

# A MIDDLE PERIOD LITHIC TOOL ASSEMBLAGE FROM THE ATLANTIC WATERSHED REGION, COSTA RICA

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## ABSTRACT

*Preliminary study is made of the utilitarian stone tools found "in situ" at the Monte Cristo site in Costa Rica. As Monte Cristo is a single component site of known chronology, lithic types may be significant in developing a lithic tool typology which reflects change.*

## RESUMEN

*Se hace la primera clasificación de herramientas líticas utilitarias provenientes de Monte Cristo, sitio unicomponente cerca de Turrialba. Se piensa que la clasificación tal vez sea el primer paso hacia una tipología lítica que refleje cambios culturales en la prehistoria costarricense.*

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**THE** Monte Cristo site (C-87) was initially mapped and excavated during 1965-1966 and visited again in 1976 as part of an archaeological survey of the Reventazón River drainage area. The site is on the Finca Monte Cristo approximately 3 km south of the town of Orosi located in the Reventazón River drainage area in the Atlantic watershed region of Costa Rica (Fig. 1).

Monte Cristo is a small (100 m x 100 m) single component site of the latter half of the Middle Period, called Middle Period B (AD 850-1400) (Kennedy 1968). It appears to be a habitation site rather than ceremonial or burial complex and is situated on relatively level terrain overlooking the Macho river, about 100 m below (Fig. 3).

Compared with some sites reported in this region (Aguilar 1972, Hartman 1901, Lothrop 1926, Kennedy 1968) Monte Cristo seems relatively unimpressive. It is felt, however, that the number of lithic artifacts in a stratified deposit make this site significant. In general, assemblages of lithic materials in Costa Rican archaeology have been given little attention by archaeologists. In other cases, lithic artifact typologies do not treat all classes of stone tools (Lines 1953).

It is hoped that this report with its emphasis on utilitarian lithic artifacts will serve to stimulate further work in this area and assist in the development of a lithic tool typology with regional significance.

## Excavation

After mapping the site, two 2 m x 1 m stratigraphic test trenches were excavated in arbitrary 10 cm levels (Fig. 2).

Sherd concentrations were located on grid coordinates and in depths below an arbitrary datum plane. Artifacts of size and artifact clusters were recorded "in situ" while smaller artifacts were recovered from a 1 cm shaker screen. The objectives of the excavations initially were to (a) obtain artifacts from all levels, and (b) examine their stratigraphic sequence.

## Ceramic assemblage

### Trench 1

Eight hundred seventy-one sherds were recovered. Most were found in the brown silty loam of the uppermost levels, 10-40 cm. Undecorated monochrome wares were the dominant ceramics

Nota del Editor: Trabajos recientes en la vertiente atlántica han resultado en el cambio de los nombres de períodos cronológicos y algunos tipos cerámicos empleados aquí. Como no han sido publicados todavía, se preserva aquí la nomenclatura de Kennedy (1968).

(Table 1). Bichrome and other decorated wares appeared in association with each other and clustered, with few exceptions, in the 20 cm – 70 cm strata. The presence of Chocolate Incised and Maroon Incised Ware are especially significant as they are associated with the Middle Period ceramic complex.

## Trench 2

A bovine tooth in the 10–20 cm level suggested the uppermost levels of Trench 2 had been disturbed.

Monochrome Wares were again the dominant ceramics (Table 2), as in Trench 1.

A number of undecorated sherds did not seem to fall within the ranges of the various established types. Unclassified dark brown sherds were especially frequent in this test pit.

Yellow Painted Line, White Painted Line and Red Painted Line wares; diagnostic ceramics of Middle Period B were present. Yellow Line Ware was the most common decorated ware in the 40–50 cm level. It was also present in the 30–40 cm stratum, where it was exceeded in popularity only by Chocolate Incised Ware. Red Painted Line and White Painted Line Wares were in association with one another as well as other lineal incised wares and applique wares.

Sherds became infrequent in the lower levels, corresponding to a change in stratification where the silty loam changes to a brown fine sandy clay loam. At 60 cm the test pit became sterile. Excavations were continued to a depth of 180 cm.

One sherd (Fig. 4) found in the 40–50 cm level had been reworked. Nearly circular in shape, it measures 4 cm in diameter.

The appearance of circular ceramic discs, the so-called “problematicals”, are known in other sites in Costa Rica and have also been found in an archaeological site in the Azuero Peninsula of Panama (Sander 1965).

## Lithic Assemblage

Lithic materials were associated with ceramics of known time period. Especially significant are: a) Yellow Painted Line; b) Red Painted Line and; c) White Line Ware. All are chronological markers of the Middle Period-B (AD 850–1400) (Kennedy 1968). A C<sup>14</sup> date of AD 990 ± 430 (No. 6–5475A Shell Development Corporation) at the 50 cm level in Trench 2 gives further corroboration in this inference.

Table 3. Excavated Levels and Lithic Counts in Trench 1 & 2, Test Pits 1–4.

Level	Tr 1		Tr 2		Pit 4	
	Pit 1	Pit 2	Pit 3	Pit 4		
1	0–10 cm	—	3	1	1	
2	10–20 cm	4	5	—	4	
3	20–30 cm	3	10	9	10	
4	30–40 cm	1	—	3	12	
5	40–50 cm	—	1	—	5	
6	50–60 cm	1	1	3	3	
7	60–70 cm	1	—	1	1	
8	70–80 cm	—	—	—	—	
9	80–90	—	—	—	—	
	TOTAL	10	20	17	36	83*

\* (Total reflects flakes as well as tools)

Several types of stone were utilized by the aboriginal stone knapper: diorites, basalts, slate, shale, vesicular lava, felsites and obsidian being noted.

On the basis of their frequency, a marked preference seemed to be for tools made of diorite (39.0%) and basalt (12.5%) (Table 4).

**Table 4.** Frequency Distribution of Lithic Tools by Type of Stone

Stone Type	N	%
Diorite	33	39.0
Basalt	10	12.5
Shale	8	9.7
Slate	8	9.7
Vesicular Lava	2	2.5
Felsite	1	1.3
Obsidian	1	1.3
Unclassified	20	24.0
<b>TOTAL</b>	<b>83</b>	<b>100.0</b>

Outcroppings of all stone utilized for tools are found in the region except for obsidian. Dioritic and basaltic rocks are especially common in the general vicinity.

### Flaked Tools

The stone tool assemblage consisted principally of flaked tools. Figures 5, 6, 7, 8 and 9 illustrate the lithic materials found at Monte Cristo. Although functional terms like scraper and graver are used, it should be understood that identifications are tentative, and function is only implied.

### Scrapers

A total of thirty-eight scrapers was recorded. Each artifact shows some evidence of being used. The material was generally of diorite although some scrapers are of basalt and slate. Scrapers are of varied size and are listed in Table 5.

**Table 5.** Metric Data of Scrapers from Monte Cristo (C-87)

Scraper Sample No.	L. (cm)	W. (cm)	Scraper Sample No.	L. (cm)	W. (cm)
1 (Fig. 7, G)	4.5	x 1.0	20 (Fig. 6, B)	5.0	x 3.5
2 (Fig. 7, H)	4.5	x 2.5	21 (Fig. 6, C)	7.0	x 2.5
3 (Fig. 7, I)	5.0	x 3.2	22 (Fig. 6, D)	11.0	x 3.5
4 (Fig. 8, A)	2.5	x 1.0	23 (Fig. 6, F)	3.0	x 2.5
5 (Fig. 8, B)	3.0	x 2.5	24 (Fig. 7, A)	6.0	x 2.5
6 (Fig. 8, C)	4.5	x 2.0	25 (Fig. 7, B)	8.0	x 2.5
7 (Fig. 8, G)	7.0	x 5.5	26 (Fig. 7, C)	3.5	x 3.0
8 (Fig. 8, H)	6.0	x 5.5	27 (Fig. 7, D)	4.5	x 5.0
9 (Fig. 8, I)	5.0	x 4.0	28 (Fig. 7, E)	5.0	x 3.5
10 (Fig. 8, J)	6.0	x 2.0	29 (Fig. 7, F)	3.5	x 3.0
11 (Fig. 8, K)	10.00	x 4.5	30 (Fig. 7, Q)	3.5	x 2.5
12 (Fig. 8, M)	3.5	x 2.5	31 (Fig. 8, S)	6.5	x 4.0
13 (Fig. 8, Q)	7.0	x 4.5	32 (Fig. 8, T)	4.0	x 4.0
14 (Fig. 8, R)	4.5	x 2.5	33 (Fig. 8, U)	5.0	x 1.5
15 (Fig. 8, X)	5.0	x 2.5	34 (Fig. 8, V)	4.5	x 5.5
16 (Fig. 5, A)	4.0	x 3.0	35 (Fig. 9, BB)	4.0	x 3.2
17 (Fig. 5, B)	4.5	x 6.0	36 (Fig. 9, CC)	3.0	x 2.0
18 (Fig. 5, C)	3.0	x 3.0	37 (Fig. 9, HH)	6.5	x 5.0
19 (Fig. 5, D)	6.0	x 3.0	38 (Fig. 9, II)	7.0	x 5.5

Range 3.0 cm x 2.0 cm – 11.0 cm x 3.5 cm  
 Mean 5.14 cm x 3.30 cm

## Gravers

This class of artifact was the next largest group encountered. Twelve gravers were identified. All are made from dioritic rock with a single exception. The metric data is listed below in Table 6.

**Table 6.** Metric Data of Gravers from Monte Cristo (C-87)

Gravers Sample No.	L. (cm)	W. (cm)	Gravers Sample No.	L. (cm)	W. (cm)
1 (Fig. 5, G)	5.0	x 2.5	7 (Fig. 6, N)	7.0	x 3.0
2 (Fig. 6, I)	2.0	x 2.0	8 (Fig. 6, O)	2.5	x 1.5
3 (Fig. 6, J)	4.5	x 3.2	9 (Fig. 7, J)	4.0	x 1.7
4 (Fig. 6, K)	4.0	x 0.7	10 (Fig. 7, K)	4.0	x 2.0
5 (Fig. 6, L)	5.5	x 3.0	11 (Fig. 7, L)	3.0	x 2.0
6 (Fig. 6, M)	4.5	x 2.2	12 (Fig. 9, FF)	5.5	x 1.0

Range 2.0 cm x 2.0 cm – 7.0 cm x 3.0 cm

Mean 4.29 cm x 5.09 cm

## Blades

Three artifacts belong to this category. Blades ranged from 6.5 cm to 10.5 cm in length.

**Table 7.** Metric Data of Blades from Monte Cristo (C-87)

Blades Sample No.	L. (cm)		W. (cm)
1 (Fig. 5, E)	7.0	x	2.5
2 (Fig. 5, F)	6.5	x	2.5
3 (Fig. 8, P)	10.5	x	4.0

Range 6.5 cm x 2.5 cm – 10.5 cm x 4.0 cm

Mean 8.0 cm x 3.0 cm

## Awls (Fig. 8, W, Fig. 7, M)

Two awls or perforators were found at the Monte Cristo site. Both are made of diorite and measure 3.5 cm x 2.0 cm and 5.0 cm x 4.0 cm respectively.

## Axe (Fig. 6, A.)

One fragmentary bifacially flaked axe made of diorite forms part of the Monte Cristo lithic assemblage.

## Reamer or Punch (Fig. 9, JJ)

A punch or reaming implement which appears to have been fashioned from a polished stone celt fragment was noted. It is made of felsite and measures 9.5 cm x 5.5 cm. Fig. 8, L may also have been used as a reamer, having been reworked from a lance head. It is made of slate and measures 12.5 cm x 7.0 cm.

### Other: Hand Axe - Hammer Stones

A large bifacially flaked hand-axe (Fig. 8, D) of diorite measuring 12.5 cm x 9.3 cm was found at this site. Two hammerstones (Figs. 8, F; 7, AA) were also noted, both of slate. They measured 12.0 cm x 9.0 cm and 7.0 cm x 5.5 cm respectively.

### Utilized Flakes and Cores

A number of flake fragments (11) illustrated in Figs. 5, 6, 7, 8, 9 are part of the Monte Cristo lithic inventory. Most appear to bear evidence of use. A flaked core of obsidian (Fig. 8, N) is also part of the lithic group.

It seems unlikely that Monte Cristo was the site of a lithic workshop as the number of unutilized flakes was not large, as might be anticipated from a working area. It appears, therefore, that the lithic tools were made elsewhere or in another part of the site, yet unexcavated.

## Ground Stone Tools

### Manos

Two ground stone manos were found at Monte Cristo. Figure 6, T illustrates one of vesicular lava, elongated in configuration and measuring 17.0 cm x 6.0 cm x 3.0 cm thick. Figure 8, O is of similar material measuring 15.0 cm x 9.5 cm x 5.0 cm thick. There is a slight hump on the upper surface of this mano. Both artifacts show signs of use, although slight.

### Polished stone tools

Two categories of artifacts, celts and rubbing stones, comprise the polished stone tools in the Monte Cristo lithic assemblage.

### Celts

The artifact in Figure 9, DD is a polished stone celt made of gray basalt. It is 16.0 cm x 6.0 cm x 2.5 cm thick and shows signs of heavy usage as the cutting edge and adjacent corners are badly chipped. Figure 9, JJ and Figure 6, S illustrate broken celts which appear to have been reworked for a specific purpose. The former, of felsite, is retouched and ground to a point, possibly functioning as a punch or reamer. The latter of diorite, appears to have been refashioned but does not exhibit unique features which would suggest a particular function or class of tool.

### Rubbing Stones

Six artifacts, exhibiting signs of slight use, may possibly be rubbing stones. They vary in size from 3.5 cm x 2.5 cm to 11.0 cm x 7.0 cm.

## Conclusions

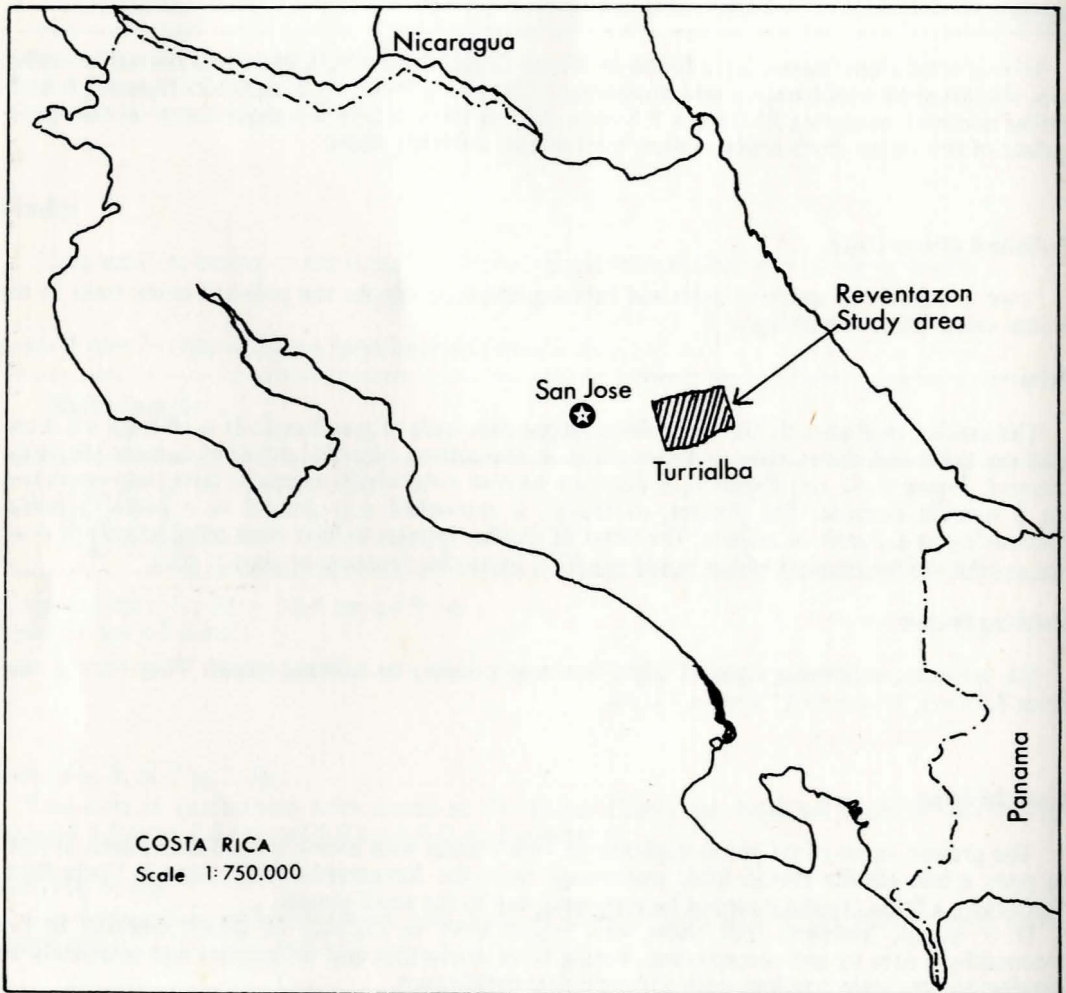
The present series of 83 stone implements were chosen with a view toward illustrating, at least in part, a late Middle Period lithic assemblage from the Reventazón River Area in Costa Rica. Obviously, a lithic typology cannot be proposed, due to the small sample.

It is hoped, however, that these data might serve as impetus to others working in the Intermédiate Area to seek comparison, noting both similarities and differences and ultimately to develop an area wide typology with chronological significance.

As more data on Costa Rica lithic technology accumulate, sites of lithic workshops will eventually emerge, possibly demonstrating trade in lithic raw materials through time. The detailed study of the stone tool industry may give us additional insights into the way of life of the peoples in this region by developing a greater understanding of how tools were made and how they were utilized within the culture.

*ACKNOWLEDGMENTS.*

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*Fig. 1.* Region under study.

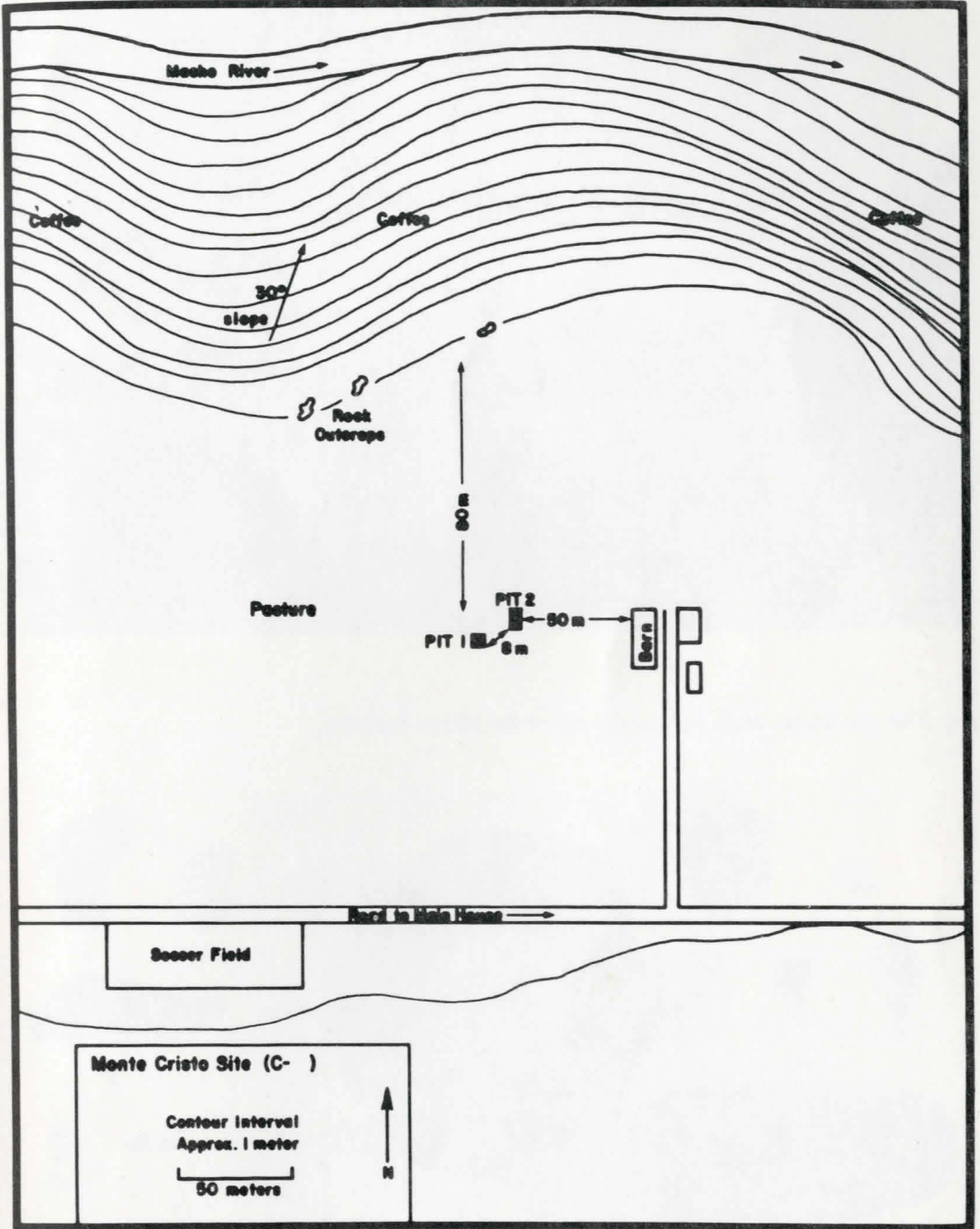
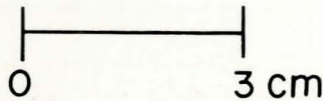
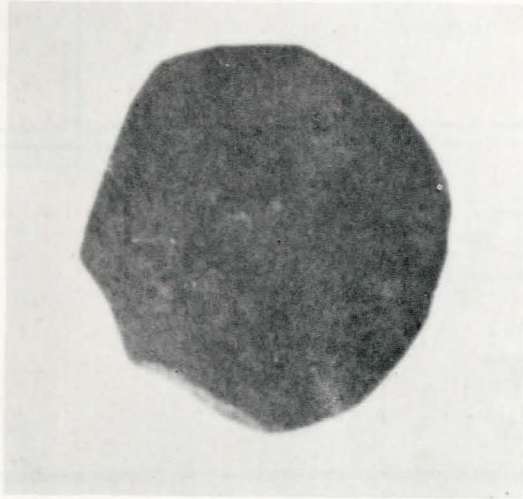


Fig. 2. Monte Cristo Site (C-87)



*Fig. 3.* Monte Cristo, single component site of the Middle Period B.



*Fig. 4.* Ceramic disc.



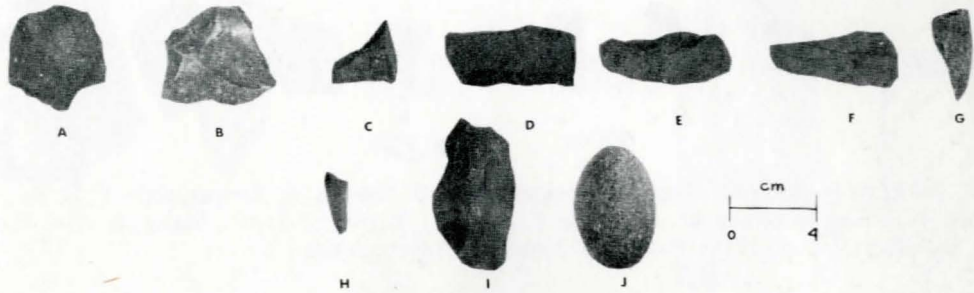


Fig. 5. Pit 1. A: Notched scraper, diorite; B-D: Scraper, diorite; E: Blade, diorite; F: Blade, shale; G: Graver, diorite; H: Flake, basalt; I: Flake, diorite; J: Ovaloid stone, basalt.

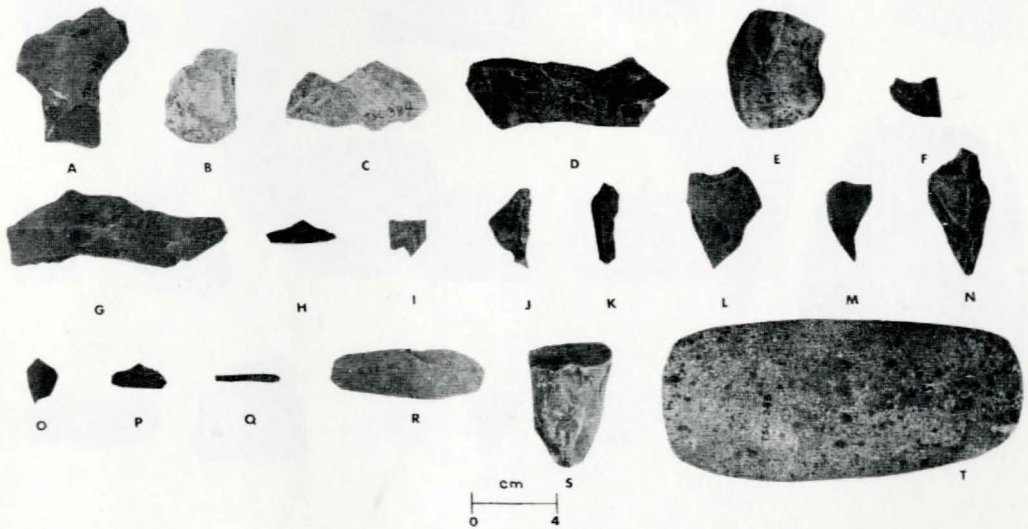


Fig. 6. Pit 2. A: Axe (fragment), diorite; B: Scraper, shale-like; C-D: Scraper, diorite; E: Rubbing stone, slate-like; F: Scraper, basalt; G-H: Flake, diorite; I-N: Graver, diorite; O: Graver; P: Flake, basalt; Q: Flake, diorite; R: Rubbing stone; S: Celt fragment (possibly reworked), diorite; T: Mano, ground vesicular lava.

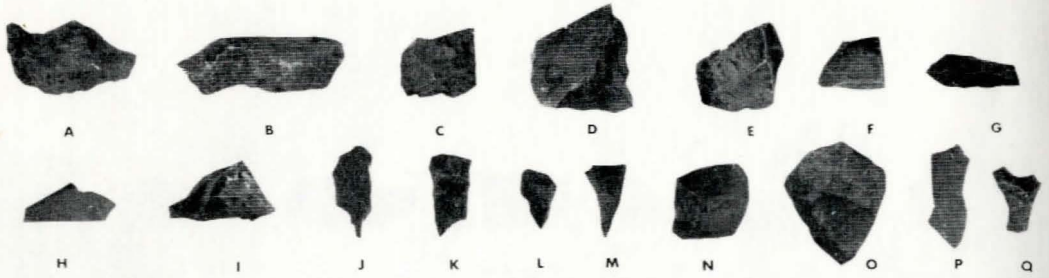


Fig. 7. Pit 3. A, B: Scraper, diorite; C: Scraper, shale; D: Scraper; E: Scraper, slate; F, G: Scraper, diorite; H, I: Triangular scraper; J: Graver; K: Scraper, diorite; L: Graver, basalt; M: Awl, diorite; N, O: Rubbing stone; P: Flake, diorite; Q: Notched scraper, diorite.

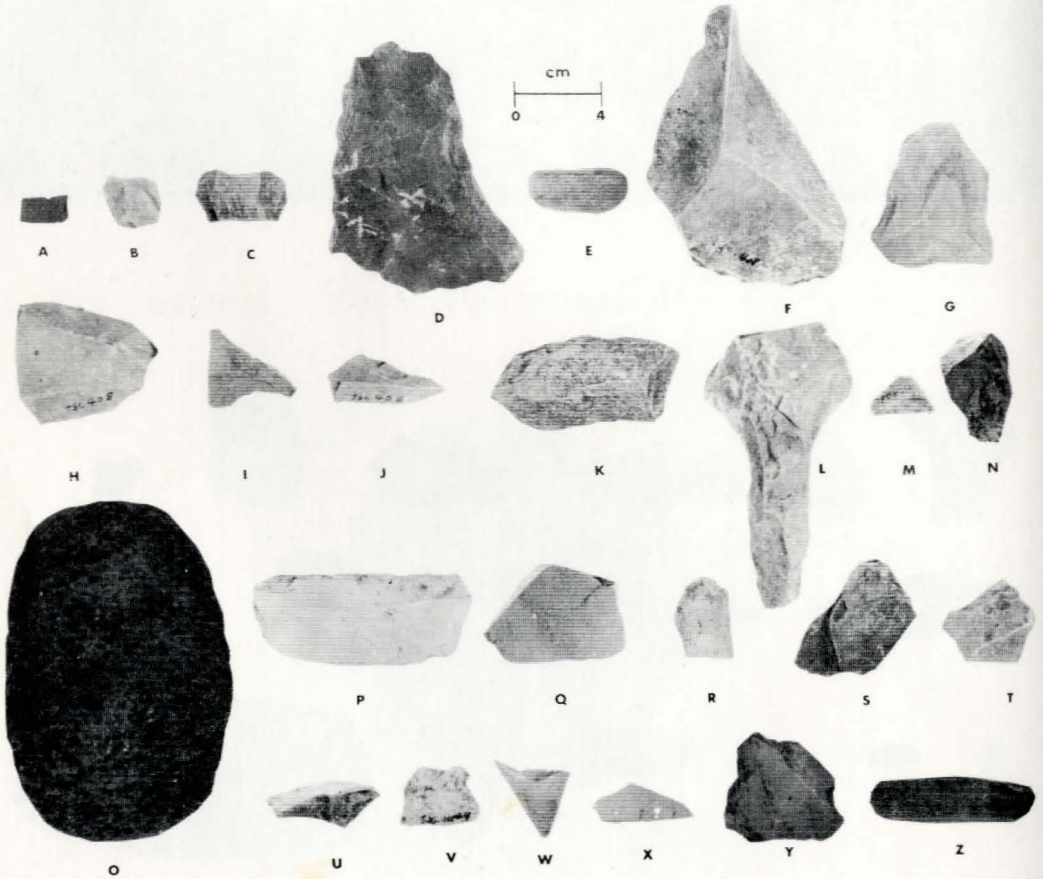
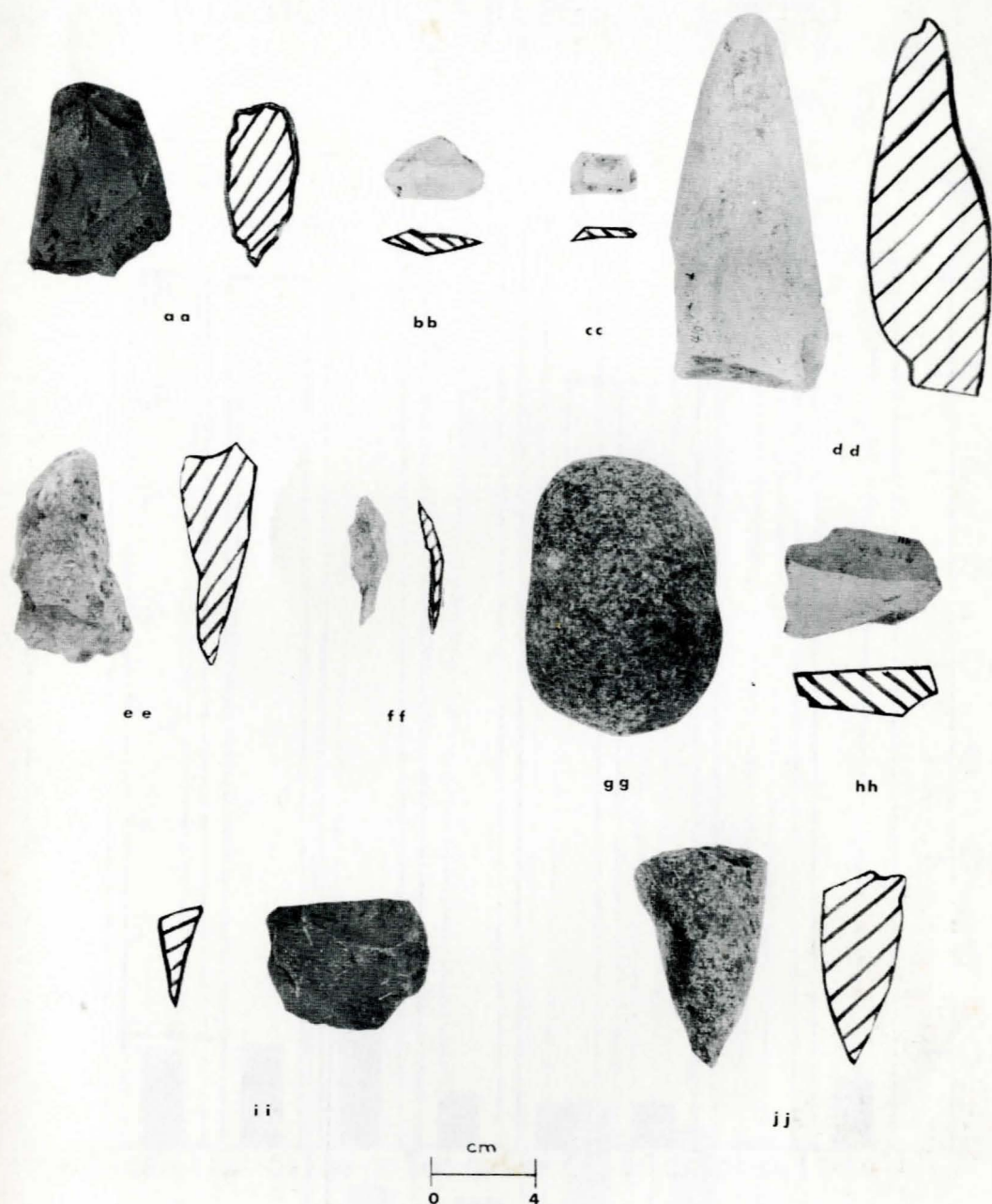


Fig. 8. Pit 4. A: Scraper, shale; B, C: Scraper, diorite; D: Hand axe, diorite; E: Rubbing stone; F: Hammerstone, gray slate; G: Scraper, basalt; H: Scraper, diorite; I: Scraper, basalt; J: Scraper, diorite; K: Scraper, gray slate; L: Reamer (or fragmentary lance head), flaked slate; M: Triangular scraper; N: Flake, obsidian; O: Mano (hump on upper surface), vesicular lava; P: Blade, shale; Q: Scraper, basalt; R: Scraper, shale; S: Scraper; T: Scraper, shale; U: Scraper, basalt; V: Scraper, gray slate; W: Awl, basalt; X: Triangular scraper, basalt; Y: Flake, shale; Z: Flake, diorite.



*Fig. 9.* Pit 4. AA: Hammerstone, gray slate; BB, CC: Scraper, gray slate; DD: Ground celt, gray basalt; EE: Flake; FF: Graver, diorite; GG: Rubbing stone, diorite; HH: Scraper, gray slate; II: Scraper, gray slate; JJ: Reamer or punch (reworked from broken celt), felsite.

Table I. Frequency of monochrome & decorated ceramic wares at Monte Cristo - Trench I.

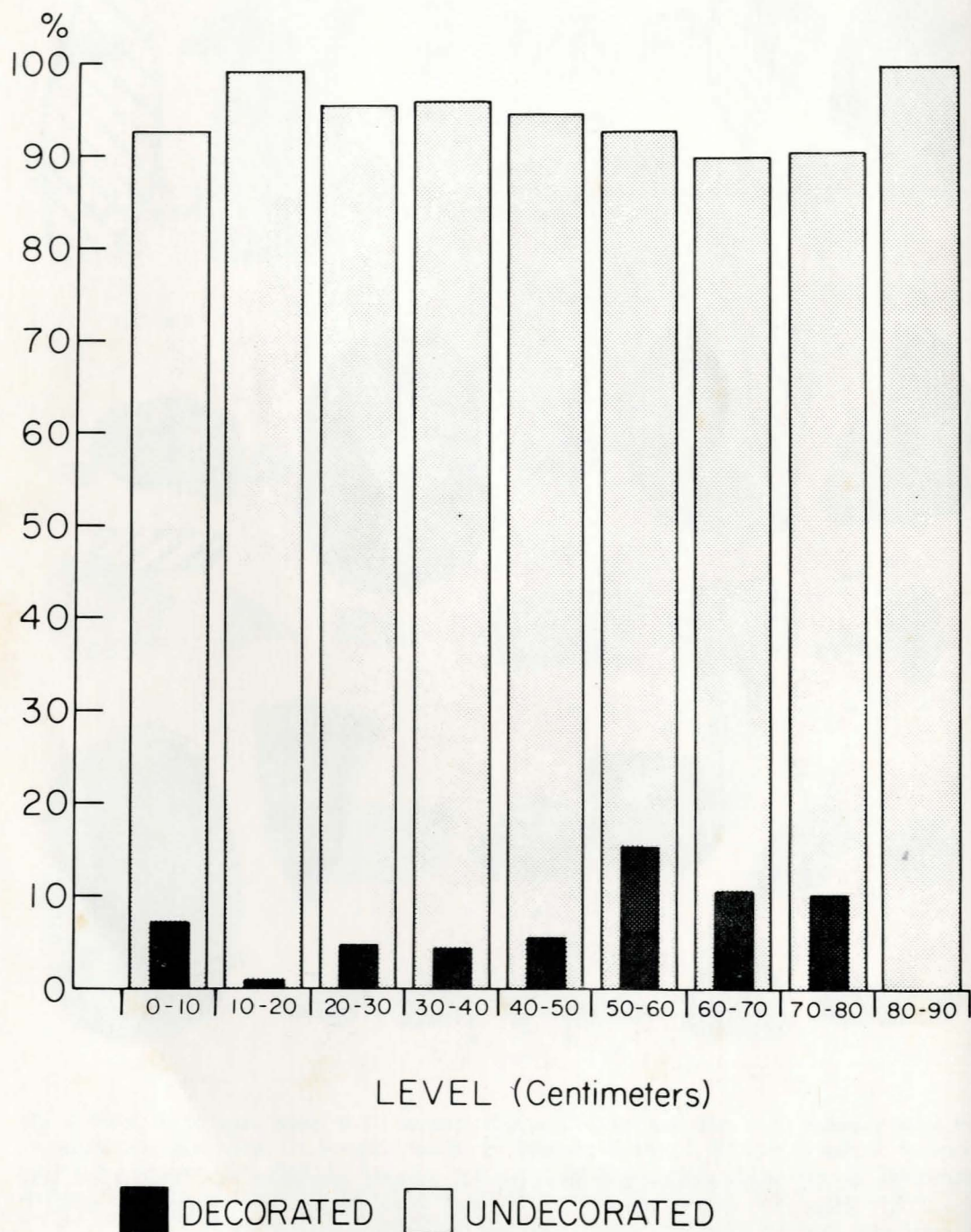
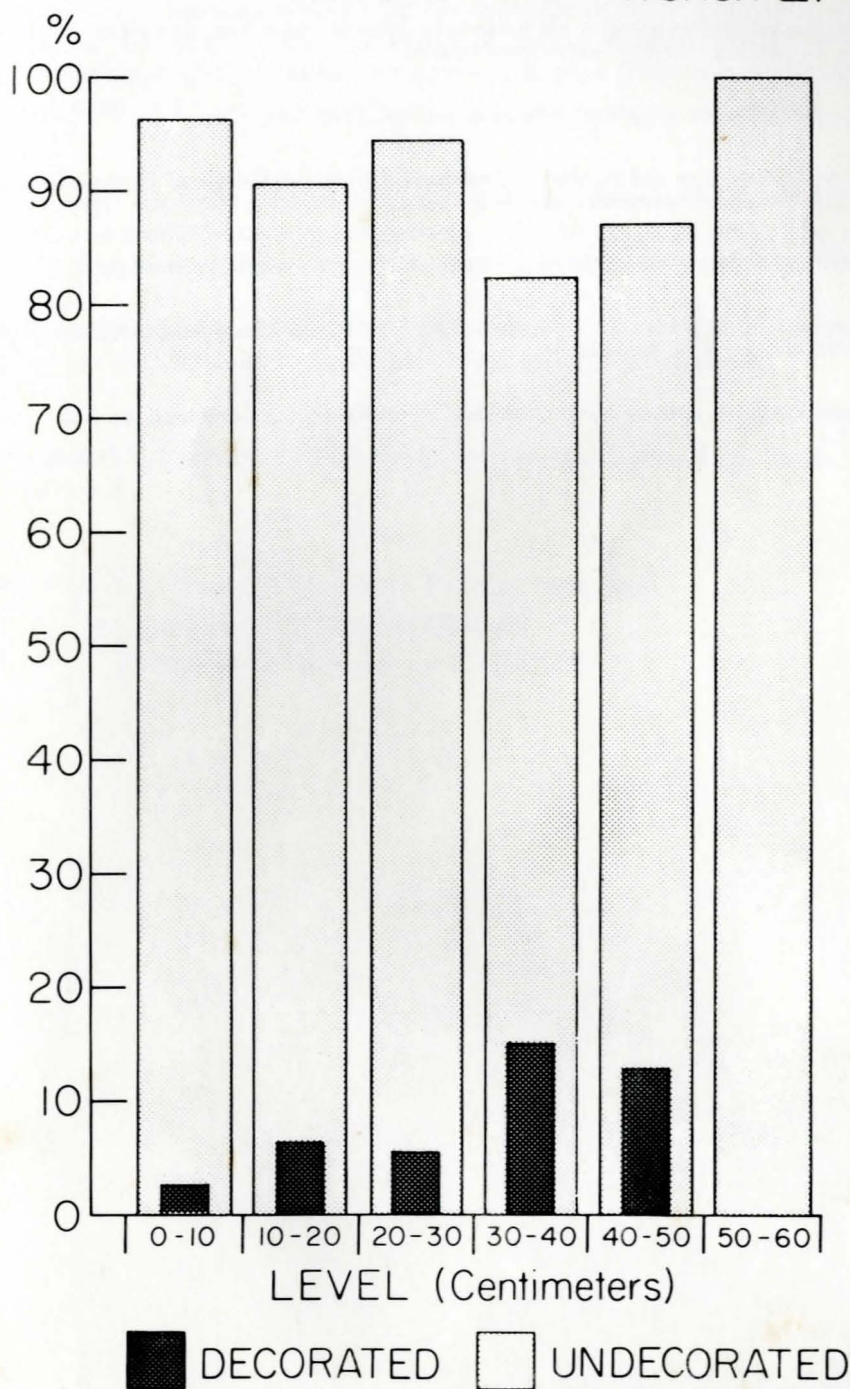


Table 2. Frequency of monochrome & decorated ceramic wares at Monte Cristo - Trench 2.



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