in a square strike mark; 2 lbs. 1 oz.; Flowerdew Hundred Plantation, archaeological context of ca. 1620; PG3/319K3-1.

Narrow Hoe, Early Type I grubbing hoe: illustration exact shape of hoe; blade $4\frac{3}{4}$ "w. x $6\frac{1}{2}$ "h.; 2 lbs. 2 ozs.; Maycock Plantation, archaeological context of 1625 to 1650; PG1/68U4H-7.

Narrow Hoe, Early Type I sprouting hoe: illustrated shape has been restored, excavated hoe has slightly corroded edges; blade 3 3/4"w. x 5 1/2"h.; 1 lb. 3 ozs.; Kingsmill, Kingsmill Plantation, archaeological context of post 1640; KM639R.

Bottom Left-Right

Broad Hoe, Early Type I: illustration exact shape of hoe; blade is incomplete; Carter's Grove Plantation, archaeological context of 1635 to 1645; CGER1735A.

Narrow Hoe, Early Type I: illustrated shape has been restored, excavated hoe has slightly corroded edges; blade is 5 1/2"w. x 6 1/2"h.; Carter's Grove Plantation, archaeological context of 1635 to 1645; CGER1739E.

Narrow Hoe, Early Type I sprouting hoe: illustrated shape has been restored, excavated hoe has corroded edges and may have been slightly longer; blade 3 3/4"w. x 5 1/2"h.; Flowerdew Hundred Plantation, surface find, occupational context of 1620 to 1650; PG3/-168.

Narrow Hoe, Early Type I: illustrated shape has been restored, excavated hoe has slightly corroded edges; blade 5"w. x 4 3/4"h.; Flowerdew Hundred Plantation, surface find, occupational context of 1620 to 1650; PG3/-189.

Figure 9

Narrow Hoe, Late Type I: lower portion of blade is broken off; Kingsmill, Pettus Plantation, archaeological context of 1680 to 1710; KM54G.

Figure 10

Broad Hoe, Late Type I weeding hoe: rudimentary spine; blade 10 1/2"w. x 5 3/4"h; maker's mark, partially indistinguishable, "X^" in a rectangular strike mark; Kingsmill, Kingsmill Quarter, archaeological context of 1690 to 1710; KM415A.

Figure 11

Broad Hoe, Early Type I weeding hoe: blade 8 1/2"w. x 6 1/2"h.; maker's mark "H" in a square strike mark; 2 lbs. 1 oz.; Flowerdew Hundred Plantation, archaeological context of ca. 1620; PG3/319K3-1.

Figure 12

Narrow Hoe, Late Type I: blade 5"w. x 5 3/4"h.; 1 lb. 7 ozs.; Kingsmill, Kingsmill Plantation, archaeological context of 1645 to 1665; KM639E.

Figure 13

Narrow Hoe, Late Type I grubbing hoe: blade 4 1/2"w. x 6 1/2"h.; 1 lb. 9 ozs.; maker's mark is indistinguishable in two squarish strike marks; Kingsmill, Pettus Plantation, archaeological context of 1675 to 1700; KM64AG.

Figure 14

Narrow Hoe, Late Type I hilling hoe: 6 3/4"w. x 7"h.; Governor's Land, Joseph Pettit Site, archaeological context of ca. 1690; GL3E.

Figure 15

Top Left-Right

Narrow Hoe, Late Type I grubbing hoe: illustrated shape has been restored, excavated hoe has slightly corroded edges; blade 4 1/2"w. x 7"h.; Governor's Land, Joseph Pettit Site, archaeological context of ca. 1690; GL3F.

Broad Hoe, Late Type I weeding hoe: illustrated shape has been restored, excavated hoe has slightly corroded edges; blade 10 3/4"w. x 4 3/4"h.; weight 1 lb. 12 ozs.; Kingsmill, Pettus Plantation, archaeological context of post 1650; KM54J.

Narrow Hoe, Late Type I hilling hoe: illustrated shape has been restored, excavated hoe is missing left corner; blade 6 3/4"w. x 7"h.; Governor's Land, Joseph Pettit Site, archaeological context of ca. 1690; GL3E.

Bottom Left-Right

Narrow Hoe, Late Type I: illustrated shape has been restored, excavated hoe has slightly corroded edges; blade 5"w. x 5 3/4"h.; 1 lb. 7 ozs.; Kingsmill, Kingsmill Plantation, archaeological context of 1645 to 1665; KM639E.

Broad Hoe, Late Type I weeding hoe: illustrated shape has been restored, excavated hoe has corroded edges; blade 10 1/2"w. x 5"h.; Carter's Grove Plantation, archaeological context of 1635 to 1645; CGER1737A.

Broad Hoe, Late Type I weeding hoe: illustrated shape has been restored, excavated hoe has slightly corroded edges; blade 10½"w. x 5 ¾"h.; maker's mark, partially indistinguishable, "X^" in a rectangular strike mark; Kingsmill, Kingsmill Quarter, archaeological context of 1690 to 1710; KM415A.

Figure 16

Top Left-Right

Broad Hoe, Type II: illustrated shape has been restored, excavated hoe is missing right corner; blade 8½"w. x 5"h.; maker's mark, partially indistinguishable, "4" above "XX" in an oval strike mark; Kingsmill, Pettus Plantation, surface find, occupational context of 1640 to 1710; KM50.

Narrow Hoe, Type II: illustration exact shape of hoe; blade 5"w. x 6"h.; maker's mark is "WN" in a circular strike mark; 1 lb. 12 ozs.; Kingsmill, Pettus Plantation, archaeological context of 1690 to 1710; KM64AB.

Narrow Hoe, Type II: illustration exact shape of hoe; blade 6"w. x 7¼"h.; maker's mark "S" in a heart, stamped three times; initial "R"; 2 lbs.; Kingsmill, Harrop Well, archaeological context of ca. 1720; KM1V.

Narrow Hoe, Type II: illustration exact shape of hoe; blade 5½" x 7"h.; maker's mark "M" stamped four times; initial "M"; 2 lbs.; Kingsmill, Harrop Well, archaeological context of ca. 1720; KM1X.

Bottom Left-Right

Broad Hoe, Type II weeding hoe: illustrated shape has been restored, excavated hoe missing mid-portion of left side; blade 11"w. x 7"h.; maker's mark indistinguishable in a circular strike mark; Kingsmill, Utopia Cottage, archaeological context of 1680 to 1710; KM312H.

Broad Hoe, Type II weeding hoe: illustrated shape has been restored, excavated hoe missing right half; restored blade 10½"w. x 7½"h.; maker's mark "IF" in a square strike mark, stamped three times; Kingsmill, Bray Plantation, archaeological context of post 1740; KM14A.

Figure 17

Broad Hoe, Type II weeding hoe: excavated hoe blade is heavily corroded; blade 9½"w. x 5 ¾"h.; maker's mark "D" surrounded by rouletting in a circular strike mark, stamped three times; Kingsmill, Harrop Well, archaeological context of ca. 1720; KM1X.

Figure 18

Broad Hoe, Type II weeding hoe: back view of KM1X, described in Figure 17; note tool manufacturing impressions on blade. The wrought iron in the collar has been drawn out and doubled over. This manufacturing technique was used only on Type II hoes.

Figure 19

Narrow Hoe, Type II grubbing hoe: blade 5"w. x 6½"h.; 1 lb. 15 ozs.; Kingsmill, Kingsmill Plantation, archaeological context of 1740 to 1760; KM605K.

Figure 20

Narrow Hoe, Type II: blade 5"w. x 6½"h.; note tool manufacturing impressions along spine; maker's mark, partially indistinguishable, is three "X" in an oval strike mark; 1 lb. 13 ozs.; Kingsmill, Harrop Well, archaeological context of ca. 1720; KM1X.

Figure 21

Broad Hoe, Type II weeding hoe: blade 8½"w. x 4½"h.; maker's mark is "DI" in rectangular strike mark, stamped three times; 2 lbs. 2 ozs.; Kingsmill, Harrop Well, archaeological context of ca. 1720; KM1X.

Figure 22

Top Left-Right

Narrow Hoe, Type III grubbing hoe: illustration exact shape of hoe; blade 5½"w. x 8"h.; maker's mark indistinguishable in rectangular strike mark; 2 lbs., Kingsmill, Kingsmill Quarter, archaeological context 1750; KM362B.

Narrow Hoe, Type III hilling hoe: illustration exact shape of hoe; blade 7"w. x 9"h.; maker's mark indistinguishable in two rectangular strike marks; Kingsmill, Kingsmill Quarter, archaeological context of 1740 to 1760; KM363A.

Broad Hoe, Type III weeding hoe: illustration exact shape of hoe, similar in shape to weeding hoes used in turnip fields (Appendix A); blade 9½"w. x 4"h.; maker's mark "L" stamped three times; Kingsmill, Burwell's Landing, archaeological context of post 1770; KM231G.

Bottom Left-Right

Broad Hoe, Type III weeding hoe: illustration exact shape of hoe; blade 12"w. x 8"h.; maker's mark "AD" in a rectangular strike mark with rounded end, stamped four times; Carter's Grove Plantation, archaeological context of ca. 1750; CGER1315M.

Broad Hoe, Type III weeding hoe: illustrated shape has been restored, excavated hoe has slightly corroded edges; blade 10½"w. x 7"h.; maker's marks "CS" stamped four times; 2 lbs. 13 ozs.; Kingsmill, Kingsmill Quarter, archaeological context of post 1770; KM400D.

Figure 23

Narrow Hoe, Type III hilling hoe: blade 7"w. x 9"h.; maker's mark indistinguishable in two rectangular strike marks; 3 lbs. 8 ozs.; Kingsmill, Kingsmill Quarter, archaeological context of ca. 1740 to 1760; KM363A.

Figure 24

Narrow Hoe, Type III hilling hoe: KM363A; same hoe as Figures 23 and 26.

Figure 25

Narrow Hoe, Type III grubbing hoe: blade 5½"w. x 8"h.; maker's mark indistinguishable in rectangular strike mark; 2 lbs.; Kingsmill, Kingsmill Quarter, archaeological context of ca. 1750; KM362B.

Figure 26

Narrow Hoe, Type III hilling hoe: KM363R; same hoe as Figures 23 and 26; see description for Figure 23.

Figure 27

Broad Hoe, Type III weeding hoe: blade 12"w. x 8 ¾"h., bent under at both corners; no spine or maker's mark; 3 lbs. 5 ozs.; Kingsmill, Kingsmill Quarter, archaeological context of post 1775; KM354B.

Figure 29

Top Left-Right

Broad Hoe, Early Type I hoe: fragment of probable bell-shaped hoe; three rivets along edge of hoe; repair piece of metal, forming the new edge, missing; maker's mark "RB" in rectangular strike mark; Governor's Land, The Maine, archaeological context of ca. 1618-1625; GL113C.

Broad Hoe, Type II: fragment; third piece of metal introduced to bridge gap between collar and blade before welding; Kingsmill, Harrop Well, archaeological context of ca. 1720; KM1X.

Narrow Hoe, Late Type I: fragment; five holes punched through metal to receive rivets for repair piece of metal; Kingsmill, Littleton Quarter, archaeological context of post 1771, KM153B.

Bottom Left-Right

Early Type I hoe: fragment; four rivets hold in place portion of repair piece of metal; Governor's Land, The Maine, archaeological context of ca. 1618-1625; GL113C.

Broad Hoe, Type II: fragment; metal remaining in collar and neck has been drawn out to form flap lapped over blade before welding; Kingsmill, Bray Plantation, archaeological context of 1735 to 1750; KM18AB.

Broad Hoe, Early Type I: fragment; four rivets hold in place portion of repair piece of metal; maker's mark "RB" etched into original blade, not seen until after drawing was made; Kingsmill, Littleton Quarter, archaeological context of 1750 to 1775; KM167C.

Figure 30

Narrow Hoe, Type II: blade 5½"w. x 7"h.; hole in blade caused by corrosion; Kingsmill, Harrop Well, archaeological context of ca. 1720; KM1X.

Figure 31

Broad Hoe, Type I: fragment; three rivets along edge of hoe; repair piece of metal, forming the new edge, missing; maker's mark "RB" in rectangular strike mark; Governor's Land, The Maine, archaeological context of ca. 1618-1625; GL113C.

Figure 32

Broad Hoe, Type II: fragment; metal remaining in collar and neck area drawn out to form flap that was lapped over blade before welding; note tool impressions incurred during repairs; Kingsmill, Bray Plantation, archaeological context of 1735 to 1750; KM18AB.

Figure 33

Top-Bottom

"H" in square strike mark; Flowerdew Hundred Plantation; ca. 1620 context; PG3/319K3-1.
"RB" in rectangular strike mark; Governor's Land, The Maine; ca. 1620 context; GL113C.
"X^" in square strike mark; Kingsmill, Kingsmill Quarter; ca. 1700 context; KM415A.

Figure 34

Broad Hoe, Type I bell-shaped hoe: "H" maker's mark; Flowerdew Hundred Plantation; ca. 1620 context; PG3/319K3-1.

Figure 35

1680-1710 Top-Bottom

Square strike mark; Kingsmill, Pettus Plantation; KM64AG.
"DI" in rectangular strike mark; Kingsmill, Utopia Cottage; KM312B.
Circular strike mark; Kingsmill, Utopia Cottage, KM312H.
"WW" in rectangular strike mark; Kingsmill Pettus Plantation; KM72A.
"VI" in circular strike mark; Kingsmill, Utopia Cottage; KM312Q.
"WN" in circular strike mark; Kingsmill, Pettus Plantation; KM64AB.

Ca. 1720 Top-Bottom

"S" in heart strike mark; Kingsmill, Harrop Well; KM1V.
"B" in heart strike mark; Kingsmill, Harrop Well; KM1X.
"IK" in rectangular strike mark; Kingsmill, Harrop Well; KM1X.
"M" Kingsmill, Harrop Well; KM1X.
"IR" in rectangular strike mark; Kingsmill, Harrop Well; KM1X.
"G" Kingsmill, Harrop Well; KM1X.
"XX" in oval strike mark; Kingsmill, Harrop Well, KM1X.
"B" Kingsmill, Harrop Well; KM1X.

"DI" in rectangular strike mark with rounded end,
Kingsmill, Harrop Well; KM1X.
"WD" in rectangular strike mark with rounded end; Kingsmill,
Harrop Well; KM1X.
"D" in circular strike mark; Kingsmill, Harrop Well; KM1X.
Circular strike mark; Kingsmill, Harrop Well; KM1X.

1740-1780 Top-Bottom

"IF" in square strike mark; Kingsmill, Bray Plantation, KM14A.
"SFOO" in rectangular strike mark; Kingsmill, Bray Plantation,
KM18V.
Rectangular strike mark with raised circle inside left end;
Kingsmill, Kingsmill Quarter, KM363A.
"4" over "XX" in an oval strike mark; Kingsmill, Pettus
Plantation; KM50; surface context of ca. 1640-1710.
After drawing was made, it was determined maker's mark
is probably from a ca. 1700 hoe and belongs in the first
column.
Heart strike mark; Kingsmill, Bray Plantation, KM10F.
Rectangular strike mark with rounded end; Kingsmill,
Littleton Quarter; KM152C.

Figure 36

Broad hoe, Type II: "DI" in rectangular strike mark,
stamped three times; Kingsmill, Harrop Well; ca. 1720
context; KM1X.

Figure 37

Post 1740

"P" in a square strike mark; Kingsmill, Littleton Quarter;
KM151C.
Circular strike mark, small and deep; Kingsmill, Littleton
Quarter; KM177B.
"IR" in a rectangular strike mark; Kingsmill, Bray
Plantation; KM14A.

1740-1760

"K" in a square strike mark; Carter's Grove Plantation;
CGER1111J.
"B" Kingsmill, Bray Field; KM494A.
"AD" surrounded by rouletting in a rectangular strike mark
with rounded end; Carter's Grove Plantation; CGER1315M.

1750-1775

Square strike mark; Kingsmill; Kingsmill Quarter; KM359B.

Post 1770

Heart strike mark; Kingsmill, Kingsmill Plantation; KM712B.
"CS" Kingsmill, Kingsmill Quarter, KM400D.
"B" in a rectangular strike mark; unidentified.

Figure 38

Broad Hoe, Type III weeding hoe: blade 10 1/3"w. x 7"h.;
maker's mark "CS" stamped four times; 2 lbs. 13 ozs.;
Kingsmill, Kingsmill Quarter; KM400D.

Figure 39

Broad Hoe, Type II weeding hoe: blade 10"w. x 4"h.;
excessively worn; maker's mark "B" stamped three times;
1 lb. 12 ozs.; Kingsmill, Harrop Well; archaeological
context of ca. 1720; KM1X.

Figure 40

Narrow Hoe, Type II: blade 5 1/4"w. x 7"h.; maker's mark "IR"
in rectangular strike mark, stamped three times;
Kingsmill, Harrop Well, archaeological context of ca.
1720; KM1X.

APPENDIX B

"Now you must hand hoe your turnip crop; a work perfectly understood in many parts of the Kingdom; but so much neglected and unknown in others, that it will be proper to enlarge a little on the method of performing it, and in the necessity of the practice. Supposing turnip hoers to be scarce, they demand extravagant prices, or none to be had, order some hoes to be made by your blacksmith; the iron part exactly 12 in. long, and 3 or 4 in. broad, neatly done and sharp: put handles 5 ft. long into them. So provided, take your men into the field, and yourself with a hoe should accompany them: make them hoe the crop boldly, and not be afraid of cutting up too many. Direct them to strike their hoes round every plant they leave, and fix upon the most vigorous and healthy growing ones. By this means they will not be able to leave them less than 14 in. asunder; for their hoes spreading at every cut 12 in., they cannot spoil your crop by not cutting freely. The work must be done by the day, and you must attend the men well, to see that they cut the land pretty deep, so as to kill all the weeds, and also such turnips as they strike at. In about a fortnight after, send them in again to rectify former omissions, in which time they must break all the land again with their hoes, cut up the remaining weeds, and wherever the turnips were left double, thin

them. The men will be awkward in this work the first year; but by degrees they will be able to do it in perfection, by mixing new ones amongst them every year the art will not be lost. The labourers receive payment of four shillings per acre for the first hoeing and two shillings per acre for the second hoeing."

Excerpt from the Farmers Kalender for July 1778, published in Farm Tools Through the Ages by Michael Partridge (Boston, 1973).

APPENDIX C

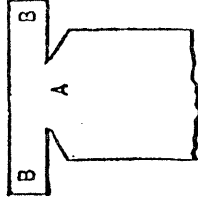
294

PRACTICAL BLACKSMITHING.

Making a Grubbing Hoe.

PLAN 2.

To make a grubbing hoe, take iron $3 \times \frac{1}{4}$ inch, cut as shown in Fig. 372, draw out the ends, bend at *A*



Making a Grubbing Hoe by "Southern Blacksmith's" Method.

Fig. 372—The Iron Cut and Drawn.

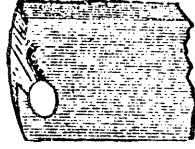


Fig. 373—The Iron bent to Shape.

to a right angle, bring *B* together, as shown in Fig. 373, and then weld. This is an easy job, and the result is a good hoe.—By SOUTHERN BLACKSMITH.

Pattern for manufacturing Type III grubbing hoes, from Practical Blacksmithing, 1890. Figure 373 gives the illusion that ends BB were brought down and welded rather than drawn up and welded. This seems unlikely, as the handle would have proved structurally impractical.

APPENDIX D

Sargent & Co.'s Grub Hoes.



Oval Eye, Painted Black, Extra Finish.

Nos.	0	1	2	3
Width of Cut,	3	3½	4	4½ Inch.
Per dozen,	\$10 50	11 00	11 50	12 00

Planters' Hoes.



CAST STEEL PLATED.

Made from Best Norway Iron and Cast Steel.

All Bright.

Nos.	00	0	1	2	3	4	5
Per dozen,	\$6 00	6 25	6 50	7 00	7 50	8 00	8 50

Half Bright.

Nos.	00	0	1	2	3	4	5
Per dozen,	\$5 50	5 75	6 00	6 50	7 00	7 50	8 00



Scovil Pattern.

Scovil Pattern, All Bright.

Nos.	00	0	1	2	3	4
Per dozen,	\$6 00	6 25	6 50	7 00	7 50	8 00

Scovil Pattern, Half Bright.

Nos.	00	0	1	2	3	4
Per dozen,	\$5 50	5 75	6 00	6 50	7 00	7 50

Grubbing and weeding hoes from an Illustrated Catalogue of Hardware, manufactured and for sale by Sargent and Company, 1880.

APPENDIX E

"Carron Company was reliant on the powerful Glasgow Merchants to effect sales in the new world and in 1764 these Merchants were told that Carron were now making broad and narrow hoes. They were reluctant to change from Crowley's, their existing supplier but Carron sent a special messenger to Glasgow to force or cajole them into specifying Carron. Carron maintained that their hoes were as good as Crowley's for they were made by a former Crowley employee now working at Carron. Carron credit terms were not so good but their price was 1/-d a dozen cheaper. There must still have been doubts for in 1765 the Company's London Agents were sending patterns of Crowley's hoes secretly to Carron so that they could be copied."

Excerpt from a letter dated January 6, 1977 from William Brown (Carron Company, London, England) to Keith Egloff (Virginia Research Center for Archaeology, Williamsburg).

Chillington Hoes

Chillington Tool Company Limited
Wolverhampton, England

Asia/Middle East/Australia

2890C Size 13 Cases each 25	3511C Size 23 Cases each 25	3891C Size 17 1/2 Cases each 25
4127C Size 1 2 3 4 Cases each 25	3814C Size 1 2 3 Cases each 25	25E (4883C) Size 6 000 000 00 0 1 2 Cases each 25
3843C Size 25 3 21 22 4 41 42 Cases each 20	3895C Size 1500 Cases each 20	81 (4505C) Size 30 0 0 00 00 0 Cases each 25
3838C Size 00 0 1 2 3 4 5 6 Cases each 25		25B (4504C) Size 1 0 0 0 0 Cases each 25

Africa

4785C Size 2 2 1 3 Cases each 25	4818C Size 5 6 7 8 9 10 Cases each 25	AW 200 Size 2 2 1 (4020C) Cases each 25
2847C Size 2 1 3 Cases each 25	2513C Size 11 2 24 3 Cases each 25	4679C Size 13 Cases each 90
4818C Size 25 Cases each 25	3823C Size 21 Cases each 25	3873C Size 21 3 Cases each 25
4888C Size 1 Cases each 20	3823C Size 30 40 Cases each 20	8118C Size 2 2 1 Cases each 90
8141C Size 1 2 3 Cases each 25	4837C Size 21 3 Cases each 25	8118C Size 2 2 1 Cases each 90

South/Central America

8 (4786C) Size 2 8 Cases each 25	1436 (4786C) Size 1 2 3 Cases each 25	Y1318 (5184C) Size 5 1 Cases each 25
63A (4772C) Size 2 Cases each 25	41E (4772C) Size 2 Cases each 25	AW1-8 (4020C) Size A B D E W Cases each 10
8148C Size 00 0 Cases each 25	AW19 (4134C) Size 2 2 1 3 3 Cases each 25	2891C Size 18 4 Cases each 20
84 (4847C) Size 0 1 2 3 Cases each 25	3848C Size 1 2 Cases each 25	2898C Size 1 2 3 Cases each 25
8A (4848C) Size 0 1 2 3 Cases each 25	Y111 (4022C) Size 2 3 3 Cases each 25	

APPENDIX F

Chillington Tool Company Limited of Wolverhampton, England, 1974 brochure. A listing of hoe patterns and sizes manufactured for sale to various areas of the world.

APPENDIX G

"So far as I am aware we have always followed the policy of trying to produce the tool the farmer requires rather than to educate him to use the tool we can offer. A Typical example of this policy is Tanzania which is a large country with many varying conditions. In years gone by the local communities formed their own ideas on the type of tool they needed to suit their own particular conditions and the local blacksmiths made these tools by hand. This was a slow and laborious process and, with the growing population, other sources of supply had to be found."

"Quite a number of years ago we studied this problem and decided to mass produce the patterns used in different districts of Tanzania. A similar process took place in other countries throughout the world but we have no knowledge of what happened in Virginia or North America."

Excerpt from a letter dated July 24, 1974 from D.A. Raiswell (Chillington Tool Company of Wolverhampton, England) to Patricia Gibbs (Research Department, Colonial Williamsburg Foundation).

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