ANDRIESGROND REVISITED: MATERIAL CULTURE, IDEOLOGIES AND SOCIAL CHANGE.

BY: GAVIN C. ANDERSON : 1991

UNPUBLISHED HONOURS DISSERTATION FOT THE DEPARTMENT OF ARCHAELOGY, U.C.T.

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INTRODUCTION:

Andriesgrond (32° 11′ 40" S, 18° 51′ 30" E), is about 100m above and ± 1km to the west of the high water mark of the Clanwilliam Dam (fig. 1.1). The shelter is located on the outcrop, called ***Bobbejaanskopje***, that consists of two summits: the highest and southern most housing the site. Between the two summits is a sheltered saddle where numerous lithic artefacts (mainly of silcrete and quartz) can be found. The writer also found a wild bees nest on the southern kopje when he visited the site in September 1990.

The cave faces east and is ± 15 meters wide (along the dripline) with a maximum depth of 6 meters (fig. 1.1). It has an extensive talus slope that extends for ± 50 meters where it disperses. Systematic analyses of the artefacts on the talus slope were undertaken in 1978 (four 4m x 5m rectangles were collected, called CAR 5A, CAR 5B, CAR 5C, and, CAR 5D); however, nearly thirteen years on the slope has revealed many more artefacts on recent two visits. Most notable were the number of formal stone tools (e.g. several adzes and scrapers), pottery, O.E.S. fragments and marine shell. These artefacts were not removed as it is not one of the aims of this study to look at the talus slope: they were left "*in situ*". On the talus slope were several *Iridaceae* plants and near the bottom of the slope were trees such as *Rhus burchellii* (G. Hall pers. comm). Recently, several eland have been reintroduced to the area by the owner Mr. Stone.

On the cave wall there are several rock art friezes. Friezes meaning "sets" of paintings that the writer grouped together due to similarities in style of images and spatial location on the cave wall. Four friezes were traced (fig.s 7.1, 7.2, 7.3 and 7.4). On the east flank of the saddle (mentioned above) there is a small hole/cave with a painting of a man with a stick and a baby (?) following an elephant-like, or aardvark-like creature. Opposite this hole/cave there is a 'tunnel' leading through to a northerly outlook which has a little deposit in it (some silcrete flakes, O.E.S., pottery, and tortoise bones). Here there are ±20 red ochred human figures in various groups and poses. These last two sets of paintings were not traced.

BOTANICAL BACKGROUND:

Andriesgrond Cave is on a sandstone outcrop in a mosaic of Dry Mountain Fynbos and Karroid Shrubland (Liengme 1987; Milton 1978) - see fig. 6.1. This transitional ecozone provides a wide range of plant resources that can be eaten and used for medicinal purposes, including geophytes, succulents and shrubs (Milton 1978). This part of the Cape Fold Belt has permanent water from two main rivers: the Olifants and Doorn Rivers, with numerous small streams in the kloofs (Kaplan 1986). It thus seems to be a very likely place to support a community with a subsistence based on plant foods. Moll (1984) mentions that while the potential of this area lies in its range and variety of small animals and plant foods, the larger ruminants cannot survive in this low nutrient status of the fynbos vegetation, and thus a reliance of plant foods is a necessity.

Milton (1978) identified ten plant communities in the Clanwilliam district (a full list is given in Milton's appendix). These are:

(A) Drought-deciduous shrub community characterized by *Berkeya fruticosa, Zyygophyllum spp., Tetregonia cf. rosea,* and *Didelta spinosa.*

(B) *Euphorbia mauritanica* and *Montinia-cotyledon* community.

(C) *Rhus undulata-Asparagus retrofractus* community.

(D) *Diosma acmaephylla* community, e.g. *buchu.*

(E) *Aspalathus acuminata-Nylandtia spinosa* community

(F) Fynbos community

(G) Geophyte community of *Wildenovia striata, Anthericum, Lachenalia,*and *Oxalis sp.*

(H) *Eragrostis spinosa-Carpobrotus* community; dominated by grasses.

(I) Riverine vegetation community

(J) Swards community. Swards are areas bare of all vegetation and relatively free of large rocks. They are most probably caused by nitrogen enrichment of the soil by dassie droppings.

Of these ten communities five were found near to Andriesgrond cave: A, B, D, E, and J (fig. 6.2). "The vegetation of Andriesgrond is unlikely to have changed radically since the time of occupation of the shelter. However, the species richness has declined and annuals and spiny and unpalatable shrubs have probably increased as the more palatable ones have died out " (Milton 1978:9). Conversely, some palatable species are growing in the area that were not found in the cave deposit, e.g. *Chasmanthe floribunda* (common at De Hangen) and *N. spinosa.*

Levyns (1964 in Milton 1978) notices that *Oxalis sp.* and *Babiana sp.* have maximum species concentration in Clanwilliam, but *Oxalis sp.* is not common in the cave samples. *Hexaglottis virgata* is the opposite of this, i.e. most abundant in the deposit, but does not occur around the cave today (Robey *et al.* 1978).

The original aims of this thesis were to analyze all the material remains from the previous excavations and collate all written reports on Andriesgrond Cave. Only one article has been written on Andriesgrond Cave (Parkington 1978), while several articles have referred to single unpublished reports or additional projects. Artefacts are analyzed and grouped according to their relevant chapters, and in the conclusion an interpretation of these finds is given in conjunction with social psychological theory of stress coping strategies and inter- and intragroup processes.

Lastly, a clarification of the term 'Soaqua' is needed. By 'Soaqua' the writer refers to the San/hunter-gatherers of the S.W. Cape that were called 'Soaqua' by the Khoi pastoralists (Parkington 1977, 1978). The writer acknowledges that the Soaqua most probably had a name for themselves but this is not mentioned in the historical records. The writer also acknowledges that using the name 'Soaqua' to define the hunter-gatherers of this area in pre-1 700 BP times may be problematic, but he argues that it is useful for two reasons. Firstly, it defines a geographical limit to this study and secondly, by definition of the name, it provides a social limit as well. The writer has, however, to compensate for this problem, used the terms 'occupants of the cave', 'prehistoric people' and 'hunter-gatherers of the S.W. Cape' to refer to the Soaqua of pre-1 700 BP assemblages in the S.W. Cape, and the term 'Soaqua' to refer to those people in post-1 700 BP assemblages. Thus the results of this thesis are not meant to infer the social relations of other hunter-gatherers such as the !Kung or those in the Drakensberg, E. Transvaal, and so forth, as it is the 'Soaqua's' material culture and their coping strategies that are used in response to the incursion of the Khoi in the S.W. Cape. There are some basic universalities that are involved in these dynamic and resilient social relations that can be applied to other societies, but these societies **must** be seen in the context of their material culture and geographic locality.

CHAPTER 2:

BACKGROUND OF THE EXCAVATION AND PRESENT REANALYSIS OF THE UNITS.

THE CAVE:

EXCAVATION BACKGROUND:

Andriesgrond Cave (CAR5) was excavated during June/July of 1977 and 1978 under the supervision of John Parkington and Cedric Poggenpoel. The excavation was divided into 42 1m x 1m squares (see fig. 2.2). Squares F11 and G11, unlike other squares, were not excavated down to bedrock. Most of the features that were excavated were plotted , as well as some of the excavated units. Some dumpy level readings were taken e.g. of the bedding hollows and main ash concentration, but not enough to use when reconstructing the sequence. A reconstruction of these features and units yielded some interesting spatial patterns - these will be dealt with later on. It will suffice for now to say that there was a bedding-ash complex, and that vegetation bands and vegetation patches were separated by the main ash concentration.

STRATIGRAPHY:

Stratigraphic drawings were not available at the beginning of this study, and it was only near the end of this study that they were found (see fig. 2.3). Nonetheless the writer, with the help of Royden Yates and J. Parkington, constructed a Harris Matrix (fig. 2.4) using the field note books and in a few cases the bucket count book. A Harris Matrix (Orton 1980) indicates the

FIG. 2.2: EXCAVATION PLANS AND SQUARES

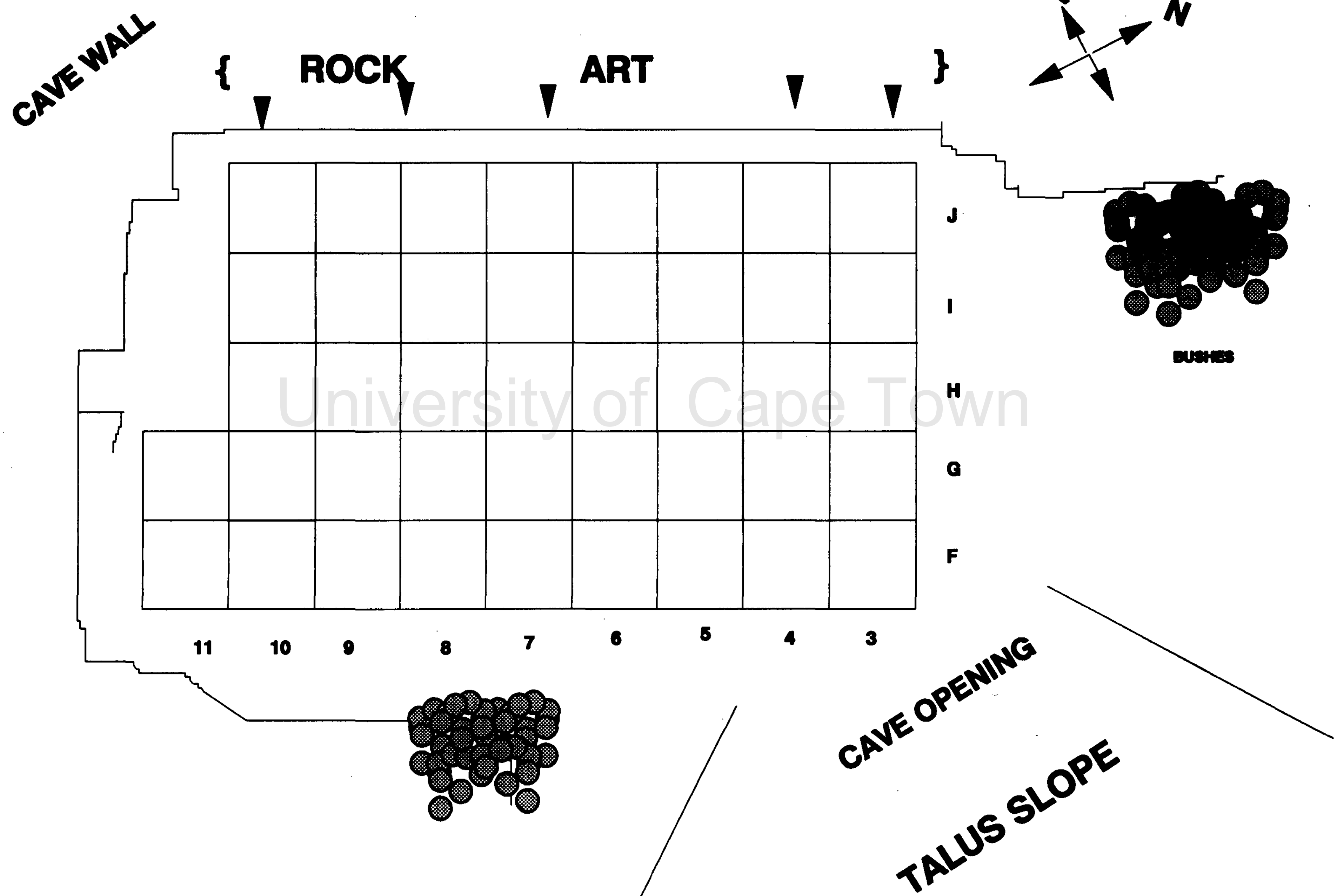
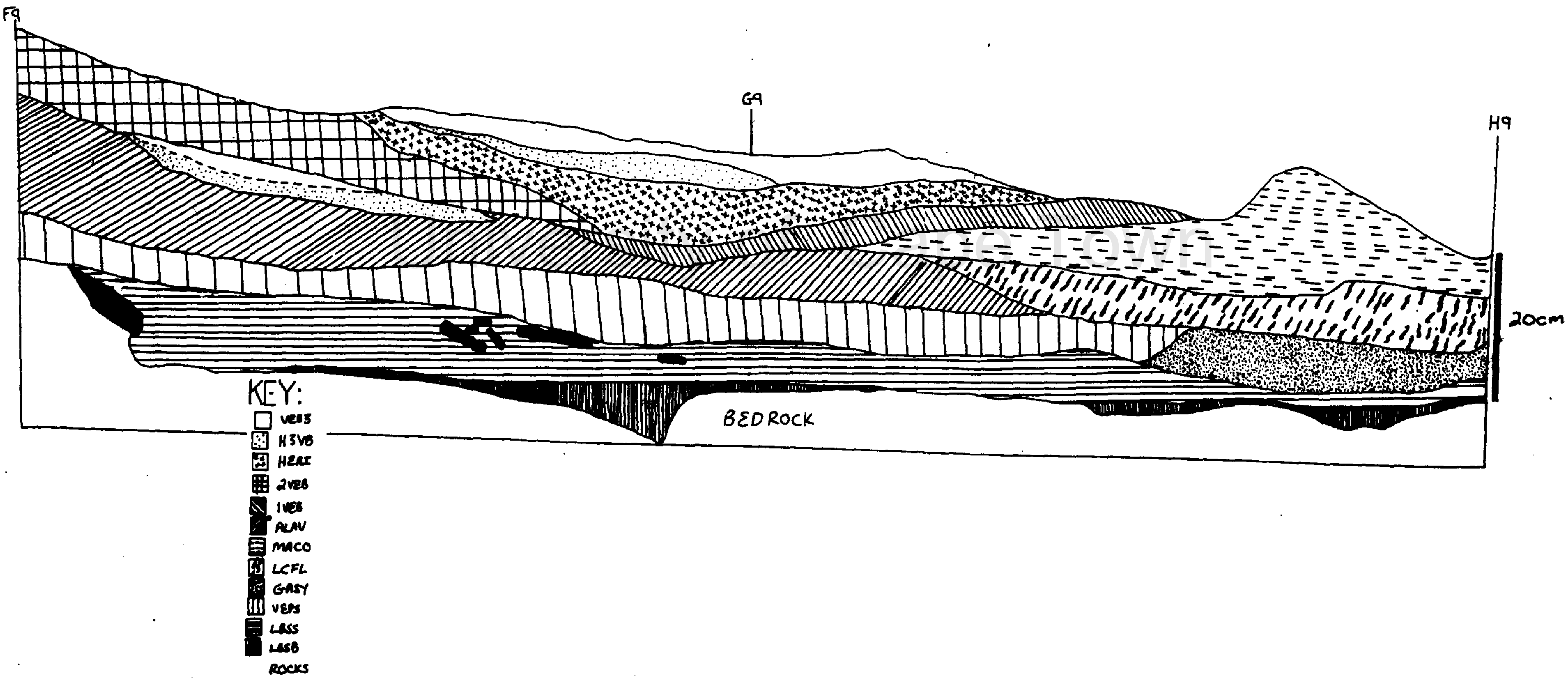


FIG.23:STRATIGRAPHY OF ANDRIESGROND CAVE



stratigraphic relationship between excavated units. Table 2.1 gives the full names of strata (excavated units) and their unit groupings (several strata form a unit), their acronyms and total bucket counts. Bucket counts were not reliable sources for estimating the densities of units as, for example, some features, and/or strata, had bulk samples removed or the bucket count was not complete (.e.g. artefacts from BBSA were found in squares F8, F7, G8 and G7, but the bucket count book indicated only squares F8, G8 and G7). Figure 2.5 shows the bucket counts for known strata.

On completion of the Harris Matrix it became clear that the previous unit groupings employed were no longer tenable. These older units are the units referred to in all previous references to Andriesgrond Cave (Parkington 1978). In the old scheme of things there are 4 of these units identified: UPPER (surface sweepings and Dung Crust; (2) MIDDLE (the main ash concentration, Beddings, upper charcoal flecked, lower charcoal flecked, and the vegetation bands and patches); (3) Vegetation band # 7 and associated deposits; and,(4) BASAL (consisting of Burnt Brown Sand, a spall horizon, and strata on bedrock). In the recent groupings employed here only the Upper and Basal units remain the same.

NEW UNITS:

An Excavated unit will be referred to as a stratum, while grouped strata will be called a unit. Strata were grouped into units as, with a few exceptions, they were very small and the number of finds from each would be inappropriate for individual analysis.

	ACRONYM	FULL NAME	BUCKET COUNT (B= BULK)
UNIT 1:	ALDC	ASH LENSE IN DUCR	0.5
	ASDC	ASH IN DUCR	1.5
	DUCR	DUNG CRUST	155.7
	HADC	HEARTH 'A ' IN DUCR	0.3
UNIT 2A:	1BEP	BEDDING PATCH #1; BEP BELOW DUCR	1
	2BEP	" " #2	2.9
	3BEP	" " #3	0.7
	1VEB	VEG. BAND #1	0.25
	2VEB	" " #2	1
	3VEB	" " #3	2.4
	5VEB	" " #5	2
	6VEB	" " #6	5.4
	ASTS	ASHY TPOS	0.75
	BED1	BEDDING 1	14.5
	BE1B	BED1 BASE	3
	BED2	BEDDING 2	7.5
	BE2B	BEDDING 2 BASE	2.5
	BED3	BEDDING 3	2.5
	BE3B	BEDDING 3 BASE	4.75
	BED4	BEDDING 4	3
	BED5	BEDDING 5	1
	BED6	BEDDING 6	2
	BED7	BEDDING # 7;BEDDING IN I8	10.75
	BE7B	BED7 BASE	1.25 +2B
	BED7	BED7 "B"	?
	BBE7	BEDDING BELOW BASE OF BED7	2
	BED8	BEDDING 8	21.05
	BED9	BEDDING 9	5.7
	BED10	BEDDING 10	3
	BE0B	BED 10 BASE	1
	BEDA	BEDDING AREA	?
	BEDC	BEDDING CLEANINGS	2
	BEDT	TOM'S BEDDING; BEDDING PATCH IN J9	2
	BESA	BEDDING SAND	2.5
	BOBE	BOTTOM OF BEDDING	2.5
	BUR1	BURROW #1	3.8
	COPH	IRID PIT IN H8	0.5
	EYEP	EYE PATCH	?
	FRA1	FRAGMENTED BEDDING #1	2.75
	FRA2	" " #2	13.75
	FRA9	" 9th BEDDING	1
	GARS	GARDEN SOIL; RICH GARDEN SOIL; OLD BEDDING	8.5 + 1B
	GRAV	GRASS PATCH IN VEP 9	?
	HBDC	HEARTH BELOW DUCR	0.5
	HBE2	HEARTH BELOW BED2	0.5
	HBE8	HEARTH ABOVE. TO BED8	0.75
	HBD3	H. BELOW BED8(I3)	0.3
	HBD4	" " " (I4)	?
	HERI	HEARTH I	2.5
	HEI7	HEARTH IN I7	2
	HEI9	HEARTH IN I9	?
	HAF2	H. ABOVE FRA2	0.5
	HFR9	H. IN FRA 9	0.5
	HI22	HEARTH IN IR22	1.65
	HTOP	H. IN TOPS	?

	ACRONYM	FULL NAME	BUCKET COUNT (B= BULK)
UNIT 2A (CONT.)	HUN1	H. UNITS 1,2,3	0.5
	HUN4	H. UNITS 4,5	0.5
	IR 11	IRIDACEAE PATCH # 11	?
	IR 17	" " 17	0.1
	IR 18	" " 18	0.1
	IR 19	" " 19	2.8
	IR 22	" " 22	5.5
	IR 23	" " 3	0.5
	IR 24	" " 24	1
	IR 25	" " 25	0.3
	IR 27	" " 27	0.25
	IR 28	" " 28	0.5
	IR 31	" " 31	?
	IR 32	" " 32	0.25
	IR 33	" " 33	1B
	IR 51	" " 51	1.25
	IRCB	IRID. CLUMP ADJ. TO BED1	1B
	IRCH	" " IN H5	1B
	IRI9	IRID. PATCH IN I9	0.6
	LBSA	LOOSE BROWN SAND	43.25
	LCPI	LINED CORN PIT; BEP IN G9; CORN PIT IN G8	1+3B
	LOBS	LOOSE BEDDING + SAND	6.25
	MIXE	MIXED HEARTH, TOPS + BED10B	0.5
	MOGR	MOTTLED GREY/GREEN	4.5
	OLBS	OLD BROWN SOIL	1.1
	SMH4	SMALL HEARTH IN F4	0.25
	TOPS	TOP SAND	58.6
	ULBS	UPPER LOOSE BROWN SAND	19.25
	ULBS(a)	UPPER LBS (a)	6.5
	VEP7	aka RUBBISH VEG. PIT; VEG. PATCH #7	0.3
	VEP8	VEGETATION PATCH # 8	8.25
	VEP9	VEGETATION PATCH # 9	1
	VEP10	VEGETATION PATCH # 10	1.7
	VEP11	VEGETATION PATCH # 11	12.5
	VELE	VEG. + LEAVES	.75+1B
	VEPB	VEP IN BURROW(2)	1
	VEPF	VEP IN F7 /8	0.5
	VLBS	VEG. PATCH IN LBS	0.5
	WOOL	WOODY LAYER	0.2
UNIT 2B:	4VEB	VEG. BAND #4	?
	GPHM	GRASS POST HOLES IN MAC	0.125
	GRAP	GRASS PIT ; SURFACE OF GRAP	2.25
	H3VB	HEARTH BELOW 3VEB	0.1
	HGRP	H. IN GRASS PIT	0.25
	IGRP	IRID. IN GRAP	2
	IR 14	IRIDACEAE PATCH # 14	?
	IR 16	IRIDACEAE PATCH # 16	2.5
	IR 20	IRIDACEAE PATCH # 21 (THIS A VEGETATION BAND	0.5
	IR 21	IRIDACEAE PATCH # 22 (THIS " " "	1 +1B
	IR 26	IRIDACEAE PATCH # 26	0.25
	MACO	MAIN ASH CONCENTRATION; MAC ABOVE BURY; GREY	CF 61.2
	STOP	STONE PIT	9.75

UNIT 3:	AHCF	ASH HEARTH IN UCF	-
	HUCF	H. IN UCF	0.5
	ONAC	ORANGE MAC	11.75
	UCFL	UPPER CHARCOAL FLECK	88.25
UNIT 7:	ABSA	ASHY BROWN SAND	6
	FIPA	FIRE PATCH	0.75
	HOBR	HEARTH ON BEDROCK	1
	HVE1	HEARTH BELOW VEP1	2.3
	HVE2	" " VEP2	2
	HVE3	" ADJAC. TO VEP3	2
	PAFH	FILL BELOW HEARTH ON B/R	?
	PBSB	PALE BROWN SOIL ON BEDROCK	1.3
	VEP1	VEG PATCH #1	10
	VEP2	VEG PATCH #2	4.1
	VEP3	VEG PATCH #3	?
	VEP4	VEG PATCH #4	1.5
	WHLH	WHITE HEARTH ON LEFT HAND SIDE OF HOBR	1.5
	WHOB	WHITE HEARTH ON B/R	1
UNIT 9:	GASH	GREY ASHY SAND BELOW H#1	6
	IR 53	IRIDACAEA #53	0.5
	PINF	PIT INFILL	0.6
	HE#1	HEARTH #1	2
	HE#2	HEARTH #2	1
	HE#3	HEARTH #3	?
UNIT 4:	7VEB	VEG. BAND #7	3.25
	ALAV	ASHY LAYER & VEG; GREY ASH & VEG	2.25
	ALCF	ASH HEARTH IN LCF	1
	BBSV	BURNT BROWN SAND & VEG.	13.5
	BRGG	BROWN GREY GREEN	12.5
	BURY	BURIAL	5.7
	GASY	GREY ASHY SAND	10
	GRGR	GREY GREEN	22.75
	HLBT	HEARTH IN LBST	1.5
	HLCF	HEARTH IN LCF	0.5
	ILBT	IRID. IN LBST	0.5
	IR 52	IRIDACAEA #52	0.5
	LBST	LIGHT BROWN SAND + TWIGS; LB ASHY SOIL+TWIGS	9.6
	LCFL	LOWER CHARCOAL FLECK	97.75
	VEPS	VEG BELOW STONES/ROCKS	2.125
UNIT 5:	BBSA	BURNT BROWN SAND	4.25
	HLBS	H. IN LBSB	0.75
	LBSS	LOOSE BROWN SAND + SPALLS'a '(9.08);BSSB(10); BSS(25.75)	44.8
	LBSB	LBS BELOW SPALL HORIZON(4);LBSSB(3); LBS ON B/R(37);LBASB(4.5); LBSS'b'(1 2);	61.8
	ORLA	ORANGE LENSE	1
	STOF	STONE FEATURE	6.75
UNPROV.	BUR2	BURROW #2	?
	SCRA	SCRAPINGS ; SWEEPINGS; ETC.	16
	SMH7	SMALL HEARTH IN F7	0.25

FIG. 2. HARRIS MATRIX OF ANDRIESGROND CAVE:

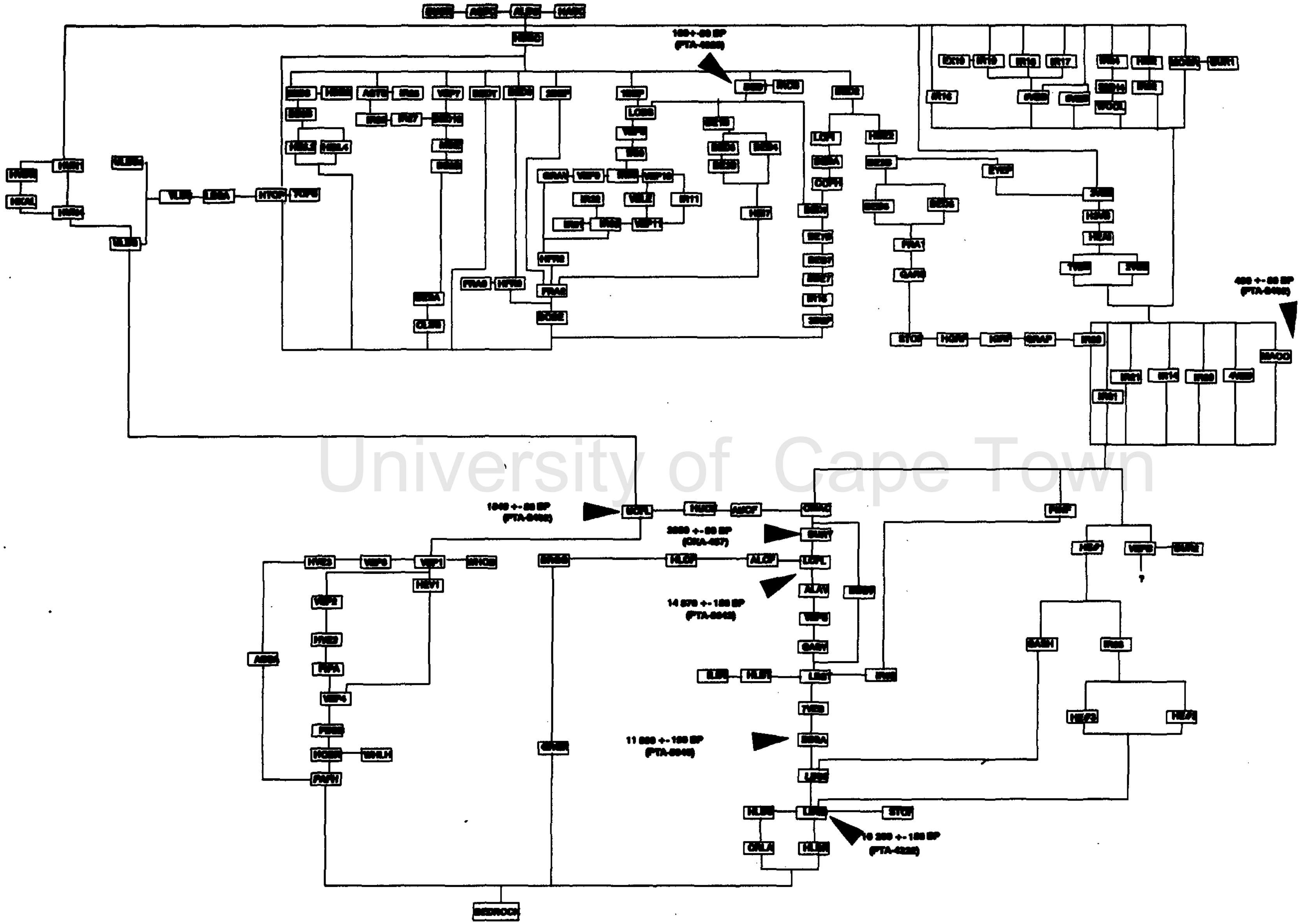


FIG. 2. 5BUCKET COUNTS OF EXCAVATED UNITS

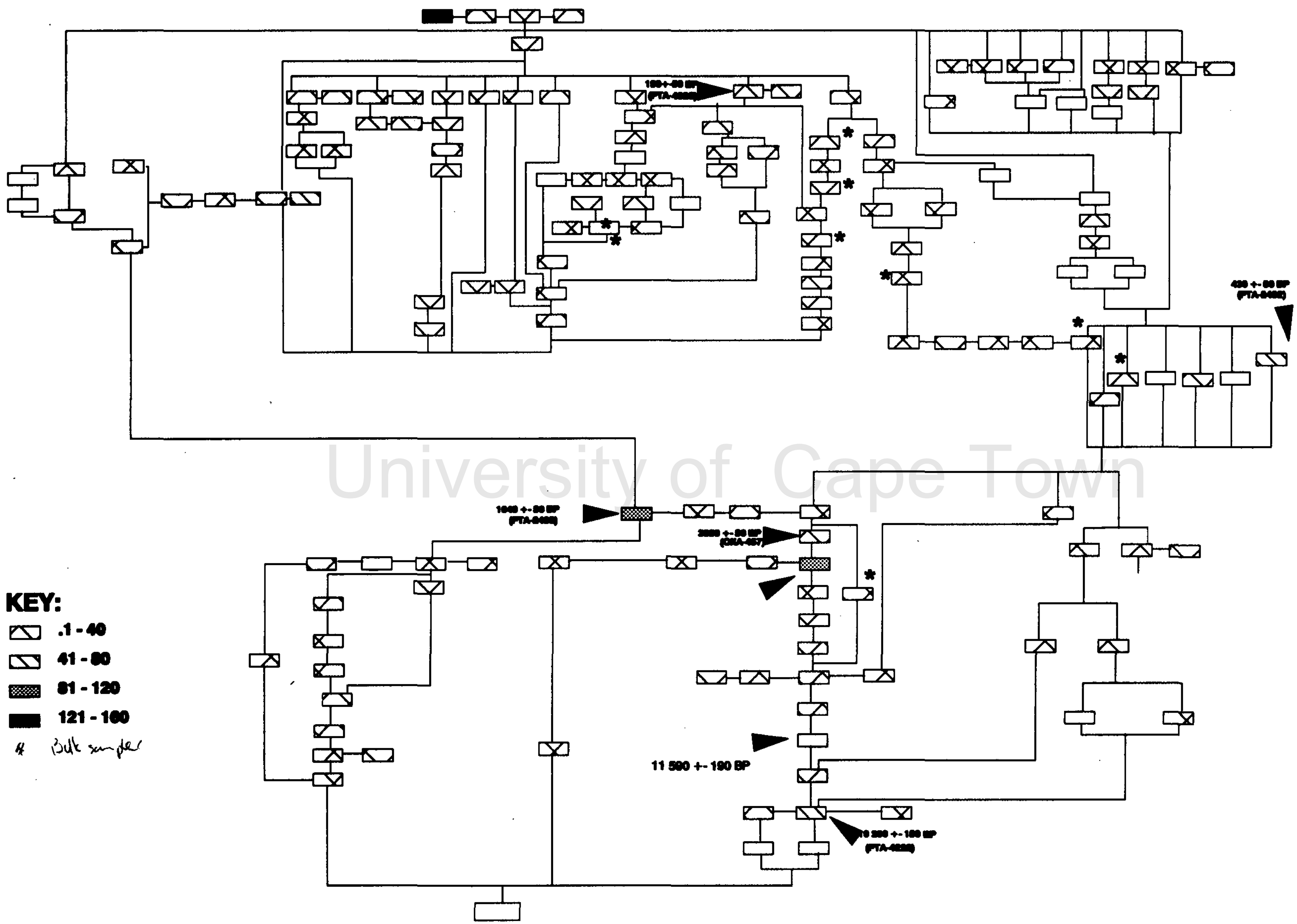
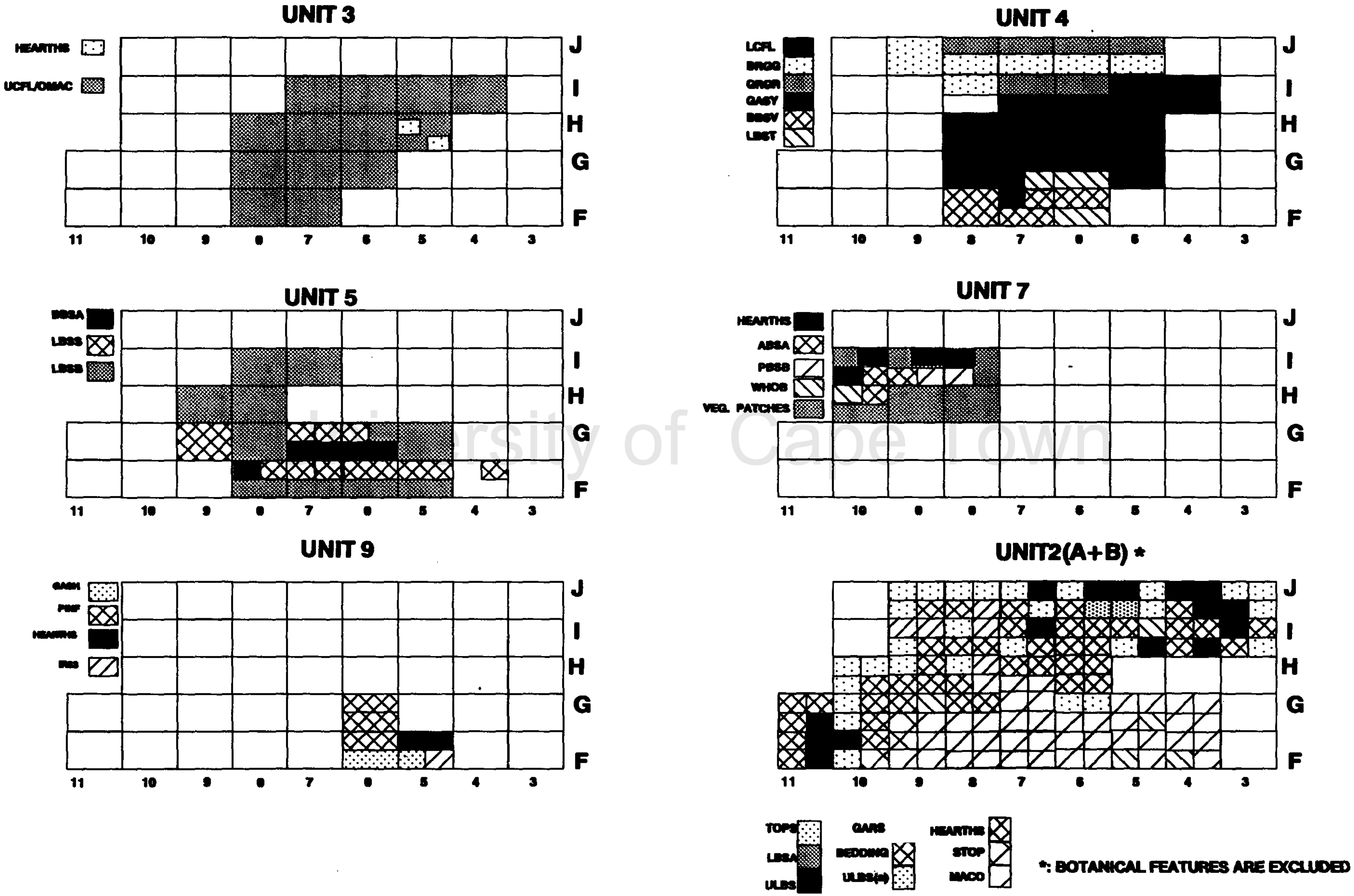


FIG. 2.6: SPATIAL ANALYSIS OF STRATA & FEATURES PER UNIT



Groupings were determined by the stratigraphic relationships between strata, ^{14}C dates, field note observations and references to the results of various previous projects undertaken on the material. A brief description of features and excavated units is given below in order to understand more fully the Harris Matrix (seen in fig. 2.4). Four-letter acronyms, devised by the writer and shown in table 2.1, will be used, from now onwards, to describe each strata. The reader will note that unit numbers (6) and (8) are not referred to. Unit 6 was subsumed within Unit 5 as they are of similar age and have similar lithic assemblages. Unit 8 is now grouped with Unit 4 for similar reasons. The numbers employed were attributed to units in descending order of known age while Units 7 and 9 were 'hanging' in the Harris Matrix - they consisted of only a few, small strata. Figure 2.6 shows the spatial locations of each strata within each unit, except Unit 1 which was ubiquitous over the area excavated.

Unit 1: This unit consists of the surface sweepings, DUCR, and associated hearths/ash lenses. It is the uppermost unit and post-dates 180 ± 50. DUCR occurs over the entire area and varied in thickness. This unit yielded 158.2 buckets making it the second largest unit by volume.

UNIT 2A: This unit consists mainly of the bedding, bedding patches, vegetation patches (#7 - #11), 5 vegetation bands, *Iridaceae* patches, a few hearths and sand (TOPS, ULBS, LBSA). A ^{14}C date of 180 ± 50 BP (PTA-4026) came from BED1, which is directly underneath DUCR. The most important feature in this unit is the pit: LCPI (Lined Corm Pit). This pit was filled mainly with botanical remains (*Hexaglottis virgata*, *Moraea fugax* and

Rhus burchelli var. undulata seeds) and this pit was most probably a storage pit (as will be argued later on). Unit 2A consists of 334.8 buckets, and was sampled by keeping the sieved remains of 9 buckets for more detailed analysis.

TOPS is (wind blown) sand that enveloped the bedding patches. LBSA was similar to TOPS, but is a more sandy deposit near the cave wall which lies below and adjacent to the grass bedding hollows. In some places LBSA rests on bedrock and/or is abundant in charcoal. ULBS(a) was not a vegetation-rich deposit, and the deposit was "stiff" and broke into small nodules rather than grains upon excavation. The excavators stated that ULBS(a) was a hole-fill and that the bones from a right hind leg of a sheep (? - still to be identified) were found in here.

Beddings (as opposed to bedding patches) were sandy, fragmented grass features with a lot of charcoal, dung pellets, and microfauna; termite activity was also present. The grass tended to be long-stranded except in the fragmented beddings, where they were much shorter due to the termite activity and/or poor preservation. The beddings were diagonally distributed parallel to, and a meter or so away from, the cave wall. Bedding patches, found in and around TOPS, were made of bedding grasses but seldom bigger than 300 mm in length. This was good bedding material but not big enough an area to have been slept on.

Vegetation patches were found resting in, under or around the bedding hollows. They did not resemble the bedding material and consisted of plant food debris rather than grasses, as well as some charcoal. Vegetation patches differ from the vegetation bands in context (discussed in chapter 6) and spatial location: vegetation patches are confined to the bedding areas and did not extend into the MACO series.

Iridaceae patches were not localized and the botanical remains tended to be fragmentary and representing plant food debris thrown into shallow basins or heaps. In this way they can be differentiated from the pit: the pit were much deeper than the patches.

UNIT 2B: This unit consisted of the main ash concentration, a stone pit, four *Iridacaea* patches, and 3 vegetation bands. STOP had a prominent patch of *Iridaceae* with some associated stones that were fairly large and lay above some unburnt as well as carbonized plant material. It had large pieces of charcoal, but no white ash; the charcoal seemed to have formed a bottom lining. It is believed to be a roasting pit. STOP lenses into and became part of MACO. A wad of *buchu* (*Diosma hirsuta*) was found in STOP. MACO in parts consisted of well salt cemented ash and charcoal, a feature perhaps related to the dripline. In overall structure MACO was a series of ash lenses. MACO was ^{14}C dated to 430 ± 50 BP (PTA-2462). Unit 2B yielded 84 buckets and 2 bulk samples.

While unit 2A was confined to the inner part of the cave, Unit 2B was confined to the outer part of the cave. The field notes state: "the bedding-ash interface corresponds exactly with the dampness in the excavated area restricted by the dripline." In terms of the ^{14}C dates it was felt necessary to sub-divide Unit 2. However at a more general level these two can be considered as being essentially one unit - a bedding-ash deposit. It is not known from what depth the charcoal sample from MACO came and thus the two may in fact overlap in part. That is, the date from Unit 2A was taken near the top of this unit while the date from MACO may have been taken near the bottom of this strata. A similar bedding-ash pattern is seen at De Hangen (Parkington and Poggenpoel 1971).

UNIT 3: This unit underlies Units 2A/B. It has no botanical features and only two distinguishable hearths (in square H5). Unit 3 includes OMAC and UCFL. The latter has been ^{14}C dated to 1640 ± 50 BP (PTA-2480) and is the lowest unit where Khoi pottery occurred. It yielded 105.5 buckets and is thus the fifth largest unit. OMAC was an orange version of MACO with several charcoal "blotches" and cemented in some places. UCFL had a lot of charcoal and is the same as OMAC except that it was less cemented and nearer the cave mouth. It also underlay ULBS. It was a patchwork of pale and dark soil flecked with charcoal and presumably the result of repeated fire lighting along this arc (i.e. it ran parallel to the bedding arc).

UNIT 7: This unit comprises of four vegetation patches that seemed to be separate from the other vegetation patches of Unit 2A; however, the extent of "separateness" was not well established in the field notes as can be seen in the Harris Matrix. There were 5 hearths and an ashy brown sand (ABSA) enveloping most of this unit. It was a fairly small unit yielding 34 buckets and most probably dates between 3 000 - 4 000 BP. VEP 1-4 were similar in content to other vegetation patches and were enveloped by ABSA. VEP1 and VEP2 reached bedrock in places. HOBR lay in a natural depression bounded by the slightly higher rocks in the front of the square H10. The left back part of the square contained a deep hole, below the hearth, filled with a chalky white material (PAFH).

UNIT 9: This unit comprises of three hearths and two vegetation patches. Their location in the stratigraphy is unknown, and this is reflected in the Harris Matrix. In total this unit yielded only 8.1 buckets. Lithic analysis suggests that it dates in the time span of Unit 4 and/or 5.

UNIT 4: Unit 4 underlies Unit 3. It has only two Iridaceae patches (ILBT and IR52), two vegetation "patches" (VEPS and ALAV) and one vegetation band (7VEB). In the construction of the Harris Matrix it was believed that a human male (discussed later) had been interred into this unit. If the burial hollow was dug into LCFL, then LCFL must pre-date the burial. Previously LCFL was grouped with MACO, UCFL and OMAC. This unit yielded 178 buckets and two bulk samples.

LCFL is a large unit and ^{14}C dated to 14 870 ± 150 BP (PTA-5642). This date came from tortoise bone that is believed to be intrusive into this unit (evidenced by large tortoises and the lithic assemblage). It will be argued that this unit (and Unit 5) are mixed, to various extents with Terminal Pleistocene faunal deposits. It is believed, however, that some components of this unit (specifically the stone tools) are mid to late Holocene in age. This is important and will be discussed fully in chapter 4 where it will also be shown that the stone assemblage includes a number of adzes previously thought to occur only in ceramic period deposits. LCFL was darker and damper than UCFL, with no vegetation, but some marine shell. The fauna was also very fragmented. BRGG is a browner version of GRGR . It was found in the rear wall of the cave and graded into LCFL as it became wetter. GRGR was below BRGG and LBSA; however its relation with other excavated units is unknown apart from that it was below BRGG. BBSV was browner than MACO with a lot of charcoal and pockets of vegetation. It was intercalated with charcoal hearths. GASY and LBST both were truncated by the deep section of UCFL and LCFL in the H-line. They comprised of ashy lenses, with GASY lying above LBST. 7VEB, found below LBST and not covering a large area, was neatly placed in a pit presumably dug out in the LBSB and it truncated LBSS. The burial was of a male (± 17 - 19 years of age) in a flexed/foetal position (Sealy and v.d. Merwe 1986).

UNIT 5: This Unit is the basal unit consisting of the 3 main strata. In total Unit 5 yielded 116 known buckets.

A recent ^{14}C date of 11 590 ± BP (PTA-5646) indicates that BBSA may be mixed with tortoise bone of an older date, or that the date from LBSB may be contaminated. LBSS was a large spall bank that thinned out in places. Both LBSS and LBSB had a high percentage of hornfels/lydianite and MSA formal tools. LBSB was ^{14}C dated to 10 200 ± 180 BP (PTA-4222; from tortoise bone), and it is below BBSA, and tended to be distributed outside the dripline in a deep bank, but penetrating under the spall horizon as a 20-30 mm lense. No vegetation was found in this layer. STOF, occurring in LBSB, was a ring of large and small stones with virtually no soil between the stones and bedrock. It was roughly a 1m X 0.5m rectangle in the east side of square F5. There was no

CHAPTER 3 :

NON-LITHIC ARTEFACTS:

INTRODUCTION:

This chapter deals with the non-lithic artefacts of Andriesgrond cave. While the burial is by no means an artefact, it is a cultural remain and is thus considered in this chapter. Several non-lithic artefacts have yielded interesting information that can be viewed as part of the changing social relations of the Soaqua. In this chapter there has been a positive identification, from the residue of a Dutch clay pipe, of a cannibinol that could come from either *Cannabis sativa* or *Moracaea spp.*. This is the first identification of cannibinols in a hunter-gatherer site in the S.W. Cape, if not southern Africa. Table 3.1 shows the list of non-lithic artefacts, and Table 3.2 the list of finds of modern European origin.

REEDS:

Parkington and Poggenpoel (1971) note that reeds were used for arrows and trays. de la Cour (1978) suggests that the reeds could be *Cyperus sp.* and reed points from *Phragmites sp.* (as this species is hollow and stronger than other reed species). Reeds of various kinds would have been easily obtainable from the Olifants River which is only ± 1km away.

Reed analyses divided the reeds into four categories: cut, split (i.e. reeds that were split in half at either end), perforated (i.e. reeds that were split at either end but have a 'notch' by

ARTEFACTS — **UNITS**

ARTEFACTS	1	2A	2B	3	7	9	4	5	UNPROV.	TOTAL
REEDS	1	93	17	-	-	-	-	-	-	111
WORKED WOOD	5	18	1	-	2	-	-	-	4	30
QUIVER FRAG.'s	-	12	-	-	-	-	-	-	-	12
WOOD SHAVINGS	110	2617	317	-	50	-	13	12	37	3156
MARINE SHELL (grams)	17.1	143	27.6	29.4	3.7	2.5	16.5	9	-	248.8
O.E.S. (grams)	25.9	104.4	20.4	24.1	5.7	0.2	73.3	52.9	26.7	334.5
PENDANTS/RINGS	2	7	1	2	1	-	2	1	1	17
STRING	-	9	2	-	1	-	-	-	-	12
WORKED BONE	1	8	1	1	-	-	1	-	-	12
MASTIC	-	2	1	-	-	-	-	-	-	3
DUTCH CLAY PIPE	-	1	-	-	-	-	-	-	-	1
KHOI POTTERY	9	32	2	1	-	-	-	-	1	[illegible]
STONEWARE	6	28	-	-	-	-	-	-	-	34
O.E.S. BEADS	12	47	17	3	1	-	1	1	4	85
BONE BEADS	-	4	-	-	-	-	1	-	-	5
SEED BEADS	-	1	-	-	-	-	-	-	-	1
GLASS BEADS	-	1	-	-	-	-	-	-	-	1
TOTAL (excl. grams)	146	2880	359	7	18	14	55	-	47	3526

TABLE 3.2: MODERN EUROPEAN FINDS

ARTEFACTS — **UNITS**

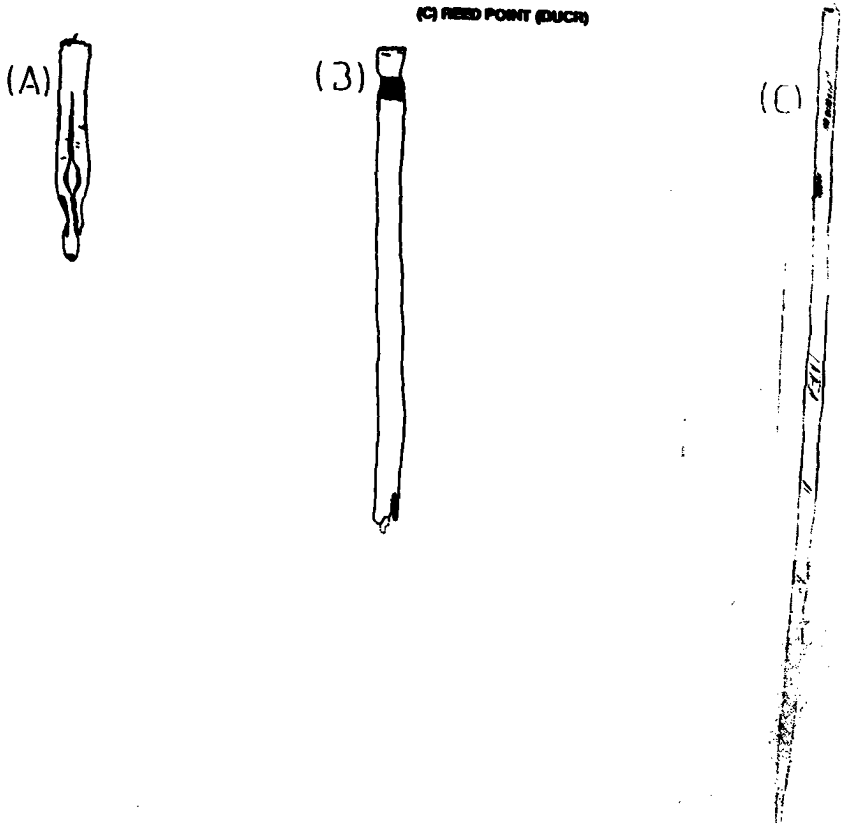
ARTEFACTS	1	2A	2B	3	7	9	4	5	UNPROV.	TOTAL
GLASS	11	5	1	1	-	-	-	3	1	22
BONE KNIFE HANDLE	1	-	-	-	-	-	-	-	1	2
TWEED FABRIC	1	-	-	-	-	-	-	-	-	1
PELLETS	7	-	-	-	-	-	-	-	-	2
METAL "EYE"	-	-	1	-	-	-	-	-	-	1
.22 CARTRIDGE	1	-	-	-	-	-	-	-	-	1
HORSESHOE FRAGMENT	1	-	-	-	-	-	-	-	-	1
TOTAL	22	5	2	1	-	-	-	3	2	39

evidence of it being a hearth and it was to well defined to be a rockfall.

Thus, these new unit groupings are justifiable as can be seen in Unit 4 as it predates the arrival of Khoi pastoralists in the South Western Cape (i.e. ± 1 700 BP) and it has no Khoi pottery. Two mega-units can also be seen: those pre-dating ± 1 700 BP (Units 4 - 9) and those post-dating ± 1 700 BP (Units 1 - 3). It is important to remember, when analyzing these two mega-units, that pre-1 700 BP units cover a much longer time span than the ceramic / post-1 700 BP units and that these groupings are **only** used as general comparisons.

(B) CUT REED (IR22)

(C) REED POINT (DUCR)



these ends) and reed points (fig.3.1a-c shows these divisions, except for split reeds). Parkington and Poggenpoel (1971) and Deacon (1974) give descriptions of how reeds were perforated and then threaded together with the cross-strands either made from string or other reeds. All cut reeds varied in length and may indicate that they are cut-offs, or waste, from mat or tray making. However, some cut reeds show signs of string grooves (fig 3.1b) and suggest that these are from completed objects. The distance between two perforations from 3 reeds (from Unit 2A) was around 65 mm, thus indicating that the reeds were subject to similarly patterned modifications.

In total 111 reeds were found and were almost exclusively restricted to the bedding-ash complex, i.e. Units 2A and 2B. Unit 1 had only one reed point and was most probably used as an arrow shaft (fig. 3.1c).

Unit 2A contained 93 reeds (83.8% of the site total). The beddings had 67 (60.4%) reeds, whilst 12 (10.8%) came from botanical features. Only 1 (0.9%) reed point was found, while 57 (51.4%) were cut reeds, 20 (18%) were split reeds, and 10 (9%) were perforated. Thus, the location and context of the reeds strongly suggest that reed working occurred in the bedding area or that they were better preserved here. A reed in IR22 was ± 90 mm long, broken on one end and the other end was shaved (de la Cour, 1978). It is possible that this piece was shaved so as to fit into another piece of reed. A similar type of reed was found in VEP8; however, here there is discoloration at the one end. This reinforces the idea that reeds were used to connect arrow shafts (de la Cour, 1978).

Unit 2B has 17 (15.3% of site total) reeds. Only one reed was found in MACO. The rest of the reeds were localized to square G5 (in GRAP and IGRP). Of these 8 were split, 7 were cut and 2 were reed points.

No reeds were found in other units. Poor preservation should not be a factor for reeds not being found in lower units, as botanical remains have been found in these lower units. It is however unknown to the writer if any carbonised reed fragments were found elsewhere in the deposit.

WORKED WOOD:

(i) WOOD:

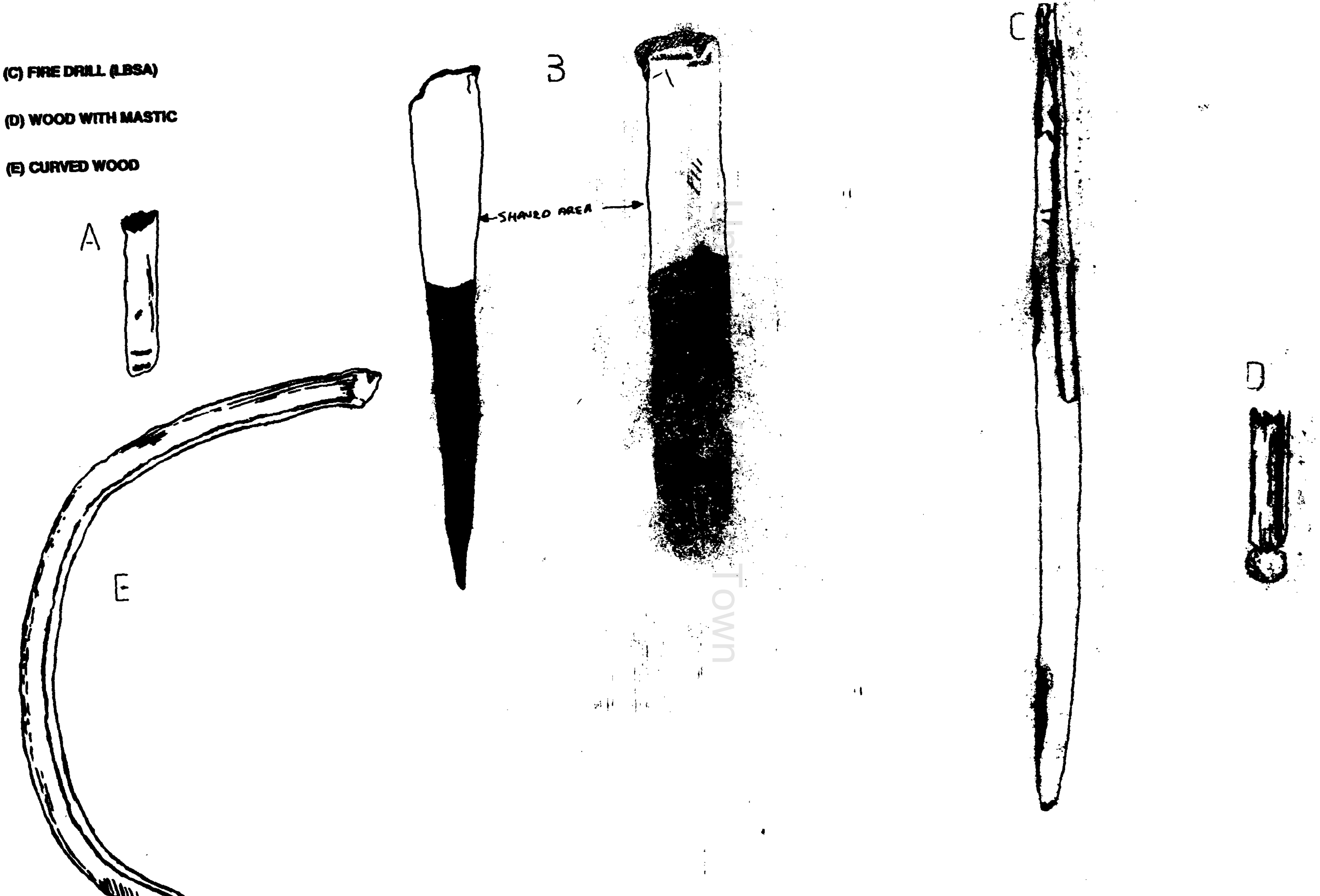
Direct evidence for wood working can be found in a number of artefacts, e.g. pegs and fire drills, while indirect evidence comes from woodshavings. In total 30 pieces of worked wood were found. Fig.3.2a-e shows a selection of these pieces. As with reeds, worked wood tends to be restricted to the bedding areas.

Unit 1 has 5 pieces of worked wood: 4 cut pieces and 1 "peg" from a bored stone found *in situ* (fig. 3.2b). The bark on the one half of this piece has been shaved indicating where the bored stone fitted. This piece of worked wood strengthens the argument for at least some bored stones attached to digging sticks and not other purposes (see Hromnik 1983 for this debate and further references).

(C) FIRE DRILL (LBSA)

(D) WOOD WITH MASTIC

(E) CURVED WOOD



Unit 2A has 18 pieces of worked wood: 10 were cut pieces, 1 was worked, 2 were fire drills and 2 are miscellaneous pieces. A peg in BED1 (sq. H8) shows signs of being hammered (fig.3.2a). The different sizes in the wooden pegs indicates their multiple purposes, e.g. peg hangers, for pegging skins, etc. (de la Cour 1978). There are 2 pieces of worked wood, similar in size and shape to the small peg, that do not have any tapered ends nor any signs of hammering (de la cour 1978). One of these pieces was burnt on the one end and Parkington (pers. comm.) suggests that it is a fire drill bit that was hafted into a reed. These 2 do however have signs of the 'ring-and-snap' method that was used to shorten long pieces of wood (de la Cour 1978) . A fire drill was found in LBSA. It was ± 165 mm long with one end was shaved into a rough point; the other end is slightly shaved and rubbed smooth (fig.3.2c). The most intriguing piece of worked wood comes from BED1 (fig.3.2e). It is curved with one end having an open groove (de la Cour 1978). The ends are rounded and smoothed, the back along the sides have been worn smooth. Deacon (1974, in de la Cour 1978) found several straight pieces of wood at Melkhoutboom with similar grooves. The purpose of this piece of wood is inknown. In BED8 a 75 mm stem was split in half and cut on one side (de la Cour 1978). There are no signs of utilization and it is most probably part of an unidentifiable artefact.

Unit 2B had one piece of worked wood. It is 35 mm long and ± 30 mm in circumference. One end is broken and burnt, while the other is grooved. The tapered end has a resinous substance adhering to it (de la Cour 1978) - fig. 3.2d. Its use is unknown.

Unit 7 has 2 stems that have had pieces notched out. These notched areas are burnt (de la Cour 1978). Their purpose is unknown.

(ii) QUIVER FRAGMENTS:

12 Quiver fragments were found - although one seems to have broken into 2 pieces since de la Cour's analyses. All pieces were found in the bedding, except one that was found in GARS. None of the pieces could be refitted, but they were all of a similar bark - most probably the 'kokerboom'/aloe. Two pieces had ochre stains and another 2 had transverse etchings (fig. 3.3). The curvature of the larger pieces suggests that they were part of a cylinder (de la Cour 1978). One end has a straight smooth edge - the top end of a quiver.

de la Cour (1978) suggests that the transverse etchings were made from string or sinew that was used to hold the quiver together, as at De Hangen (Parkington and Poggenpoel 1971).

(iii) WOOD SHAVINGS:

Apart from worked wood, wood shavings are secondary evidence for wood being used as a raw material. They are also indicative of adzes being used. Mazel and Parkington (1983) stated that these two are most abundant, if not found only, in post-1 700 BP deposits in the W. Cape. They also noticed that an abundance of wood shavings and adzes are indicative of a subsistence base relying mainly on plant foods. The wood shavings are seen to be evidence for wood working on plant gathering tools, e.g. digging

FIG. 3.3: QUIVER FRAGMENTS

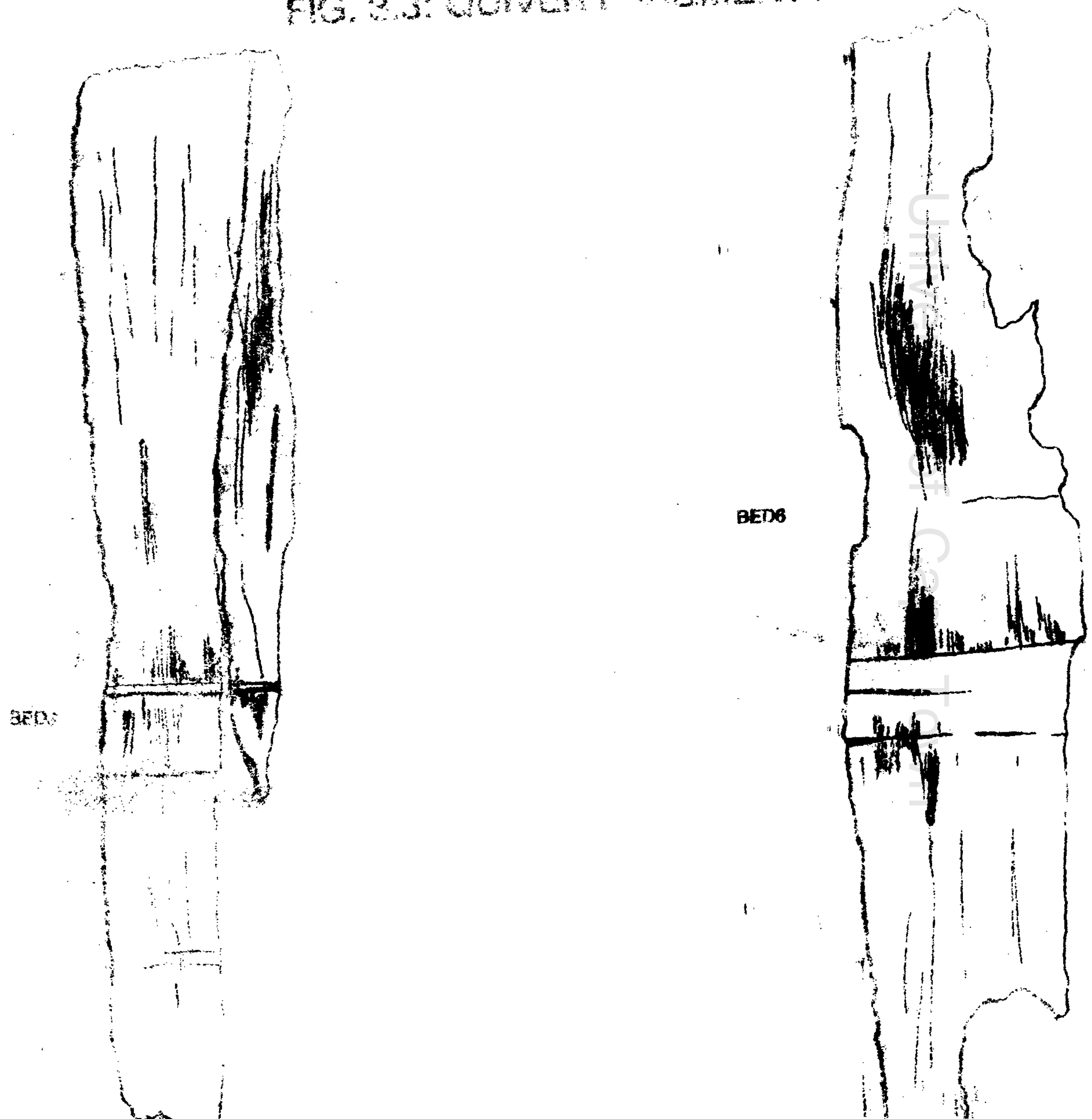
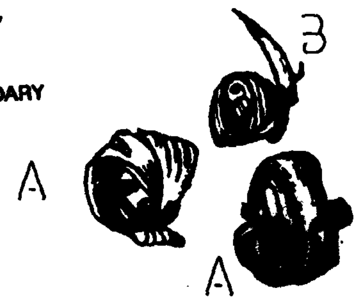


FIG. 3.4: WOODSHAVINGS

(A) PRIMARY

(B) SECONDARY



sticks. While this may be true, Chapter 4 shows that adzes, and wood shavings and adzes, occur in pre-1 700 BP units, although not in such abundance.

de la Cour (1978) counted 1640 wood shavings form Andriesgrond and noticed that this was the greatest number of wood shavings found in any W. Cape site. De Hangen had 844 (Parkington and Poggenpoel 1971), Renbaan had 1091 (Kaplan 1984), and KFR2 had 58 (Nackerdien 1989). Further analyses of bulk samples and other boxes and packets by the writer found more wood shavings, bringing the total to 3156. Kaplan (1984) suggest that there are two types of wood shavings: primary and secondary. Primary wood shavings are long slivers due to initial cutting preparations of the wood, while secondary wood shavings are small, and coiled, shavings some having tear marks. de la Cour (1978) suggested that there are also tertiary wood shavings: these are much smaller than the secondary wood shavings in that they are very small and tightly curved. This type was not found at Renbaan (see fig.3.4). At Andriesgrond only Units 3, and 9 had no wood shavings. This is not surprising as these units are primarily made up of many hearths with few botanical remains, i.e. if botanical remains are not well preserved then one would not expect wood shavings to be preserved as well. However, because these are hearth-like deposits, wood shavings may have been burnt, as in Unit 2B.

Unit 1 has 110 (3.5%) wood shavings. Spatial analysis shows that they tend to be found above the beddings (these could be a result of termite and/or microfauna activity), and near the cave opening.

Unit 2A has 2617 (82.9%) wood shavings: 1697 (53.8%) from the bedding, 690 (21.9%) in botanical features, and 230 (7.3%) in other excavated units. Thus most wood shaving activity occurred in and around the beddings in this unit.

Unit 2B has 317 (10%) wood shavings of which 295 (9.3%) occur in botanical features. The low abundance in MACO is not surprising as it is a hearth / cooking area, and thus many wood shavings could have been burnt.

Units 4, 5, 6, and 7 have 2.13% of the sites wood shavings. The important thing to note here is that all these units are pre-1 700 BP units and that one finds adzes are found in these units. If only wood shavings or adzes were found in these lower units then one could argue that either are intrusive; however, the fact remains that both occur.

The high percentage of wood shavings in post-1 700 BP levels is similar to De Hangen (100 %), KFR2 (98.3%) and Renbaan (100%) - Parkington and Poggenpoel (1971), Nackerdien (1989), and Kaplan (1984), respectively.

SHELL:

Marine, land and ostrich egg shell were found at Andriesgrond. While they were used as a food source, they were also used as artefacts, e.g. beads/pendants, water bottles, spoons/spatulas.

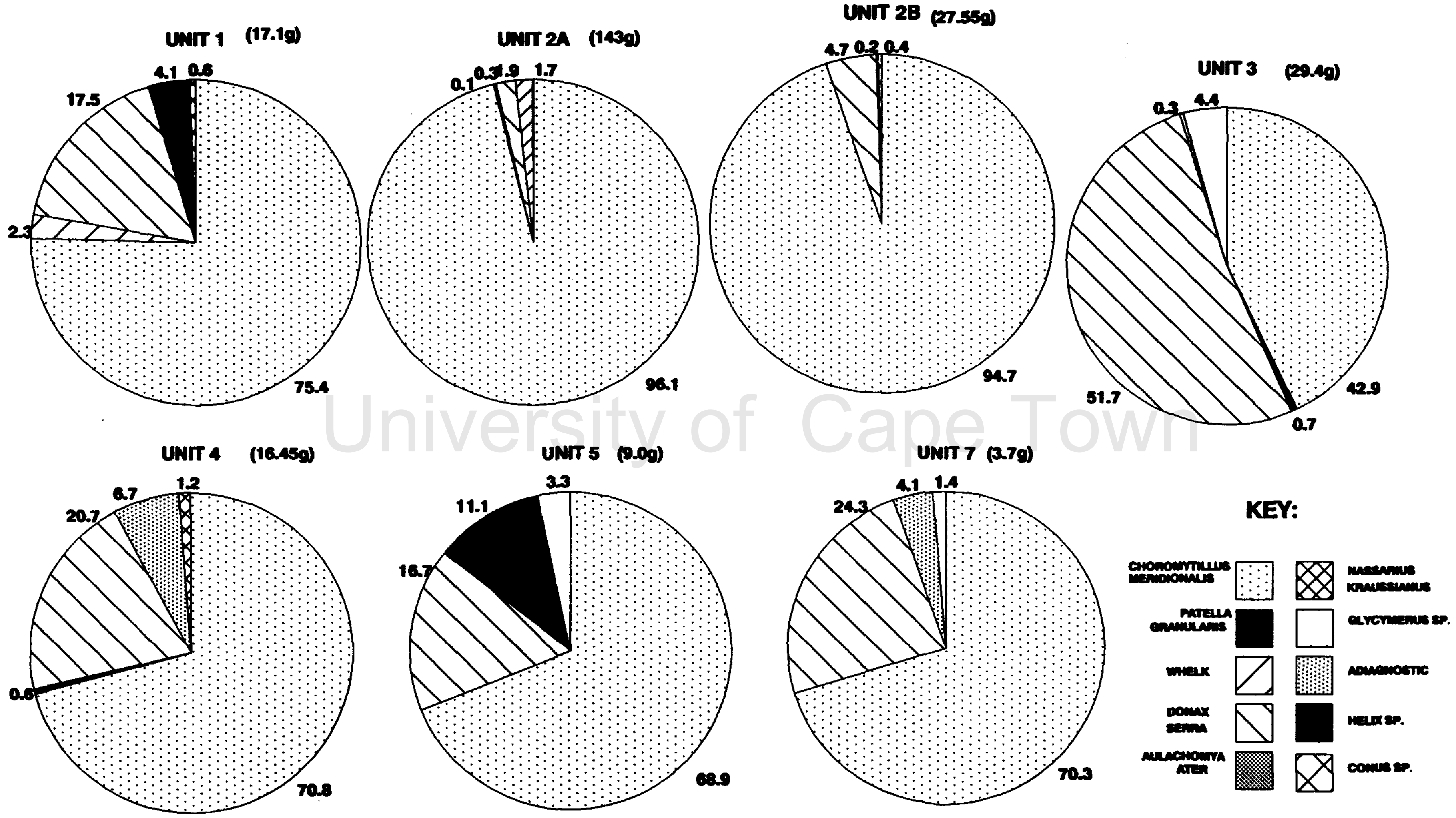
Working out densities of the shell per unit volume was not possible (see Chapter 2); thus, the proportions between O.E.S.

and bone were used, while percentage differences between units were used for different marine shell species. One further problem arose when looking at marine shell was that several pieces of *Choromytilus meridionalis* were placed on display without being weighed first: the display cannot now be found! These pieces came from Units 2A and 2B. If something was put on display it means that it was significant enough in nature. Unfortunately these are now "lost".

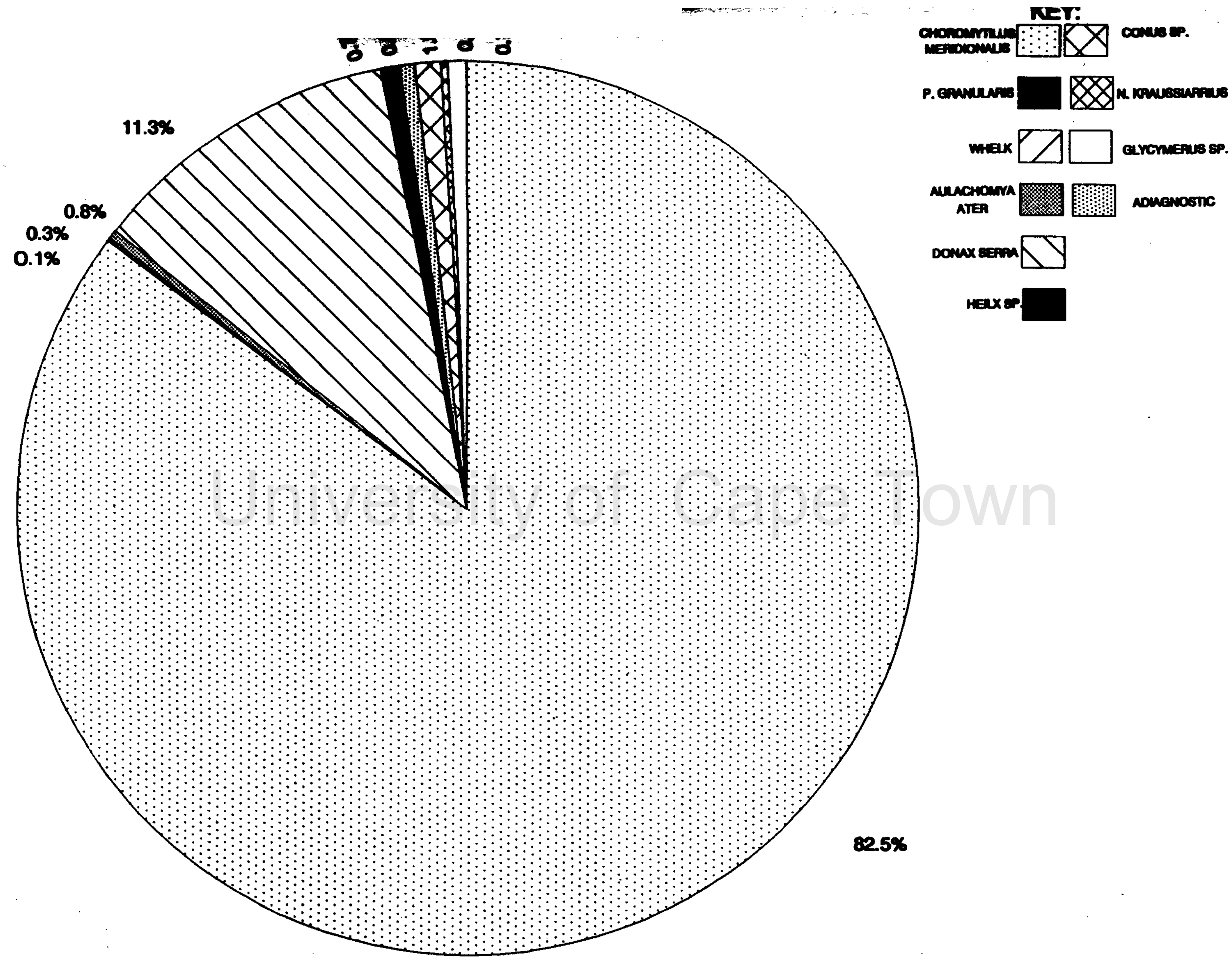
(i) MARINE SHELL:

In total 248.8g of marine shell was found; 1.7g of land snail (*Helix sp.*) was also being found. Table 3.3 and fig.3.5 shows the percentage differences of shell species per unit, while fig.3.6 shows total percentage species differences from the whole site. From the latter one can deduce that *Choromytilus meridionalis* (Black mussel) and *Donax serra* (White mussel) comprise 93.8% (82.5 % and 11.3%, respectively) of the total shell weight. This is not surprising as these two species were most probably used for food preparation than for nutrition. De Hangen (Parkington and Poggenpoel 1971) had two pieces of *C. meridionalis* that were wrapped in leaves and this further suggests that these shell species were not used primarily for nutrition. More evidence for marine shell being utilized comes from 2 pieces of *Choromytilus meridionalis* that have cut marks or other signs of working (fig.3.7b). The possibility of *Donax* scrapers must not be ruled out. Although none were found at Andriesgrond, one polished *Donax serra* piece was found in Unit 3 (fig.3.7a).

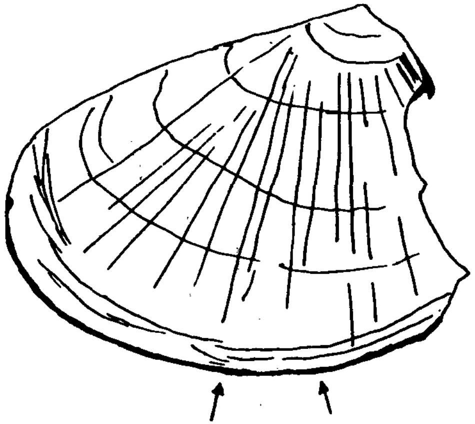
FIG. 3.5: SHELL PERCENTAGES PER SPECIES FOR EACH UNIT

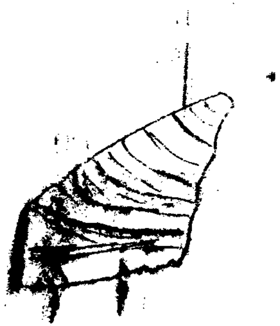


UNIT 9 HAS 100 % (2.6g) OF C. MERIDIONALIS.


KEY:
CHOROMYTILUS MERIDIONALIS
CONUS SP.
P. GRANULARIS
N. KRAUSSIARRIUS
WHELK
GLYCYMERUS SP.
AULACHOMYA ATER
ADIAGNOSTIC
DONAX SERRA
HEILX SP.
11.3%
0.8%
0.3%
0.1%
82.5%

(A) POLISHED DONAX SERRA EDGE (UCFL)





(B) CUT MAARKS ON C. MERIDIONALIS ([illegible])

(C)POLISHED EDGE (C. MERIDIONALIS) (VEP11)

The rest of the marine shell can be considered as being adornments. These are *Nassarius kraussianius* (7) , *Conus sp.* (2), *Glycymerus sp.* (3) and *Turbo sarmaticus* (1). These adornments can also give clues as to where the occupants travelled to obtain these shells, if they did not obtain them by means of barter or gift exchange, and to palaeoenvironmental change.

N. kraussianus is only found in estuarine environments (A. Jerardino pers. comm.). The closest estuarine environment to Andriesgrond is the Verlorenvlei; however, this was not estuarine during the post-1 700 BP levels at Andriesgrond (A. Jerardino, pers. comm.). This means that people were travelling elsewhere for this species of shell (A. Jerardino pers. comm.). Other possible estuarine sources can be found south near Port Owen, or north near Wadriftsoutpan. Unfortunately not much archaeological work has been done in these areas and their chronology and palaeoenvironments are not known. Wadriftsoutpan is, however, presently permanently cut off from the sea and is thus never a true estuarine environment even though it is saline and can thus be discounted for the time being until further research in this area has been done. The other adornments, e.g. *Conus sp.* and *Glycymerus sp.*, also give an indication of where the shells were obtained. Both of these are found in warm water, namely the south and east coast. Saldanah Bay could also be a possible location as it is 1-2° C warmer than the rest of the west coast (A. Jerardino, pers. comm.). These adornments will be discussed in more detail in the "pendant" sub-section further on.

While there are hiatuses at EBC and TC (between c.8 - 4 000 BP and c.3 - 2 000 BP) there is marine shell at Andriesgrond, i.e.

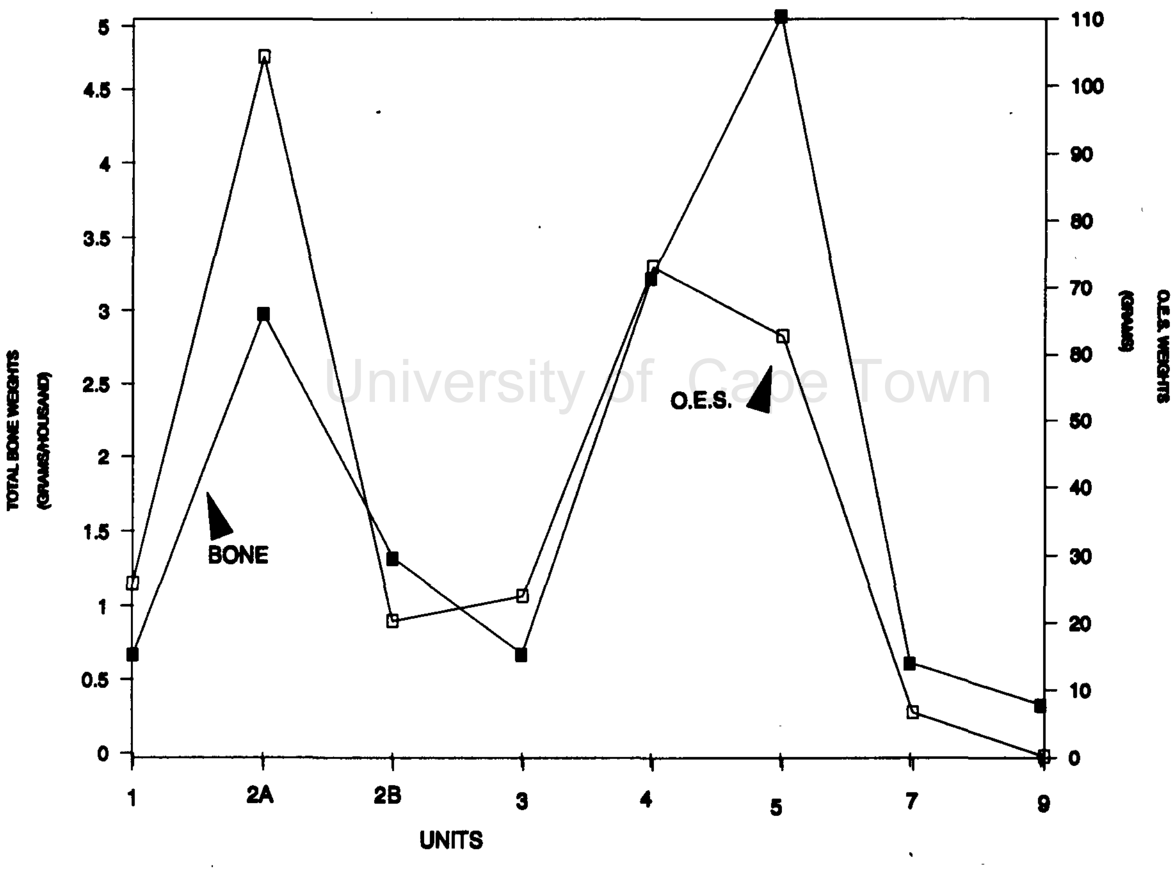
Units 4, 5, 7, 8, and 9. These units combined only yield 22.8g, or 9.3% of total edible marine shell. This would suggest that while coastal visits did occur during these two hiatuses, they were not frequent and/or that they occurred for some other reason apart from for food collection, such as raw materials. It is possible that *C. meridionalis* could be preserve better than limpets, however, the quantities of this mussel species does not suggest that it was used for food. Marine shell, dating to between 8 - 4 000 BP, has been found at Klipfonteinrand as well (Thackery 1977). What can be concluded is that at least east-west (mountain-coast) mobility contact with the coast did occur, while a north-south (Andriesgrond-Malmesbury) mobility may have been restricted (R. Yates pers. comm.) (discussed in chapters 6 and 8).

(ii) O.E.S.:

Cross-fitting of O.E.S. fragments was attempted, however, they were either too fragmentary or in a very poor state of preservation, and to avoid further damage this was discontinued.

As stated above O.E.S. densities could not be worked out; thus, they were analysed by comparing the O.E.S. weights to bone weights of tortoise and total bone weights (fig. 3.8). For the latter microfauna was omitted as the writer will show in chapter 5 that microfauna is mostly post-depositional. The ratios of O.E.S. to these two bone categories was also measured, i.e. a high ratio would indicate that less O.E.S. occurred in that unit. From table 3.3 it can be seen that the lowest O.E.S. to bone ratios tend to occur in post-1 700 BP units. Fig.3.8 shows that

FIG. 3.8: O.E.S. TO BONE WEIGHTS PER UNIT



an increase in tortoise bone and total bone weights correlate with an increase in O.E.S. in all units except Unit 3. In Unit 3 there is more O.E.S. than either bone category. That is, O.E.S. was deposited in the cave at a higher rate than bone in Unit 3, while Unit 5 shows the inverse. This could be related to diet.

O.E.S was also used for adornment (e.g. beads and pendants) and water-flasks. In total 9 engraved pieces of O.E.S. were found. Of these 9, 8 were decorated on the exterior surface, whilst one had faint striations on the inside walling of the shell (see Parkington and Poggenpoel 1971 for similar striations). Fig 3.9 shows the engraved O.E.S. from Andriesgrond. Unit 3 had 2 (22.2%) of the engraved O.E.S., Unit 4 had 4 (44.4%), Unit 5 had 2 (22.2%), and Unit 9 had 1 (11.1%). That is 77.8% (7 pieces) are found in pre-1 700 BP units.

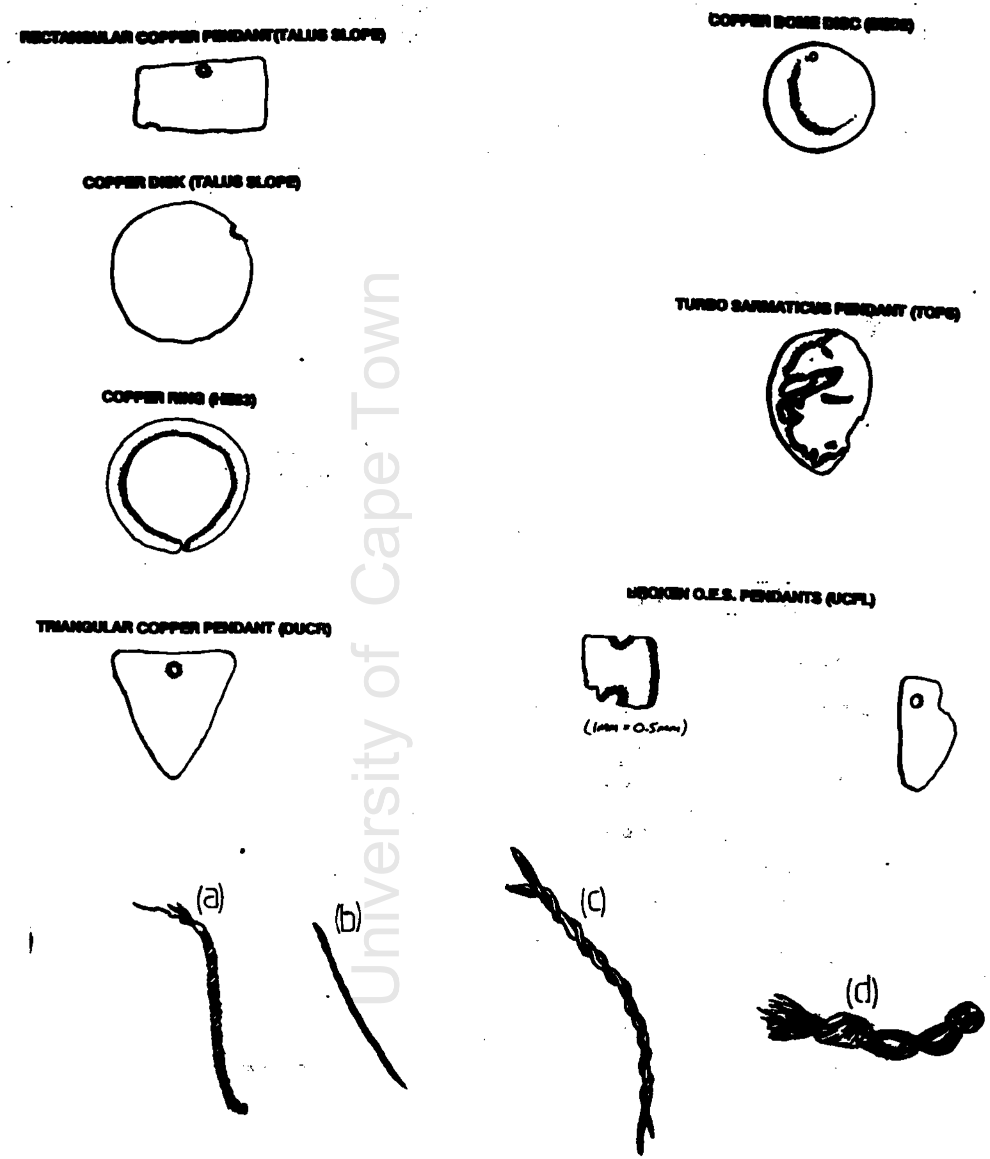
PENDANTS AND RINGS:

In total 17 pendants and a European brass ring were found (fig. 3.10). Of the pendants 70.6% were made from marine shell, 5.9% from O.E.S., 5.9% from fresh water shell and 17.6% from brass. Unit 2A had the most of these artefacts (41.2%, or 7), while the rest of these adornments were scattered throughout the deposit: Unit 1 = 2 (11.8%); Unit 2B = 1 (5.9%); Unit 3 = 2 (11.8%); Unit 4 = 2 (11.8%); Unit 5 = 1 (5.9%), and; Unit 7 = 1 (5.9%).

Of the shell, only one O.E.S. pendant was found (in TOPS) that was fragmented and had two perforations. There were 12 marine shell pendants in total and one fresh water shell pendant. One (8.3% of marine shell) *Turbo sarmaticus* pendant was found in

FIG. 3.10: PENDANTS

ALL DRAWINGS TO SCALE UNLESS SPECIFIED:



TOPS. It had been polished on both sides. The nearest location for *T. sarmaticus* is at Yzerfontein today (D. Halkett pers. comm). One (8.3%) freshwater shell pendant, broken at the perforation, was found but no identification of it has yet been made. There were 7 (58.3%) *Nassarius kraussianus* pendants. These were ground on one side and most probably tied with string to form a necklace. Unit 1 had 1, Unit 2A had 2, Unit 2B had 1, and two came from Unit 4. As discussed already, this species is also a palaeoenvironmental indicator as it is found in estuarine sources only. There were 3 (25%) *Glycymerus sp.* pendants found: one each in Units 3, 6 and 7. They were perforated at the apex. Unit 2a had 2 *Conus sp.* pendants.

Metal adornments were made from a European brass (R. Yates pers. comm., from a mislaid undergraduate study). A brass triangular pendant came from Unit 1, Unit 2A had a brass ring and one brass pendant. This pendant was circular and domed shaped. A rectangular brass pendant and a brass disc came from the talus slope. All of these were 'crudely' cut, except for the domed disc that had been 'filed' around the edges. Thus, these metal adornments indicate contact with colonial farmers.

STRING:

Twelve pieces of string were found; all came from post-4 000 BP units. In some cases the string was very fragmented, or even burnt. Where this was the case, and if the string came from the same feature and had the same diameter, it was considered to be from the same piece, e.g IRI9 had 12 fragments but a total of 2 pieces of string.

Unit 2A had 9 (75%) pieces of string: 3 from beddings and 6 from *Iridaceae* patches. All were from different pieces. BED1 had a double stranded piece of string with two knots 15mm apart and it was ±40mm long (fig. 3.11d). BED7 had a piece of string wound (not stranded) from an indeterminate species of plant fibre (fig 3.11c). IRI9 had 3 pieces of string. BED8 had a very thick piece of strong fibrous string (fig. 3.11e). It was ±110mm long with a diameter of ±20mm, and more rope-like than string (de la Cour 1978). De Hangen had a similar piece of 'rope' (de la Cour 1978). IR22 had 2 pieces of very thin string. One was from a grass-like fibre a twisted in three strands (fig.3.11a), while the other was double stranded and of a different fibre (fig. 3.11b). LCPI had a very thin piece of double stranded string similar to that of IR22. Unit 2B had 1 piece of string from MACD (a medium-thin piece of string that was double stranded) and 1 from GRAP (double stranded). Unit 7 had a very fragmented piece of cording.

Thus, string varies in thickness and make-up. This was most probably for different uses, e.g. the very thin string was used to string up O.E.S. beads, the thicker pieces for traps, nets, etc.

WORKED BONE:

Excluding those pieces that were used as beads, 12 pieces of worked bone were found. Unit 1 has one possible piece of worked bone. Unit 2A has one bone point, 3 awls, 3 tortoise bowl fragments and one link shaft. The bone point (fig. 3.12f) is ±75mm long and from a large mammal bone. It also has many small

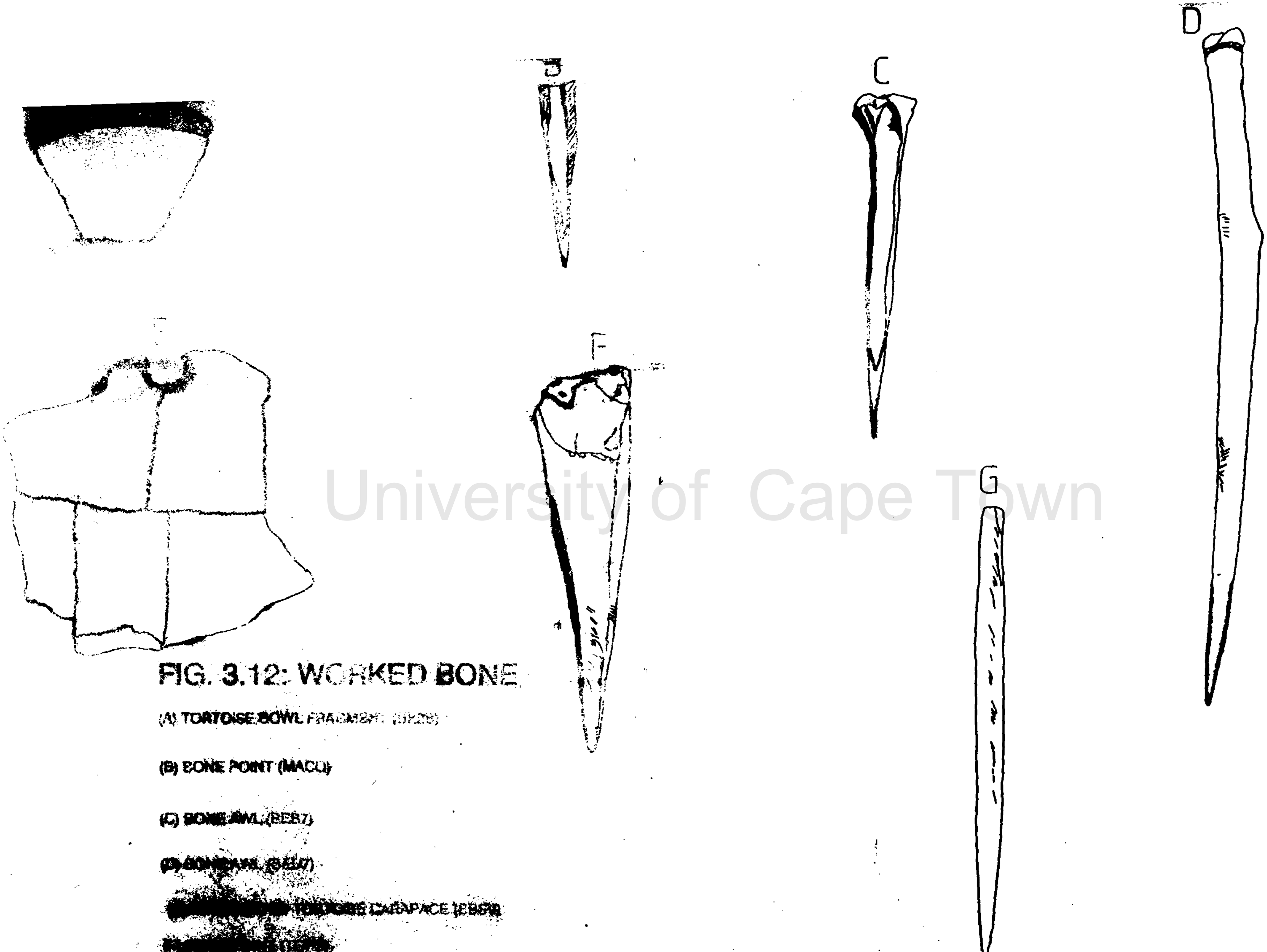


FIG. 3.12: WORKED BONE

(A) TORTOISE BOWL FRAGMENT (DP2?)

(B) BONE POINT (MACU)

(C) BONE AWL (BEB7)

(D) BONE AWL (BEB7)

(E) [illegible] TORTOISE CARAPACE (EBS?)

(F) [illegible]

(G) BONE LINK SHAFT

striations (cutmarks or due to working). This was found in TOPB. All of the awls were found in the bedding and they all had natural butts (de la Cour 1978). The longest of these was 130mm long (fig. 3.12d), and the smallest came from a *Procavia capensis* (dassie) fibula. The link shaft is 85mm long and very polished (fig. 3.12d). The tortoise bowl carapace fragments came from different features and there were no cross-fittings (fig. 3.12a). Unit 2B had one bone point (from MACO) that was ±75mm long with a polished side and several striations (fig. 3.12b). Unit 3 had one burnt and broken bone point. Unit 4 had one perforated tortoise carapace fragment (from BBSV - see fig. 3.12e). Its function is unknown.

All awls have sharpened, pointed ends that have been finely polished (de la Cour 1978). The low frequency of bone artefacts suggests one of four things: bone was not a favoured raw material; they were valued and not readily discarded (de la Cour 1978); worked bone pieces had specific functions; or a combination of these. The different sizes of awls also indicates their multiple/varied functions, e.g. making O.E.S. beads, stitching, etc..

MASTIC:

Many pieces of stones had mastic or traces of mastic, most noticeably the adzes. Mastic was used on stones for hafting and Deacon and Deacon (1980) give a full description of hafting on stone tools. One piece of mastic (from BED2) had a glassy appearance. The second piece of mastic, or more appropriately resin, was found in GRAP. It was very thin (±15mm long) and had

FIG. 3.14: DUTCH CLAY PIPE FRAGMENT (FRA2)

FIG. 3.15: STONEWARE SHOWING BULB OF PERCUSSION

FIG. 3.16: DECORATED KHOI POTTERY

Fig.3.14: Mass Spectrometer Results From The Residue of a Dutch Clay Pipe

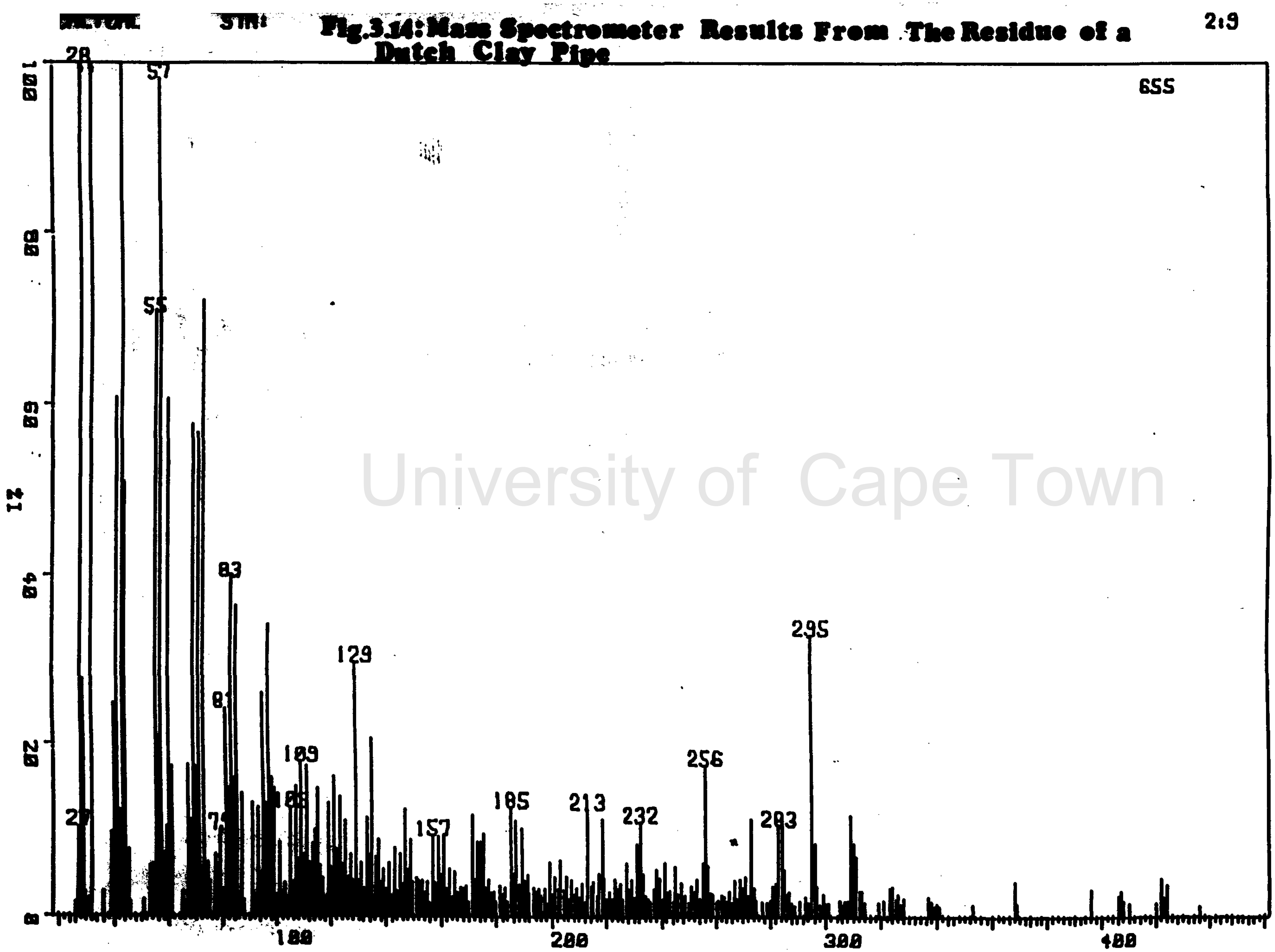
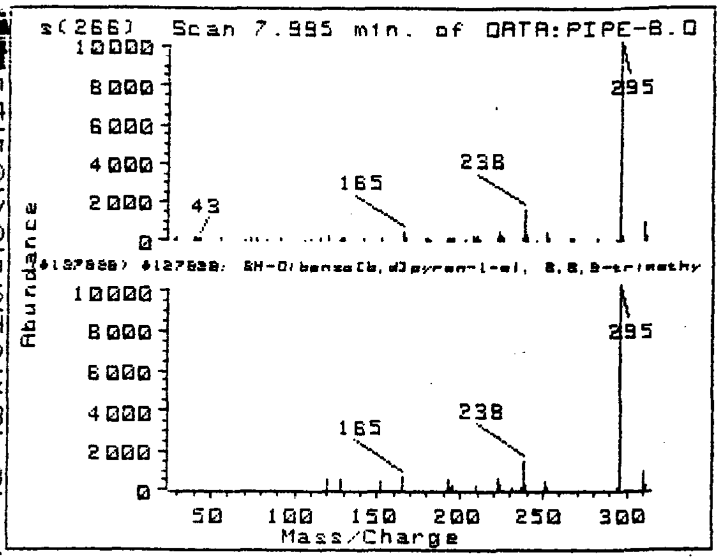


Fig.3.14b: Search for Cannabinols – detected [Sample# 2]

GRAPHICS RESULTS   Version 3.2 18-Apr-88

[illegible]	
6H-Dibenzo[b,d]pyran	
000521-35-7	94
6H-Dibenzo[b,d]pyran	
000521-35-7	90
1,4-Benzenedicarboxy	
004147-84-6	50
6H-Dibenzo[b,d]pyran	
000521-35-7	45
DIPYRROMETHENE-DIETH	
	39
Phenanthro[9,10-d]ox	
004410-14-4	38
2-(1'-(P-DIMETHYLAMI	
	28



TEXT RESULTS   Version 3.2 18-Apr-88

[illegible]	
6H-Dibenzo[b,d]pyran	
000521-35-7	94
6H-Dibenzo[b,d]pyran	
000521-35-7	90
1,4-Benzenedicarboxy	
004147-84-6	50
6H-Dibenzo[b,d]pyran	
000521-35-7	45
DIPYRROMETHENE-DIETH	
	39
Phenanthro[9,10-d]ox	
004410-14-4	38
2-(1'-(P-DIMETHYLAMI	
	28

Entry# = 127828   CAS Num = 000521-35-7
Company ID Num = WILEY 1/88
Mol.Weight = 310.192   Retention Index = 0.000
Melting Point = °C   Boiling Point = °C
Name =
6H-Dibenzo[b,d]pyran-1-ol, 6,6,9-trimethyl-3-pentyl

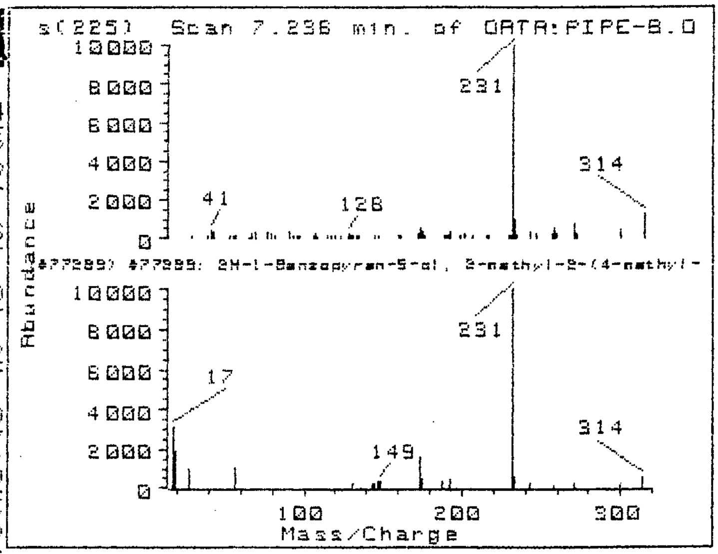
Mol. Formula =
C21H26O2

Misc. Info. =
T B666 HO IHJ CQ E5 I I M

Fig. 3.14c: Search for Cannabinols - detected [Sample*1]

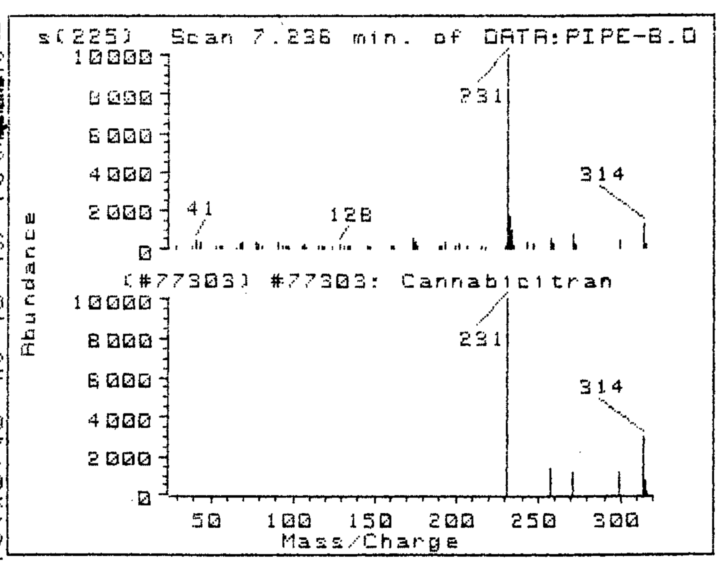
GRAPHICS RESULTS Version 3.2 18-Apr-88

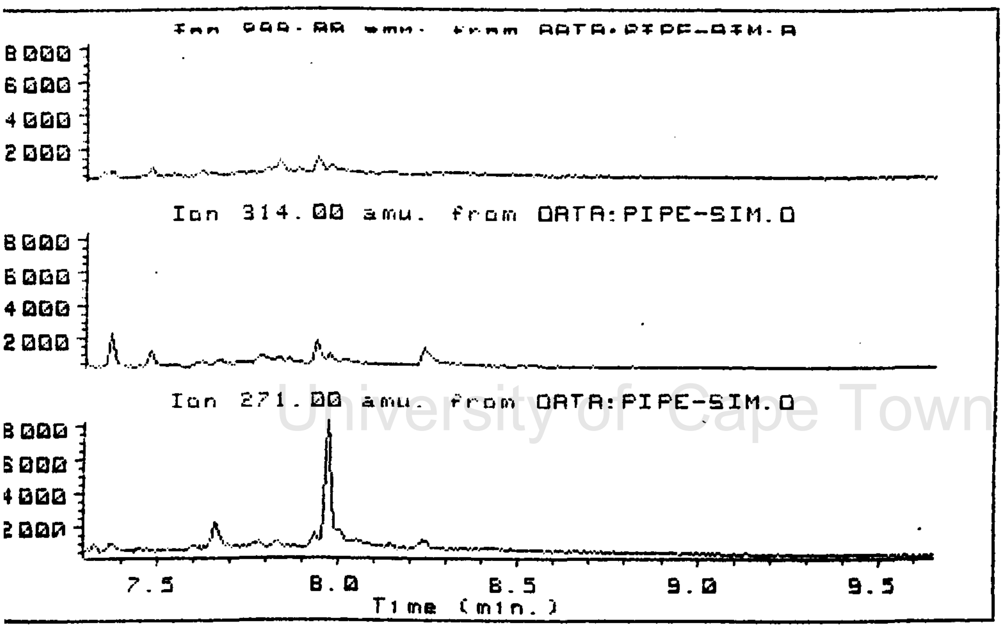
[redacted]
Cannabicitran
031508-71-1 64
4-tert-Butyl-1,3,3,5
085225-95-2 59
Cannabidiol
013956-29-1 56
Cannabidiol
013956-29-1 50
Cannabichchromene
020675-51-8 42
5-Norkhellin
000478-42-2 40
Benzene, 1,3,5-tris(
001460-02-2 40
.DELTA.8 TETRAHYDROC
014132-18-4 39



GRAPHICS RESULTS Version 3.2 18-Apr-88

2H-1-Benzopyran-5-ol
018793-28-7 72
[redacted]
4-tert-Butyl-1,3,3,5
085225-95-2 59
Cannabidiol
013956-29-1 56
Cannabidiol
013956-29-1 50
Cannabichchromene
020675-51-8 42
5-Norkhellin
000478-42-2 40
Benzene, 1,3,5-tris(
001460-02-2 40
.DELTA.8 TETRAHYDROC
014132-18-4 39





T: --------------
Z: Set of 3 Trace Objects.
Y: --------------
X: --------------

D]

3.14d: Search for Δ^9-THC [SIM m/z 231, 299, 271, 314] - not detected.

residue had traces of *cannabinols* in it (one sample yielded a 94% confidence interval - see Budabari 1989 and Moffat 1986). The active ingredient of *Cannabis sativa* (delta^{9}-THC) was not found in the residue (fig 3.14d); however, this is not surprising, as it would have been depleted when smoked and exposed to high temperatures (B. Williamson pers. comm.). Unfortunately the chemical constituents of *Moraceae* are presently unknown to the writer, but are presently under investigation. Fox and Norwood (1982) do not mention that *Moraceae* was used by indigenous people as a hallucinogenic and/or euphoric or tobacco, neither was *Moraceae* found in analysed botanical samples and this could indicate that it was *Cannabis sativa*. That this occurs in the same unit as LCPI is important when considering environmental and social stress amongst the Soaqua and the way that a hallucinogenic is used with an outgroup's material culture (discussed in chapters 6 and 7).

POTTERY:

77 Pottery sherds were found: 45 are Khoi, or Cape Coastal Midden Pottery (Rudner 1968), and 32 were European stoneware fragments.

STONEWARE:

An attempt at refitting the stoneware fragments was made by the writer, and it would seem as if all fragments came from the same vessel - only the very small fragments were not refitted. Some of the fragments had small bulbs of percussion on them (fig 3.15). Whether this was due to intentional flaking , or due to the vessel falling on the ground is uncertain. However, these fragments were widely dispersed and this may indicate the former as more likely. Only 6 (18.6%) pieces came from DUCR (Unit 1). The rest came from TOPS (31.3%), Beddings (46.9%) and HE83 (3.1%). The occurrence of stoneware in the deposit indicates contact with colonial farmers.

KHOI POTTERY:

Bornman (1978) did heavy mineral separation and X-ray diffusion analysis as well as Scanning Electron Microscopy (SEM) on the Khoi pottery. From the former it was found that the clay used to make the pottery was made either from magnetite, ilmenite or haematite (i.e. opaque minerals). The X-ray diffraction showed that quartz, sanidene and illite were also present; all varying in concentrations. The SEM could not find any diagnostic features in the minerals.

Five diagnostic sherds (3 rims and 2 lugs) as well as two decorated fragments were recovered. Rudner's analysis of Khoi Pottery (1968 in Bornman 1978) suggests that one rim is of the 'necked globular' pots (i.e. the rim was plain and everted), while another rim is an 'open bag-shaped' pot. Rudner's analysis also suggests that the checked pattern from one decorated fragment is exclusive to the Namibian coast. One decorated fragment with horizontal lines was associated with the 'necked globular' pots (fig. 3.16a) A fragmented horizontally and internally reinforced lug was associated with the 'globular' pots. The writer found another similar lug that refitted with this lug in the deposit (BED9 refitted with FRA9). Amongst these fragments only two other sherds could be refitted: TOPS - LOBS.

Of the 45 sherds found 9 (20%) came from Unit 1, 32 (21.1%) from Unit 2A, 2 (4.4%) from Unit 2B, and 1 (2.2%) from Unit 3 and the talus slope. Of these 19 (42.2%) came from the bedding, while 31 (68.8%) came from bedding and bedding related features. A negative impression of a pot base was found in DUCR, however, it has now fragmented and only a flattened U-shape can be seen. This highlights the necessity for the conservation of archaeological remains such as this impression so that information is not lost. That pots were used for cooking is undoubted as several had been charred on the outside.

Thus, pottery first occurs in UCFL (1640 ± 50 BP) and ends in DUCR (post-180 ±50 BP). Pottery has also been found at other S.W. Cape sites such as De Hangen (Parkington and Poggenpoel 1971), Renbaan Cave (Kaplan 1984) and KFR2 (Nackerdien 1989), Tortoise Cave (Robey 1984). Parkington (pers. comm.) mentioned that while Elands Bay Open (EBO) and Dune Field Midden (DFM) have a lot of pot sherds, it is yet uncertain whether they are 'true' hunter-gatherer sites. The frequency of sherds is however related to the volume of the deposits from these sites, and thus any comparisons made would be tentative when considering volume of deposits from Andriesgrond.

BEADS:

In total 91 beads were found at Andriesgrond. They were made from O.E.S. (93.4%), bone (5.5%), seeds (1.1%) and glass (1.1%).

There were 86 **O.E.S beads** in total: Unit 1 had 12 (14%), Unit 2A had 47 (54.7%), Unit 2B had 17 (19.8%), Unit 3 had 3 (3.5%), Unit

4 had 1 (1.2%) - this came from a string of beads found on the burial and was thus counted as one occurrence, and the rest are unprovenienced. Unfinished beads numbered 5 (5.8%) and 2 (2.3%) had ochre stains. The majority of these beads were found in the bedding (47.7%) and then in MACO (19.8%). Thus post-1 700 BP units had 91.9% of all O.E.S. beads. O.E.S. beads were most probably used as adornments and strung around various parts of the body or on clothing.

Five bone beads were found (fig.s 3.17 a-c). Four of these were from bird long bones that had been cut into shorter lengths and smoothed at the ends. Two of these bone tube beads were ochred; one on the inside and one on the outside. The third had been darkened either on purpose or by a fire. A bone bead (fig. 3.17c) was found in TOPS (a piece of it had broken off), but it still differed from the bone tube beads in that it was not from a bird bone, rather a mammal bone and that it was not as long. Only one bone bead was found in a pre-1 700 BP stratum: Unit 4 (in GRGR).

A glass bead was found in HBE2 and with the help of S.J. Saitowitz (of the Materials Laboratory in the U.C.T. Archaeology department) it has been classified according to a standard classification for glass beads. It is as follows:

TYPE: W11i.

COLOUR: Munsell No. 10yr 5/10 (Munsell color 1976).

DIAPHANEITY: Transparent.

LUSTRE: Dull

CONDITION: Broken.

SIZE: Large.

COMMENTS: The bead is a round-faceted bead with 8 surface facet (Karklins 1985:99). The facets are very worn through use and not erosion. The glass is well fused (i.e. has no air bubbles) indicating a relative age of ±180 years. The bead has broken since the excavation.

A seed case bead was found in TOPS and it had a perforation in it. (fig. 3.17d). The species has not yet been identified.

Thus, in total, 88.4% of the beads were found in post-1 700 BP units, and conversely 11.6% in pre-1 700 BP units. Similar types of beads have been found throughout the S.W. Cape hunter-gatherer sites referred to above, such as EBC, TC, KFR2, De Hangen and Renbaan Cave. KFR2 had 127 O.E.S. beads (Nackerdien 1989). Renbaan Cave had 73 O.E.S. beads mostly from post-1 700 BP units, 3 bone tube beads, and 2 seed beads (Kaplan 1984) De Hangen had 267 finished O.E.S. beads (R. Yates pers. comm.). Tortoise Cave had 745 O.E.S. beads of which 410 came from post-1 700 BP units. As with engraved O.E.S. these frequencies may be due to sampling error or due to different sieve mesh sizes.

BURIAL:

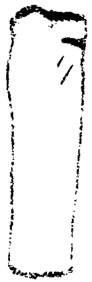
One burial was found, in Unit 4 and it has been dated to 3 850 ± 80 BP (OXA-457) (Sealy and v.d. Merwe 1986). The burial was of a male (± 17 - 19 years of age) in a flexed/fetal position. It had a hard brown matrix around the bone - the skin and body tissue. In the area of the head there were pinkish nodules strung together with hair. This could be ochre that was rubbed into the hair. Beads strung together were found in the burial. There was no burial stone above the burial.

BROKEN OCHRED TUBE BEAD (DUCR)

(2mm = 1mm)

(OUTSIDE) (INSIDE)

BIRD BONE TUBE BEAD (ULBS)



BROKEN BONE BEAD (TOPS)

The burial was analysed by v.d. Merwe and Sealy (1985) and shown to have a $^{13}C/^{12}C$ ratio that indicated a terrestrial diet and thus contrary to Parkington's seasonal mobility hypothesis (1972). Their work is by no means uncontested and it is not the writers intention to involve the debates between Parkington and v.d. Merwe and Sealy. The following is a list of current articles on this debate: v.d. Merwe and Sealy (1985, 1986); Sealy (1984); Parkington (1972, 1986, 1987, 1991).

MODERN EUROPEAN FINDS:

Table 3.2 lists all the modern finds of European origin. These are not considered to be part of the artefacts of the occupants of the cave as they occurred post-depositionally, and thus they were excluded from any analyses. That glass occurs throughout the deposit is something to be noted and could be intrusive due to burrows or have occurred during excavation.

CHAPTER 4:

LITHIC ANALYSIS FROM ANDRIESGROND:

INTRODUCTION:

This chapter deals with the lithic assemblage of Andriesgrond. It must be noted in the beginning of this chapter that the writer has purposefully moved away from a lithocentric approach to Andriesgrond Cave in favour of a more social approach. In this chapter, unlike others, the writer has not looked at intersite differences and only has briefly noted similarities with other sites where they occur. The writer re-analyzed all the lithic material, much of it previously analyzed by A. Mazel, for two reasons: (1) it was noted that some strata had not yet been analyzed, and (2) it had been ± 10 years since they were last analyzed and it was believed that more and different information may be obtained by this re-analysis. All previous work by Mazel on the lithics of Andriesgrond Cave is ignored in this essay for the reasons stated above. In total 13 491 pieces of stone were analysed and these yielded a substantially greater number of formal tools, utilized pieces, MSA/'older' flakes and cores than was previously the case. The information derived from the lithic analysis was used in an attempt to consider the implications of the ^{14}C dates obtained form the stratigraphy. An attempt at providing a relative chronology for units 7 and 9 was also made throughout the stone tool analysis so as to link these units to the stratigraphy, as they were 'hanging' in the Harris Matrix. It is necessary to stress that this was not an attempt to date (*per se*) Units 7 and 9 (as this would be circular); rather to put them in a relative chronological sequence for future references to this site. 'Older' flake tools were identified where the patinated surface of a flake was broken through by secondary retouch - these are referred to as re-used MSA flakes as opposed to utilized MSA flakes (flakes that were utilized during the MSA). Adzes were examined for evidence of the re-use of 'older' flakes in the manufacture of these tools, as noted by Kaplan (1984). Several other reused MSA flakes were found on utilized pieces and MRP's. Two 'new' type of formal tools were also introduced: the 'Gothic Arch' scraper and the double-sided adze (a.k.a. as 'slugs'), definitions of which will be provided in the relevant paragraphs. Changes in stone tools and their raw materials are viewed as part of an adaptive strategy used by prehistoric people of this area.

Lithics were divided into 6 basic categories: formal tools, utilized pieces, waste, cores, MSA/'older' lithics, and other. Table 4.1 shows the total lithic inventory of Andriesgrond Cave, while Tables 4.2 - 4.9 give the individual lithic inventory per unit. Figures 4.1 - 4.9 show the raw material percentages - figure numbers correspond with table numbers. Of the formal tools scrapers were further subdivided into different scraper types and these subdivisions will be explained in that section. Changes through time are analyzed by comparing each unit within a lithic (sub-)category: percentages given in these analysis refer to the percentages in the unit tables, unless otherwise specified. Formal tools and cores were analyzed by the writer and checked by John Parkington and/or Royden Yates.

TABLE 1.1 : TOTAL LITHIC INVENTORY OF ANDRIESGROND

	1	2A	2B	3	4	5	7	9	UNPROV	TOTAL
SCRAPERS	26	59	37	59	71	25	2	3	6	[illegible]
ADZES	27	139	17	13	23	11	4	1	2	[illegible]
MRPS	6	30	13	18	29	16	1	1	2	116
DRILLS	0	1	0	3	0	0	0	0	0	4
AWLS	0	0	1	0	0	1	0	0	0	2
BORERS	0	0	0	1	3	1	0	0	0	5
SEGMENTS	0	0	0	2	2	1	0	0	0	5
MRK	0	0	0	0	1	0	0	0	[illegible]	[illegible]
BACKED PIECES	0	2	0	5	2	2	0	0	0	[illegible]
BACKED FLAKES	0	1	1	0	0	0	0	0	[illegible]	2
BACKED POINTS	0	1	0	3	1	1	2	0	[illegible]	[illegible]
BACKED BLADES	0	1	3	0	1	2	0	0	[illegible]	[illegible]
BACKED BLADELETS	0	0	1	1	1	0	1	0	[illegible]	5
TOTAL	59	234	73	105	134	60	10	5	[illegible]	592
UTILIZED PIECES:										
UTILIZED FLAKES, CHIPS,	108	292	139	196	292	198	17	23	12	[illegible]
OUTIL ECAILLE	0	0	0	2	3	2	0	0	0	7
HEAVY EDGE DAMAGE	0	1	0	0	1	2	0	0	0	4
HAMMER STONES	1	3	1	0	0	0	0	1	0	6
G/STONE (FRAGMENTS)	0	5	0	1	1	5	0	0	0	12
BLADES	10	22	14	40	38	14	0	1	0	139
BLADELETS	0	10	3	26	33	11	2	1	0	86
TOTAL	120	333	157	265	368	232	19	26	12	1532
WASTE:										
CHIPS	161	434	315	365	390	121	44	15	5	1850
CHUNKS	205	355	220	369	491	315	55	34	15	2059
FLAKES	452	1226	819	1179	1437	1266	158	121	40	6698
BLADES	7	12	20	43	31	39	4	2	0	158
BLADELETS	15	24	25	37	42	18	1	4	0	[illegible]
CORE REJUVINATION	0	0	0	0	1	0	0	0	0	1
TOTAL	840	2051	1399	1993	2391	1759	262	176	[illegible]	[illegible]
CORES:										
BIPOLAR	11	49	24	52	61	14	3	6	0	[illegible]
IRREGULAR	1	14	2	8	8	15	2	1	0	52
SINGLE PLATFORM	1	3	2	5	6	3	1	0	0	[illegible]
BLADELET	1	3	0	5	1	[illegible]	0	0	[illegible]	[illegible]
RICE GRAIN	0	0	1	2	0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
DISC	1	0	0	0	0	1	[illegible]	[illegible]	[illegible]	[illegible]
MSA-TYPE	0	1	0	0	0	0	0	0	[illegible]	[illegible]
TOTAL	15	70	29	72	76	34	[illegible]	7	[illegible]	309
MSA/OLDER LITHICS:										
FLAKES	3	3	0	0	5	4	0	[illegible]	[illegible]	[illegible]
BLADES	0	0	0	0	1	3	0	0	0	[illegible]
MIP	0	0	0	0	0	1	0	0	[illegible]	[illegible]
UNIFACIAL POINTS (MSA)	0	0	0	0	0	3	0	0	0	[illegible]
TOTAL	3	3	0	0	6	11	0	0	0	[illegible]
GRAND TOTAL	1037	2691	1658	2435	2975	2096	297	214	84	[illegible]
OTHER:										
IRON-OXIDE ("RED OCHRE")	8	42	27	36	29	25	4	1	0	172
MANGANESE-DIOXIDE (BLACK")	0	1	0	0	0	4	0	0	0	5
OCHRED SPALLS	1	2	0	0	0	3	0	0	0	6
MANUPORTS	0	0	0	0	1	0	0	0	0	1
QZ CRYSTALS	0	0	0	1	4	0	0	0	[illegible]	[illegible]

FIG. 4.1: TOTAL RAW MATERIAL PERCENTAGES

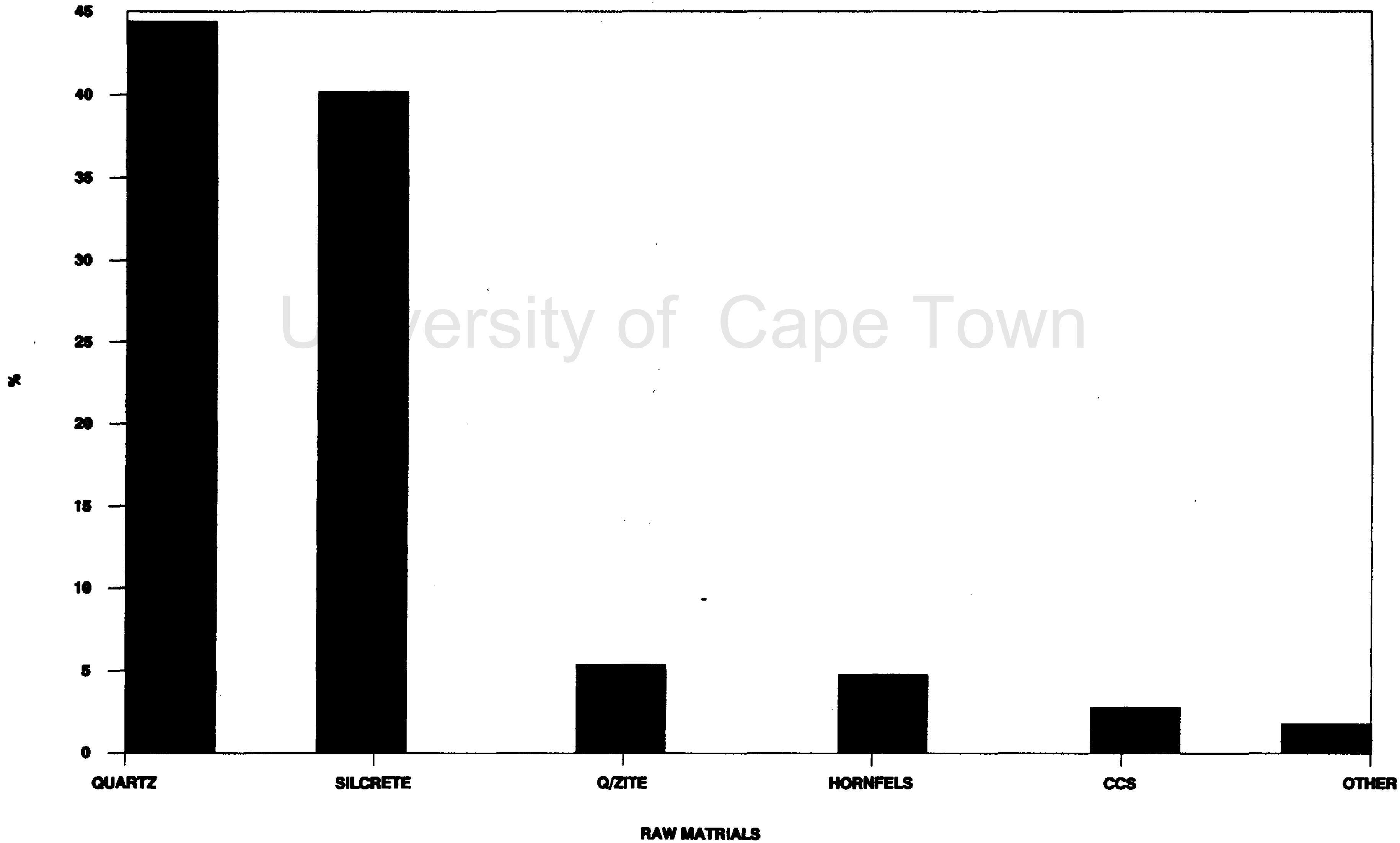


TABLE 1.2: LITHIC INVENTORY OF UNIT 1

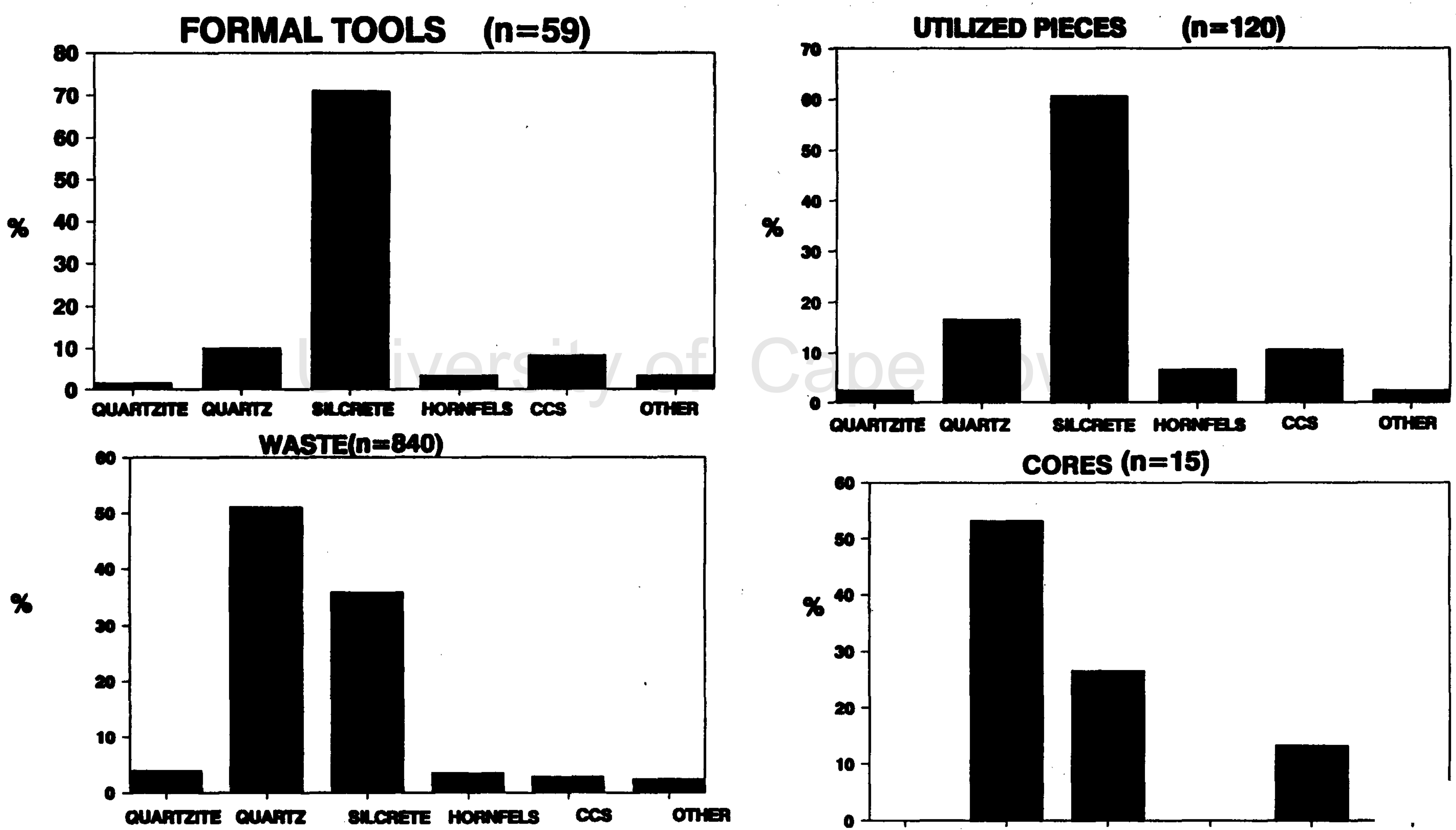
	QZITE f	QZITE %	QZ f	QZ %	SILC. f	SILC. %	HF f	HF %	OCS f	OCS %	OTHER f	OTHER %	[illegible] f	[illegible] %
FORMAL TOOLS:														
SCRAPERS	1	4	5	20	17	64	1	4	1	4	1	[illegible]	[illegible]	[illegible]
ADZES	0	0	0	0	22	61.5	1	3.7	4	14.8	0	[illegible]	[illegible]	[illegible]
MRPS	0	0	1	16.7	4	66.7	0	0	0	0	1	16.7	6	[illegible]
TOTAL	1	1.7	6	10.2	42	71.2	2	3.4	5	8.3	2	3.4	59	5.7
UTILIZED PIECES:														
UTILIZED FLAKES, CHIPS AND CHUNKS	2	1.9	19	17.6	66	61.1	7	6.5	12	11.1	3	2.8	108	10.8
HAMMERSTONES	1	100	0	0	0	0	0	0	0	0	0	0	1	0.84
GRIND STONES	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BLADES	0	0	1	10	7	70	1	10	1	10	0	0	10	9.40
BLADELETS	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	3	2.5	20	16.7	73	60.8	9	5.7	13	10.8	3	2.5	120	11.6
WASTE:														
CHIPS	0	0	120	74.5	37	[illegible]	1	0.5	0	0	3	1.9	161	17.2
CHUNKS	2	1	116	56.5	69	33.7	5	2.4	6	2.5	7	3.4	205	24.4
FLAKES	30	6.6	186	41.2	184	40.7	24	5.3	18	4	10	2.2	452	53.8
BLADES	2	28.6	2	28.6	1	14.3	0	0	1	14.3	1	14.3	7	0.8
BLADELETS	0	0	5	33.3	10	66.7	0	0	0	0	0	0	15	1.8
TOTAL	34	4	429	51.1	301	35.8	30	3.6	25	3	21	2.5	840	81.1
CORES:														
BIPOLAR	0	0	6	54.5	2	18.2	0	0	2	18.2	1	9.1	11	73.3
IRREGULAR	0	0	0	0	1	100	0	0	0	0	0	0	1	6.7
SINGLE PLATFORM	0	0	0	0	1	100	0	0	0	0	0	0	1	6.7
BLADELET	0	0	1	100	0	0	0	0	0	0	0	0	1	6.7
DISC	0	0	1	100	0	0	0	0	0	0	0	0	1	6.7
TOTAL	0	0	8	53.3	4	26.7	0	0	2	13.3	1	6.7	15	1.4
MSA/OLDER LITHICS:														
FLAKES	0	0	0	0	2	100	0	0	0	0	0	0	2	66.7
CHUNKS	0	0	0	0	1	100	0	0	0	0	0	0	1	33.3
TOTAL	0	0	0	0	3	100	0	0	0	0	0	0	3	0.3
GRAND TOTAL	38	3.6	463	44.5	423	40.8	40	3.9	45	4.3	27	2.6	1037	99.7
OTHER:														
OCHRE IRON-OXIDE ("RED")													8	
MANGANESE-DIOXIDE ("BLACK)													0	
OCHRED SPALLS													1	
MANUPORTS													0	
QZ CRYSTALS													0	
BORED STONES	1	100	0	0	0	0	0	0	0	0	0	0	1	0.8

[illegible]ES OF UNIT 1*

TABLE 1.2:LITHIC INVENTORY OF UNIT 1

	QZITE		QZ		SILC.		HF		CCS		OTHER		TOTAL	
	f	%	f	%	f	%	f	%	f	%	f	%	f	% OF LIT
FORMAL TOOLS:														
SCRAPERS	1	4	5	20	17	64	1	4	1	4	1	4	[illegible]	[illegible]
ADZES	0	0	0	0	22	61.5	1	3.7	4	14.8	0	0	[illegible]	[illegible]
MRPS	0	0	1	16.7	4	66.7	0	0	0	0	1	16.7	6	10.2
TOTAL	1	1.7	6	10.2	42	71.2	2	3.4	5	8.5	2	3.4	59	5.7
UTILIZED PIECES:														
UTILIZED FLAKES, CHIPS AND CHUNKS	2	1.9	19	17.6	66	61.1	7	6.5	12	11.1	3	2.8	108	90.0
HAMMERSTONES	1	100	0	0	0	0	0	0	0	0	0	0	1	0.84
GRIND STONES	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BLADES	0	0	1	10	7	70	1	10	1	10	0	0	10	8.40
BLADELETS	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	3	2.5	20	16.7	73	60.8	9	5.7	13	10.8	3	2.5	120	11.6
WASTE:														
CHIPS	0	0	120	74.5	37	23	1	0.6	0	0	3	1.9	161	19.2
CHUNKS	2	1	116	56.6	69	33.7	5	2.4	6	2.9	7	3.4	205	24.4
FLAKES	30	6.6	186	41.2	184	40.7	24	5.3	18	4	10	2.2	452	53.8
BLADES	2	28.6	2	28.6	1	14.3	0	0	1	14.3	1	14.3	7	0.8
BLADELETS	0	0	5	33.3	10	66.7	0	0	0	0	0	0	15	1.8
TOTAL	34	4	429	51.1	301	35.8	30	3.6	25	3	21	2.5	840	81.1
CORES:														
BIPOLAR	0	0	6	54.5	2	18.2	0	0	2	18.2	1	9.1	11	73.3
IRREGULAR	0	0	0	0	1	100	0	0	0	0	0	0	1	6.7
SINGLE PLATFORM	0	0	0	0	1	100	0	0	0	0	0	0	1	6.7
BLADELET	0	0	1	100	0	0	0	0	0	0	0	0	1	6.7
DISC	0	0	1	100	0	0	0	0	0	0	0	0	1	6.7
TOTAL	0	0	8	53.3	4	26.7	0	0	2	13.3	1	6.7	15	1.4
MSA/OLDER LITHICS:														
FLAKES	0	0	0	0	2	100	0	0	0	0	0	0	2	66.7
CHUNKS	0	0	0	0	1	100	0	0	0	0	0	0	1	33.3
TOTAL	0	0	0	0	3	100	0	0	0	0	0	0	3	0.3
GRAND TOTAL	38	3.6	463	44.5	423	40.8	40	3.9	45	4.3	27	2.6	1037	99.7
OTHER:														
OCHRE														
IRON-OXIDE ("RED")													8	
MANGANESE-DIOXIDE ("BLACK)													0	
OCHRED SPALLS													1	
MANUPORTS													0	
QZ CRYSTALS													0	
BORED STONES	1	100	0		0	0	0	0	0		0	0	1	0.8

FIG. 4.2: RAW MATERIAL PERCENTAGES OF LITHIC CATEGORIES OF UNIT 1*



*:MSA/'OLDER' = 100% (n=3) ON SILCRETE

TABLE 4.3 :LITHIC INVENTORY OF UNIT 2A

	QZITE f	QZITE %	QZ f	QZ %	SILC. f	SILC. %	H F f	H F %	CCS f	CCS %	[illegible] f	[illegible] %	TOTAL f	TOTAL % OF TOTAL
[illegible] TOOLS:														
[illegible]ERS	2	3.4	22	37.3	22	37.3	2	3.4	7	15	[illegible]	6.8	[illegible]	25.4
[illegible]ES	0	0	2	1.5	115	83.9	5	3.6	10	7.3	7	[illegible]	139	59.1
[illegible]	0	0	1	3.3	26	86.7	0	0	3	10	0	0	30	12.9
[illegible]ILLS	0	0	0	0	1	100	0	0	0	0	0	0	1	0.4
[illegible]CKED PIECES	0	0	0	0	0	0	2	100	0	0	0	0	2	0.[illegible]
[illegible]CKED FLAKES	0	0	0	0	1	100	0	0	0	0	0	0	1	0.4
[illegible]CKED POINTS	0	0	0	0	1	100	0	0	0	0	0	0	1	0.4
[illegible]CKED BLADES	0	0	0	0	1	100	0	0	0	0	0	0	1	0.4
TOTAL	2	0.9	25	10.7	167	71.4	9	3.8	20	8.5	11	4.7	234	8.7
UTILIZED PIECES:														
UTILIZED FLAKES, CHIPS CHIPS & CHUNKS	7	2.4	43	14.8	192	65.9	24	8.2	16	5.5	10	3.4	[illegible]	87.8
HEAVY EDGE DAMAGE	0	0	1	100	0	0	0	0	0	0	0	0	1	0.3
HAMMER STONE	3	100	0	0	0	0	0	0	0	0	0	0	3	0.9
H/STONE (FRAGMENTS)	4	80	1	20	0	0	0	0	0	0	0	0	5	1.5
BLADES	0	0	0	0	22	100	0	0	0	0	0	0	22	6.6
BLADLETS	0	0	2	20	6	60	0	0	2	20	0	0	10	3
TOTAL	14	4.2	47	14.1	220	66.1	24	7.2	18	4.8	10	3	333	12.4
WASTE:														
CHIPS	3	0.7	309	71.2	104	24	9	2.1	4	2.[illegible]	5	1.2	434	21.2
CHUNKS	8	2.3	211	59.4	105	29.6	16	4.5	4	0.[illegible]	11	3.1	[illegible]	17.3
FLAKES	65	5.3	560	45.7	457	37.3	60	4.9	47	[illegible]	[illegible]	3.1	12[illegible]	[illegible].8
BLADES	0	0	0	0	12	100	0	0	0	0	0	0	[illegible]	[illegible].6
BLADELETS	0	0	12	50	10	41.7	0	0	0	0	2	8.3	24	1.2
TOTAL	76	3.7	1092	53.2	688	33.5	85	4.1	55	2.[illegible]	55	2.7	2051	76.2
CORES:														
BIPOLAR	0	0	37	75.5	9	18.4	1	2	1	2	1	2	[illegible]	[illegible]
IRREGULAR	0	0	4	28.6	10	71.4	0	0	0	0	0	0	14	20
SINGLE PLATFORM	0	0	1	33.3	2	66.7	0	0	0	0	0	0	3	4.3
BLADELET	0	0	1	33.3	2	66.7	0	0	0	0	0	0	3	4.3
MSA-TYPE	0	0	0	0	1	100	0	0	0	0	0	0	1	1.4
TOTAL	0	0	43	61.4	24	34.3	1	1.4	1	1.4	1	1.4	70	2.6
MSA/OLDER LITHICS:														
FLAKES	0	0	0	0	3	100	0	0	0	0	0	0	3	100
BLADES	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	0	0	0	0	3	100	0	0	0	0	0	0	3	0.1
GRAND TOTAL	92	3.3	1207	44.8	1102	41	119	4.4	91	3.4	78	2.9	2691	99.8

OTHER:

OCHRE:

IRON-OXIDE ("RED")	42
MANGANESE-DIOXIDE ("BLACK")	1
OCHRED SPALLS	2

FIG. 4.3: RAW MATERIAL PERCENTAGES OF UNIT 2A

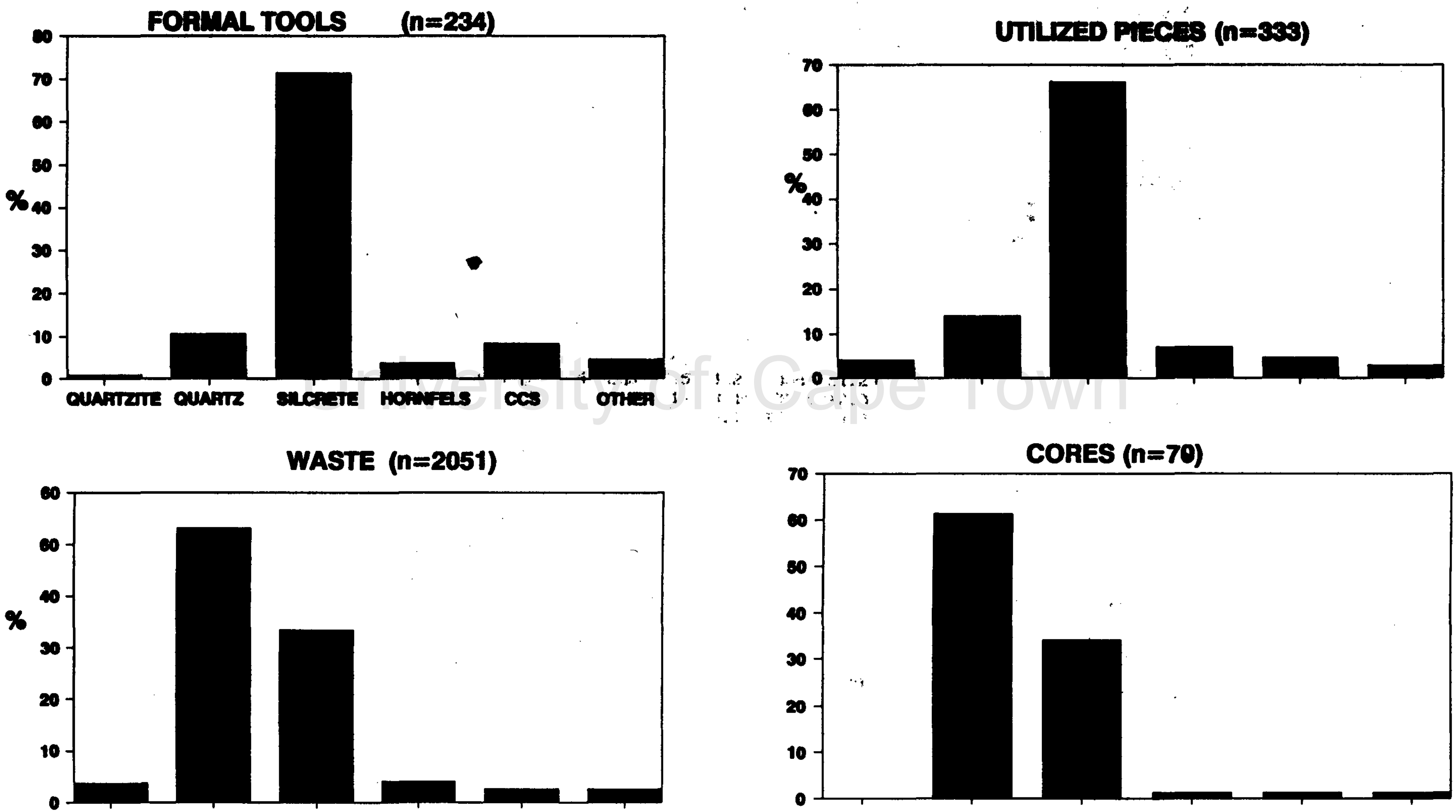


TABLE 4.4 :LITHIC INVENTORY OF UNIT 2B

	QZITE f	QZITE %	QZ f	QZ %	SILC f	SILC %	HF f	HF %	CCS f	CCS %	[illegible] f	[illegible] %	[illegible] f	% OF TTL
FORMAL TOOLS:														
SCRAPERS	0	0	10	27.02	21	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
ADZES	0	0	0	0	13	76.47	2	[illegible]	[illegible]	[illegible]	0	0	[illegible]	[illegible]
MRPS	0	0	1	7.692	10	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0	0	[illegible]	17.8
AWLS	0	0	0	0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0	0	[illegible]	1.4
BACKED FLAKES	0	0	0	0	1	100	0	[illegible]	0	0	0	0	1	1.4
BACKED BLADES	0	0	0	0	1	33.33	0	[illegible]	2	66.66	0	0	3	4.1
BACKED BLADELETS	0	0	0	0	1	100	0	0	0	0	0	0	1	1.4
TOTAL	0	0	11	15.06	48	65.75	4	5.479	7	9.589	3	4.109	73	4.4
UTILIZED PIECES:														
UTILIZED FLAKES, CHIPS, AND CHUNKS	4	2.877	14	10.07	109	78.41	5	3.597	3	2.158	4	2.877	139	88.5
HAMMER STONES	1	100	0	0	0	0	0	0	0	0	0	0	1	0.64
BLADES	0	0	1	7.142	11	78.57	0	0	2	14.28	0	0	14	8.9
BLADELETS	0	0	2	66.7	1	33.3	0	0	0	0	0	0	3	1.9
TOTAL	5	3.184	17	10.82	121	77.07	5	3.184	5	3.184	4	2.547	157	9.5
WASTE:														
CHIPS	0	0	190	60.31	119	37.77	2	0.634	1	0.317	3	0.952	315	22.5
CHUNKS	2	0.909	121	55	82	37.27	7	3.181	1	0.454	7	3.181	220	15.7
FLAKES	36	4.395	[illegible]	35.28	437	53.36	19	2.319	17	2.075	21	2.564	819	58.5
BLADES	0	0	[illegible]	30	14	70	0	0	0	0	0	0	20	1.4
BLADELETS	0	0	[illegible]	[illegible]	11	[illegible]	0	0	0	0	0	0	26	1.8
TOTAL	38	2.693	620	[illegible]	663	46.98	28	1.984	19	1.346	31	2.197	1399	84.4
CORES:														
BIPOLAR	0	0	19	79.16	3	12.5	0	0	2	8.333	0	0	24	82.8
IRREGULAR	0	0	1	50	1	50	0	0	0	0	0	0	2	6.9
SINGLE PLATFORM	0	0	0	0	2	100	0	0	0	0	0	0	2	6.9
RICE GRAIN	0	0	1	100	0	0	0	0	0	0	0	0	1	3.4
TOTAL	0	0	21	72.41	6	20.68	0	0	2	6.896	0	0	29	1.7
MSA/OLDER LITHICS:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
GRAND TOTAL	43	2.574	669	40.05	838	50.17	37	2.215	33	1.976	38	2.275	1658	99.3
OTHER:														
IRON-OXIDE (RED OCHRE)													0	0
MANGANESE-DIOXIDE (BLACK OCHRE)													0	0
OCHRED SPALLS													0	0
MANUPORTS													0	0
QZ CRYSTALS													0	0

FIG. 4.4:RAW MATERIAL PERCENTAGES OF UNIT 2B

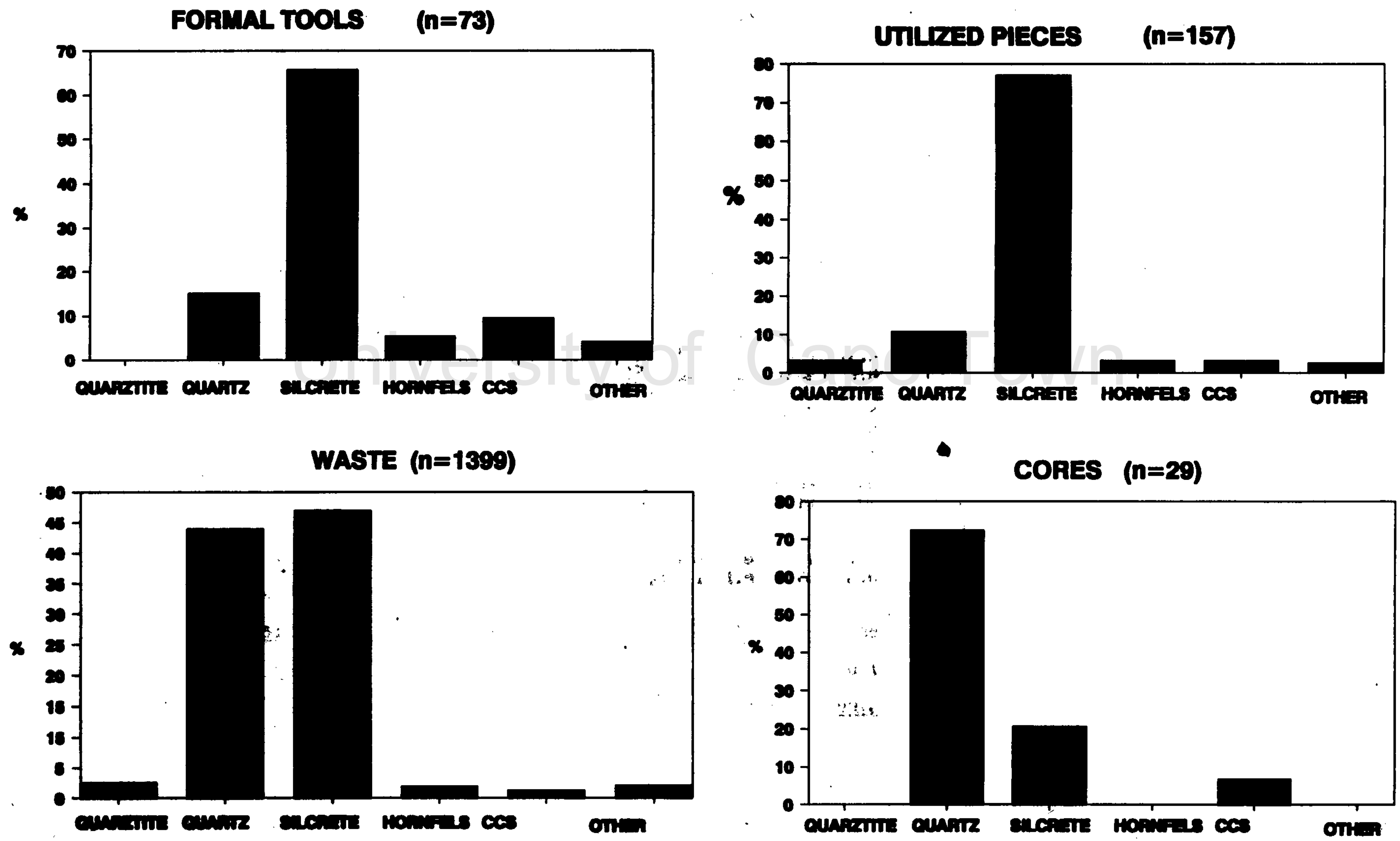


TABLE 4.5 : LITHIC INVENTORY OF UNIT 3

	QZITE f	QZITE %	QZ f	QZ %	SILC. f	SILC. %	HF f	HF %	CCS f	CCS %	OTHER f	OTHER %	TOTAL f	% OF TTL
[illegible] TOOLS:														
[illegible]	0	0	5	8.5	51	86.4	2	4.4	1	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	0	0	0	0	9	69.2	2	15.4	2	15.4	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	0	0	2	11.1	12	66.7	2	11.1	2	11.1	[illegible]	0	[illegible]	[illegible]
[illegible]ILLS	0	0	0	0	3	100	0	0	0	0	[illegible]	0	[illegible]	2.9
[illegible]ERS	0	0	0	0	0	0	0	0	1	100	[illegible]	0	1	1
SEGMENTS	0	0	1	50	1	50	0	0	0	0	[illegible]	0	2	[illegible]
BACKED PIECES	0	0	0	0	5	100	0	0	0	0	[illegible]	[illegible]	[illegible]	[illegible]
BACKED POINTS	0	0	0	0	3	75	1	25	0	0	[illegible]	0	[illegible]	[illegible]
BACKED BLADELETS	0	0	0	0	1	100	0	0	0	0	[illegible]	0	1	1
TOTAL	0	0	8	7.3	85	81.7	7	6.4	6	5.5	[illegible]	0	[illegible]	4.3
UTILIZED LITHICS:														
UTILIZED FLAKES, CHIPS & CHUNKS	4	2	34	17.3	131	66.8	10	5.1	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
OUTIL ECAILLE	0	0	0	0	1	50	1	50	0	[illegible]	[illegible]	0	[illegible]	[illegible]
B/STONE FRAGMENT	1		100	0	0	0	0	0	0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
BLADES	0	0	15	37.5	23	57.5	0	0	2	5	[illegible]	[illegible]	[illegible]	15.1
BLADELETS	0	0	16	61.5	9	34.6	[illegible]	0	0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
TOTAL	5	1.9	65	24.6	164	62.1	11	4.2	[illegible]	5.7	[illegible]	[illegible]	[illegible]	10.9
WASTE:														
[illegible]	0	0	263	72.1	90	24.7	[illegible]	[illegible]	7	1.9	0	0	[illegible]	18.3
[illegible]	8	2.2	221	60.2	103	28.1	14	[illegible]	15	4.1	[illegible]	[illegible]	[illegible]	18.5
[illegible]	49	4.2	526	44.7	493	41.9	42	3.6	[illegible]	4.1	[illegible]	[illegible]	[illegible]	59.2
[illegible]	3	7	11	25.6	27	62.8	0	0	0	0	2	4.7	43	2.2
BLADELETS	0	0	20	54.1	15	40.5	1	2.7	1	2.7	0	0	37	1.5
TOTAL	60	3	1041	52.2	728	36.5	62	3.1	71	3.6	27	1.4	1993	91.8
CORES:														
BIPOLAR	0	0	36	69.2	13	25	0	0	3	5.8	0	0	52	72.2
IRREGULAR	1	12.5	0	0	7	87.5	0	0	0	0	0	0	[illegible]	11.1
SINGLE PLATFORM	0	0	1	20	3	60	1	20	0	0	0	0	5	6.9
BLADELET	0	0	5	100	0	0	0	0	0	0	0	[illegible]	[illegible]	6.9
RICE GRAIN	0	0	2	100	0	0	0	0	0	0	0	0	2	2.7
TOTAL	1	1.4	44	61.1	23	31.9	1	1.4	3	4.2	0	0	72	3
GRAND TOTAL	66	2.7	1158	47.6	1004	41.2	81	3.3	[illegible]	[illegible]	[illegible]	1.2	[illegible]	99.9

OTHER:

OCHRE:

IRON-OXIDE ("RED")	36
MANGANESE-DIOXIDE ("BLACK")	0
QZ CRYSTALS	1

FIG.4.5:RAW MATERIAL PERCENTAGES OF UNIT 3*

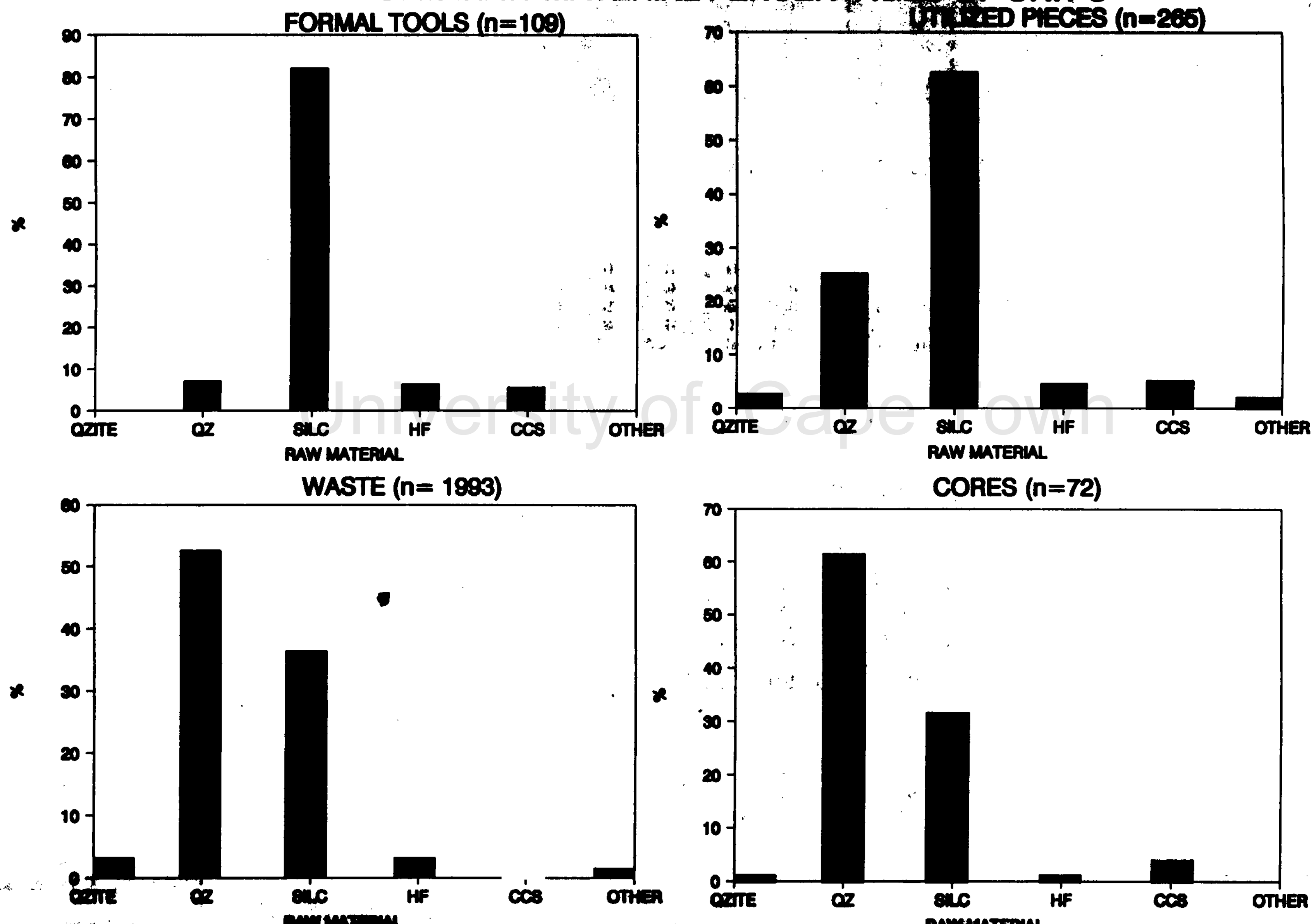


TABLE 4.6 : LITHIC INVENTORY OF UNIT 1

	QZITE f	QZITE %	QZ f	QZ %	SILC. f	SILC. %	HF f	HF %	CCS f	CCS %	OTHER f	OTHER %	TOTAL f	TOTAL % OF TTL
FORMAL TOOLS:														
SCRAPERS	0	0	17	23.9	45	63.4	1	1.4	5	7	3	4.2	71	52.6
ADZES	1	4.3	0	0	18	78.3	1	4.3	3	13	0	0	23	17
MRPS	0	0	8	26.7	13	46.7	4	13.3	1	3.3	3	10	29	21.5
BORERS	0	0	0	0	1	33.3	2	66.7	0	0	0	0	3	2.2
SEGMENTS	0	0	1	33.3	1	33.3	1	33.3	0	0	0	0	3	2.2
MRK	0	0	0	0	0	0	1	100	0	0	0	0	1	0.7
BACKED PIECES	0	0	0	0	2	100	0	0	0	0	0	0	2	1.5
BACKED POINTS	0	0	0	0	0	0	1	100	0	0	0	0	1	0.7
BACKED BLADES	0	0	0	0	1	100	0	0	0	0	0	0	1	0.7
BACKED BLADELETS	0	0	1	100	0	0	0	0	0	0	0	0	1	0.7
TOTAL	1	0	27	20	81	60.7	11	8.1	9	6.7	6	4.4	135	4.5
UTILIZED LITHICS:														
UTILIZED FLAKES, CHIPS & CHUNKS:	18	6.2	56	19.2	182	[illegible]	17	5.8	7	2.4	2	3.7	292	79.3
OUTIL ECAILLE	0	0	0	0	1	33.3	1	33.3	1	33.3	0	0	3	0.8
HEAVY EDGE DAMAGE	1	100	0	0	0	0	0	0	0	0	0	0	1	0.3
G/STONE FRAGMENT	1	100	0	0	0	0	0	0	0	0	0	0	1	0.3
BLADES	2	5.3	6	15.8	24	63.2	4	10.5	2	5.3	0	0	38	10.3
BLADELETS	0	0	14	42.4	17	51.5	0	0	2	6.1	0	0	33	9
TOTAL	22	6	76	20.7	234	63.8	22	6	12	3.3	2	0.5	368	12.5
WASTE:														
CHIPS	0	0	302	77.4	64	16.4	12	3.1	7	1.8	5	1.3	[illegible]	[illegible]
CHUNKS	25	5.1	306	62.2	118	24	24	4.9	8	1.6	11	2.2	[illegible]	[illegible]
FLAKES	77	5.4	549	38.2	661	46	89	6.2	38	2.6	23	1.6	[illegible]	[illegible]
BLADES	2	6.5	4	12.9	24	77.4	1	3.2	0	0	0	0	31	1.3
BLADELETS	0	0	16	38.1	25	59.5	0	0	1	2.4	0	0	42	1.8
CORE REJUVINATION	0	0	0	0	1	100	0	0	0	0	0	0	1	1.3
TOTAL	104	4.3	1177	49.2	892	37.3	126	5.3	54	2.3	39	1.630	2392	80.3
CORES:														
BIPOLAR	0	0	49	79.2	9	17	2	3.8	0	0	1	1.6	[illegible]	79.2
IRREGULAR	0	0	4	42.9	4	57.1	0	0	0	0	0	0	[illegible]	[illegible]
SINGLE PLATFORM	0	0	0	0	6	100	0	0	0	0	0	0	6	7.8
BLADELET	0	0	1	100	0	0	0	0	0	0	0	0	1	1.3
TOTAL	0	0	54	67.6	20	29.4	2	2.9	0	0	1	0	77	2.6
MSA/OLDER LITHICS:														
FLAKES	0	0	1	20	3	60	1	20	0	0	0	0	5	83.3
BLADES	0	0	0	0	1	100	0	0	0	0	0	0	1	16.7
TOTAL	0	0	1	16.7	4	66.7	1	16.7	0	0	0	0	6	0.2
GRAND TOTAL	127	4.3	1335	44.7	[illegible]	41.5	162	5.5	75	2.5	[illegible]	1.6	2978	100.1
OTHER:														
OCHRE:														
IRON-OXIDE ("RED")													29	
MANGANESE-DIOXIDE ("BLACK")													0	
MANUPORTS	0	0	0	0	0	0	0	0	1	100	0	0	1	109
QZ CRYSTALS			4	100									4	100

FIG. 4.6:RAW MATERIALS OF UNIT 4

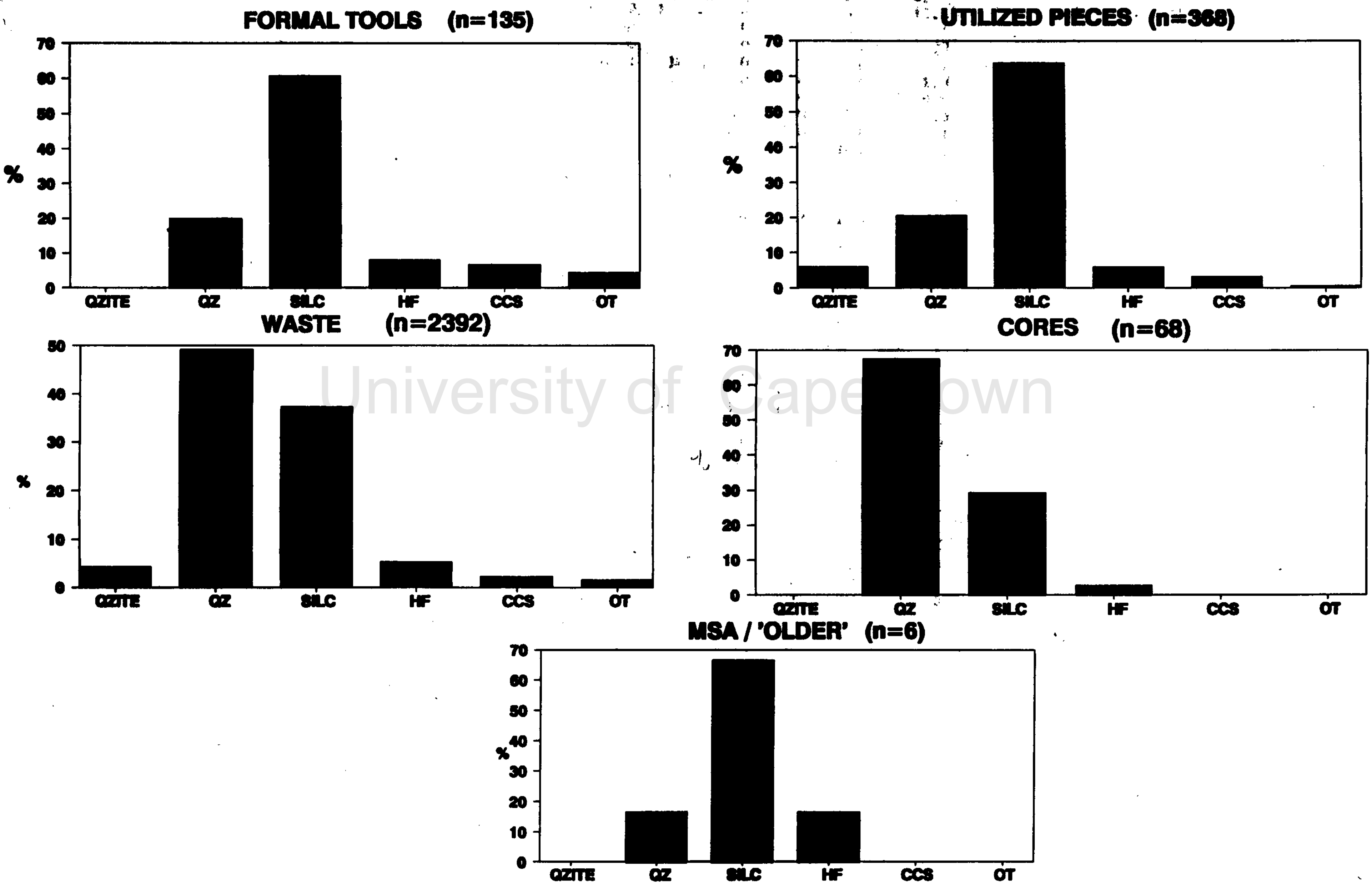


TABLE 4.7 : LITHIC INVENTORY OF UNIT 5

	QZITE		QZ		SILC.		HF		[illegible]		OTHER		TOTAL		
	f	%	f	%	f	%	f	%	f	%	f	%	f	%	% OF TTL
FORMAL TOOLS:															
SCRAPERS	0	0	9	36	14	56	2	[illegible]	[illegible]	[illegible]	0	[illegible]	25	41.7	
ADZES	0	0	1	9.1	6	54.4	3	27.3	0	[illegible]	1	9.1	11	18.3	
MRPS	1	6.3	5	31.3	5	31.3	4	25	[illegible]	0	[illegible]	6.3	16	26.8	
AWLS	0	0	0	0	1	100	0	0	0	0	0	0	1	1.7	
BORERS	0	0	0	0	1	100	0	0	0	0	0	0	1	1.7	
SEGMENTS	0	0	0	0	1	100	0	0	0	0	0	0	1	1.7	
BACKED PIECES	0	0	0	0	2	100	0	0	0	0	0	0	2	3.3	
BACKED POINTS	0	0	0	0	1	100	0	0	0	0	0	0	1	1.7	
BACKED BLADES	0	0	0	0	1	50	1	50	0	0	0	0	2	3.3	
TOTAL	1	1.7	15	25	32	53.3	10	16.7	0	0	2	3.3	60	2.9	
UTILIZED PIECES:															
UTILIZED FLAKES, CHIPS & CHUNKS	11	5.6	43	21.7	93	47	39	19.7	9	4.5	3	1.5	198	85.3	
OUTIL ECAILLE	0	0	0	0	1	50	1	50	0	0	0	0	2	0.9	
HEAVY EDGE DAMAGE	1	50	0	0	0	0	1	50	0	0	0	0	2	0.9	
G/STONE (FRAGMENTS)	4	80	0	0	0	0	1	20	0	0	0	0	5	2.2	
BLADES	0	0	1	7.1	10	71.4	3	21.4	0	0	0	0	14	6	
BLADELETS	0	0	0	0	11	100	0	0	0	0	0	0	11	4.7	
TOTAL	16	6.9	44	19	115	49.5	[illegible]	19.4	9	3.9	3	1.3	232	11.1	
WASTE:															
CHIPS	0	0	110	90.9	9	7.4	0	0	1	0.8	1	0.8	121	6.9	
CHUNKS	57	18.1	216	68.6	23	7.3	17	5.4	0	0	2	0.6	315	17.9	
FLAKES	256	20.2	553	43.7	355	28	89	7	9	0.7	4	0.3	1266	72	
BLADES	0	0	10	25.6	9	23.1	19	48.7	1	2.6	0	0	39	2.2	
BLADELETS	1	5.6	12	66.7	5	27.8	0	0	0	0	0	0	18	1	
TOTAL	314	17.9	901	51.2	401	22.8	125	7.1	11	0.6	7	0.4	1759	83.9	
CORES:															
BIPOLAR	0	0	13	92.3	1	7.7	0	0	0	0	0	0	[illegible]	41.2	
IRREGULAR	2	12.5	9	56.3	5	31.3	0	0	0	0	0	0	16	47.1	
SINGLE PLATFORM	0	0	0	0	2	66.7	1	33.3	0	0	0	0	3	8.8	
DISC	0	0	0	0	1	100	0	0	0	0	0	0	1	2.9	
TOTAL	2	5.9	22	64.7	9	26.5	1	2.9	0	0	0	0	34	1.5	
MSA / OLDER PIECES															
FLAKES	1	20	0	0	1	20	2	40	0	0	0	0	4	33.3	
BLADES	1	50	0	0	0	0	1	25	0	0	1	25	3	33.3	
MRP	0		0		0		1		0		0		1	8.3	
UNIFACIAL POINTS	2	66.7	0	0	0	0	1	33.3	0	0	0	0	3	25	
TOTAL	4	36.4	0	0	1	9.1	5	45.5	0	0	1	9.1	11	0.5	
TOTAL	337	16.1	982	46.9	558	26.6	[illegible]	[illegible]	20	1	13	0.6	2095	100.1	
OTHER:															
IRON-OXIDE ("RED")													25		100
MANGANESE-DIOXIDE ("BLACK")													4		100
OCHRED SPALLS													3		
MANUPORTS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
QZ CRYSTALS													0		0
GRAND TOTAL															

FIG. 4.7: RAW MATERIALS PERCENTAGES OF UNIT 5.

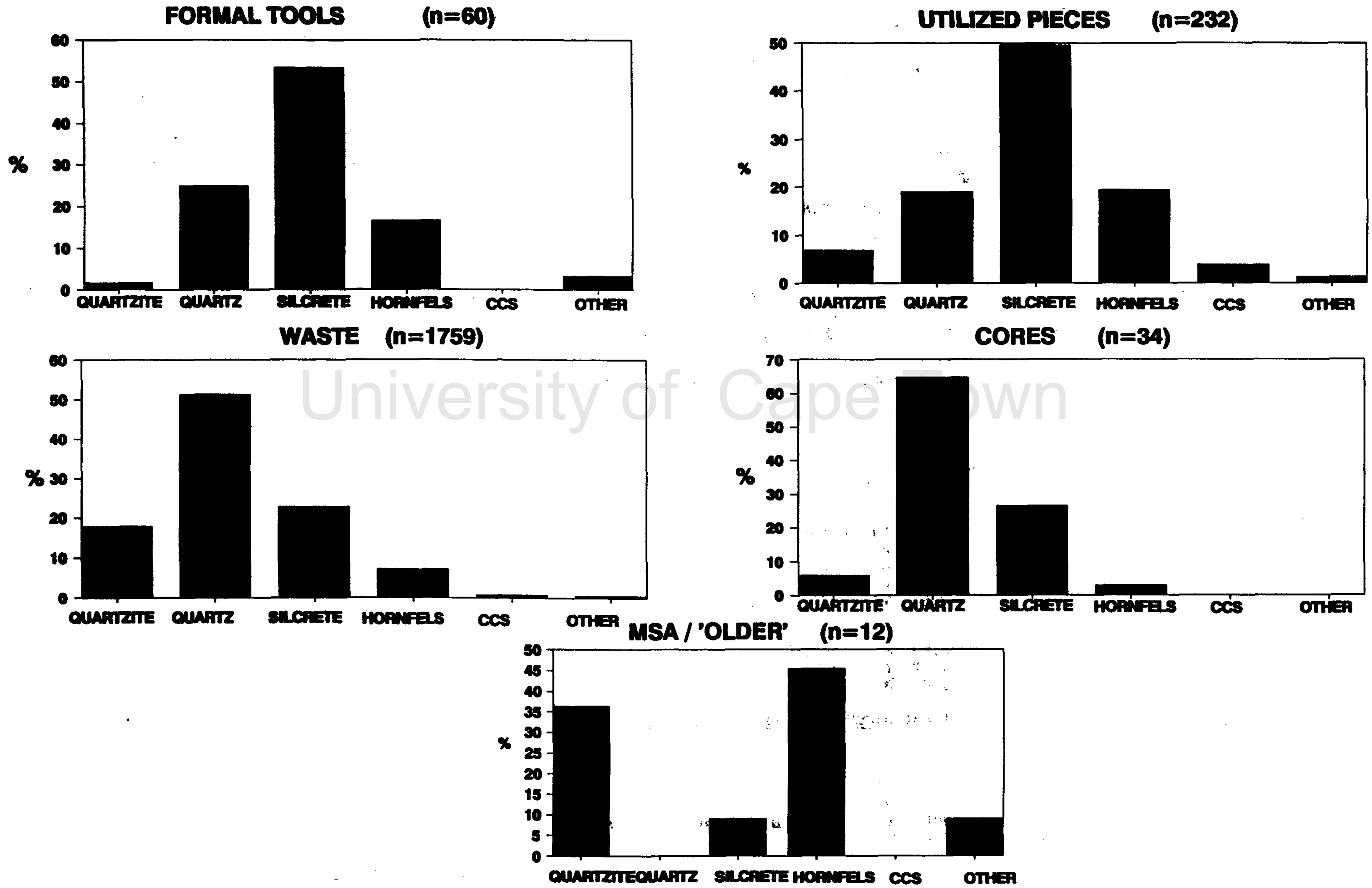


TABLE 4.8 :LITHIC INVENTORY OF UNIT 7

	QZITE		QZ		SILC.		HF		CCS		OTHER		[illegible]	
	f	%	f	%	f	%	f	%	f	%	f	%	f	%
FORMAL TOOLS:														
SCRAPERS	0	0	1	50	0	0	1	[illegible]	0	0	0	[illegible]	2	[illegible]
ADZES	0	0	0	0	1	25	1	25	2	50	0	[illegible]	4	[illegible]
MRPS	0	0	0	0	1	100	0	0	0	0	0	0	1	[illegible]
BACKED POINTS	0	0	0	0	2	100	0	0	0	0	0	[illegible]	2	[illegible]
BACKED BLADELETS	0	0	0	0	1	100	0	0	0	0	0	0	1	[illegible]
TOTAL	0	0	1	10	5	50	2	20	2	20	0	0	10	3.4
UTILIZED PIECES:														
UTILIZED FLAKES, CHUNKS & CHIPS	0	0	1	5.9	14	82.4	1	5.9	1	5.9	0	0	17	[illegible].5
BLADELETS	0	0	0	0	2	100	0	0	0	0	0	0	2	[illegible]
TOTAL	0	0	1	5.3	16	84.[illegible]	1	5.3	1	5.3	0	0	[illegible]	5.4
WASTE:														
FLAKES	0	0	32	72.7	10	22.7	0	0	1	2.3	1	2.3	44	16.8
CHUNKS	7	12.7	29	52.7	18	32.7	0	0	1	1.8	0	0	55	21
CHIPS	17	10.8	39	24.7	89	56.3	3	1.9	8	5.1	2	1.3	158	60.3
BLADES	1	25	0	0	3	75	0	0	0	0	0	0	4	1.5
BLADELETS	0	0	1	100	0	0	0	0	0	0	0	0	1	0.4
TOTAL	25	9.5	101	38.5	120	45.8	3	1.1	10	3.8	3	1.1	262	[illegible].2
CORES:														
BIPOLAR	0	0	2	66.7	1	33.3	0	0	0	0	0	0	3	50
IRREGULAR	0	0	1	50	1	50	0	0	0	0	0	0	2	33.3
SINGLE PLATFORM	0	0	1	100	0	0	0	0	0	0	0	0	1	16.7
TOTAL	0	0	4	66.7	2	33.3	0	0	0	0	0	0	6	2
GRAND TOTAL	25	8.4	107	36	143	48.1	5	2	13	4.4	3	1	297	100
OTHER:														
OCHRE:														
IRON-OXIDE ("RED")													[illegible]	100
MANGANESE-DIOXIDE ("BL ACK")													0	
OCHRED SPALLS													0	
MANUPORTS													0	0
QZ CRYSTALS													0	

FIG. 4.8:RAW MATERIAL PERCENTAGES OF UNIT 7

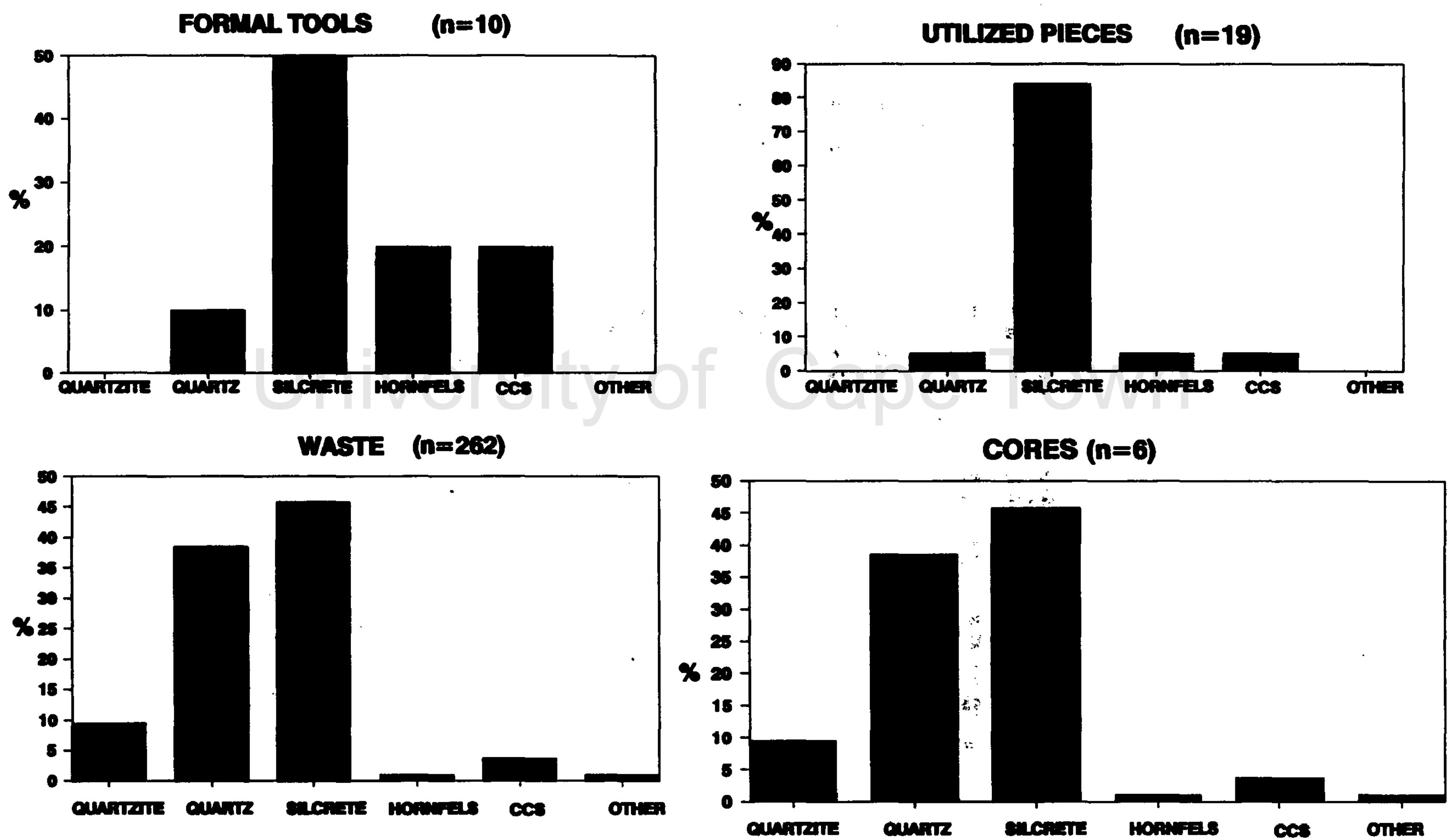
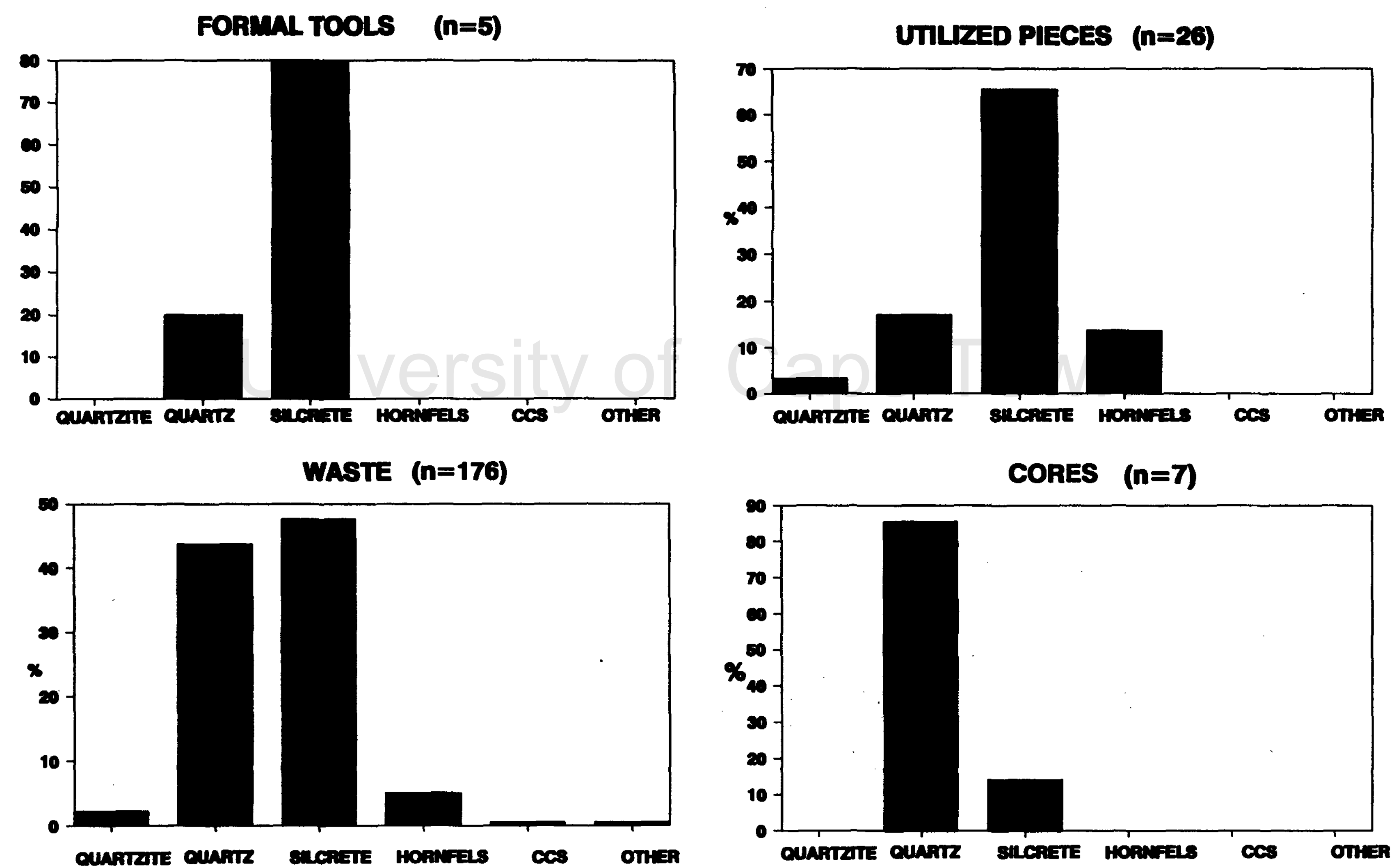


TABLE [illegible] LITHIC INVENTORY OF UNIT 2

	QZITE		QZ		SILC.		[illegible]		CCS		OTHER		TOTAL	
	f	%	f	%	f	%	f	%	f	%	f	%	f	% OF TTL
FORMAL TOOLS:														
SCRAPERS	0	0	1	33.3	2	66.7	0	0	0	0	0	0	3	60
ADZES	0	0	0	0	1	100	0	0	0	0	0	0	1	20
MAPS	0	0	0	0	1	100	0	0	0	0	0	0	1	20
TOTAL	0	0	1	20	4	80	0	0	0	0	0	0	5	2.3
UTILIZED PIECES:														
UTILIZED FLAKES, CHIPS & CHUNKS	0	0	3	13	15	65.6	4	17.4	[illegible]	[illegible]	[illegible]	[illegible]	23	88.5
HAMMER STONES	1	100	0	0	0	0	0	0	0	0	0	0	1	3.8
BLADES	0	0	0	0	1	100	0	0	0	0	0	0	1	3.8
BLADELETS	0	0	0	0	1	100	0	0	0	0	0	0	1	3.8
TOTAL	1	3.4	3	17.2	18	65.5	4	13.8	0	0	0	[illegible]	[illegible]	[illegible]
WASTE:														
CHIPS	0	0	12	80	2	13.3	0	0	0	0	1	6.7	15	8.5
CHUNKS	0	0	24	70.6	9	26.5	1	2.9	0	0	0	0	34	19.3
FLAKES	3	2.5	39	32.2	70	57.9	8	6.6	1	0.8	0	0	121	68.8
BLADES	1	50	0	0	1	50	0	0	0	0	0	0	2	1.1
BLADELETS	0	0	2	50	2	50	0	0	0	0	0	0	4	2.3
TOTAL	4	2.3	77	43.8	84	47.7	9	5.1	1	0.6	1	0.6	176	82.2
CORES:														
BIPOLAR	0	0	5	83.3	1	16.7	0	0	0	0	0	0	6	85.7
IRREGULAR	0	0	1	100	0	0	0	0	0	0	0	0	1	14.3
TOTAL	0	0	6	85.7	1	14.3	0	0	0	0	0	0	7	3.3
GRAND TOTAL	5	2.3	87	40.7	107	50	13	6.1	1	0.5	1	0.5	214	100
OTHER:														
OCHRE:														
IRON-OXIDE ("RED")														1
MANGANESE-DIOXIDE("BLACK")														[illegible]
OCHRED SPALLS														[illegible]
MANUPORTS	0	0	0	0	0	0	0	0	0	0	0	0	0	[illegible]
QZ CRYSTALS			0	0										[illegible]

GRAND TOTAL

FIG. 4.9: RAW MATERIAL PERCENTAGES FOR UNIT 9



LITHIC ANALYSIS:

In total 13 491 lithics were analyzed. Six raw materials were found consistently throughout the sequence, and in total (descending order) of occurrence they are: quartz (44.6%), silcrete (40.2%), quartzite (5.4%) hornfels (HF), a.k.a. lydianite (4.8%), CCS (cryptocrystaline silicates) (2.8%), and 'Other' (1.8%). Thus quartz is dominant followed by silcrete. Quartz does, however, fracture more easily than any of the other raw materials, hence its overall abundance. Lithic definitions employed are derived from Deacon (1984).

OTHER:

Ochre was found throughout the sequence, especially 'red ochre'. Manganese dioxide ('black pigment') was only found in Units 2A and 5, where it was most abundant in the latter unit.

In total 5 quartz crystals were found: 1 in Unit 3 and 4 in Unit 4. The crystals were relatively large and differed from other quartz crystals in the assemblage as these had **not** been worked. Both units' crystals were found in square H5 and are most probably part of the same depositional event.

Unit 1 had 1 ochred spall, Unit 2A had 2, while Unit 5 had 3 ochred spalls. These are not painted spalls, rather they had ochre stains on them.

Only 1 CCS manuport (pebble) was found in unit 4, and a bored stone was found *in situ* in Unit 1.

WASTE:

Quartz dominated the waste category in all units, except in Units 2B, 7 and 9, where silcrete dominated. In these three units the difference between quartz and silcrete is only 4% - 7%. Waste material is the most abundant category in all units (between 76% - 88%)

Non-utilized flakes were the most abundant of all sub-categories followed by chips/chunks, and then blades or bladelets. Bladelets tend to be most commonly made on quartz followed by silcrete; hornfels, CCS and 'Other' were rarely used. Units 2A, 5 and 7 had the lowest percentages of bladelets. That is, post-1 700 BP units tended to have high frequencies of bladelts, especially those on on quartz. Evidence will be used later to discuss the content and age of Unit 4.

Silcrete dominates the raw materials for blades in all units except 2. Unit 9 has an equal percentage of quartzite and quartz blades, while Unit 5 has a noticeable increase in hornfels blades. In decreasing order of occurrence, blades are dominant in Units 5, 3, 7, 2B, 9, 4, 1, and 2A. It must be remembered that, as with bladelets, the overall frequencies of blades per unit are very low and no significant differences between units can thus be found.

A core rejuvenated piece, on silcrete, was found in the strata LCFL (Unit 4).

CORES:

Cores represent only 2.3% of the total lithic assemblage, each unit having similar percentages. Due to the low frequencies of cores few inferences could be made. While cores are essentially waste material they may be indicative of the types of flakes required by the tool maunfacturer and techniques of manufacture. Quartz tends to dominate in the core raw materials followed by silcrete. In total bipolar cores were most abundant, followed by irregular, single platform, bladelet, rice grain and MSA-type (including disc cores) cores .

Bipolar cores tend to be made on quartz, followed by silcrete. In post-1 700 BP units CCS followed by 'Other' and hornfels are also used, while in Unit 4 hornfels and then 'Other' were favoured raw material after CCS. There tends to be no significant difference between units in percentages of bipolar cores. Unit 5 is an exception as there is a decrease in the percentage of bipolar cores.

Irregular cores were made either on silcrete or quartz: in pre-1 700 BP units there was a tendency for them to be made on quartz, whilst in post-1 700 BP units, on silcrete. They also tend to be most abundant overall in pre-1 700 BP units, with the highest percentage in Unit 5.

Single platform cores are made mostly on silcrete followed by quartz or hornfels. Only 21 single platforms cores were found and are the third most abundant core type found in the deposit. As with other core types, single platform cores show no patterning through time.

There are 10 bladelet cores in total, of which the majority are made on quartz. Unit 2A is an exception where the bladelet cores are all made on silcrete. There is a noticeable near absence of these cores in pre-1 700 BP units, whilst they are especially abundant in Units 3 and 2A in the post-1 700 BP groups. This correlates with that of bladelets (and their raw materials). Once again there is a near absence of typical Terminal Pleistocene lithics in the basal units where one would expect to find them.

Only 3 rice grain cores were found. All were on quartz and in post-1 700 BP units: Units 2A and 3. Disc cores are MSA cores and in total there are 3 MSA-type cores of which Units 5, 2A and 1 each have one. That most, although few in number, of the MSA-type cores occur in the upper two units is interesting and will be discussed later on.

In conclusion cores tend to be made on quartz, then silcrete, while hornfels, CCS and 'Other' are used less frequently. Due to the low frequencies of cores no significant differences can be seen between units. However, Andriesgrond Cave follows the trend of bipolar cores dominating the assemblage noted at other sites reffered to previously (*cf* Renbaan Cave, De Hangen, EBC, and Tortoise Cave).

MSA / 'OLDER' LITHICS:

These are stone tools that have a noticeable patina (i.e. 'older') and/or faceted platforms (i.e. MSA). They have **not** been used in a LSA context and thus any utilization occurred during the time the stone tool was originally made. Thus, in this thesis a re-used MSA flake refers to an MSA/older flake that has been utilized and retouched in a LSA context only, e.g. adzes. It should be noted that patinations would only be visible on silcrete and not any other raw materials.

All 6 MSA lithics in Units 1 and 2A were made from silcrete and each unit had 1 flake with a facetted platform and 2 with patinas. These had not yet been re-used and were collected presumably to be used for adzes. One MSA lithic was a utilized flake (**not** re-used). Units 4 and 5 had most of the MSA lithics, the greatest number in the latter. Unit 4 had 6 MSA lithics of which 66.7% were made on silcrete and 16.7 % on quartz and hornfels. This unit contained 1 patinated flake, 2 facetted platforms flakes, 1 utilized flake with a facetted platform and 1 blade with a facetted platform. The stratum called LCFL (from where the ^{14}C came from) had 83.3 % of MSA lithics form Unit 4, while BRGG stratum had 16.7%. Unit 5 had 12 MSA lithics. Of these 12 all were noted by their MSA flaking characteristics and not their patina. They were also made mainly on quartz and hornfels; only 1 each made on silcrete and 'Other'. In addition to facetted platforms on flakes and blades there were: 1 truncated Howiesonspoort utilized blade (on 'Other'), 1 MRP (on hornfels) of the Howiesonspoort type and 3 unifacial points (on quartzite and quartz).

UTILIZED PIECES:

Utilized lithics are the second most abundant lithic category. In all units they are mainly made on silcrete, followed by quartz and/or hornfels, then CCS and finally 'Other'.

In total 7 *outils ècaillè* were found. Units 3 and 5 had 2 each (on silcrete and hornfels) and Unit 4 had 3 (on silcrete, hornfels, and CCS). Thus *outils ècaillè* tend to occur in the lower units. There are 4 heavy edge damaged pieces: Units 2A and 4 had one each on quartz and quartzite respectively, while Unit 5 had one each on quartzite and hornfels. As with *outil ècailé* heavy edge damage pieces tend to be most abundant in pre-1 700 BP units. Only 12 grindstone fragments were found: Units 2A and 5 had 5 each, while Units 3 and 4 each had 1. Grindstone fragments tend to be made on quartzite, and only 1 was made on hornfels (Unit 5). There were 6 hammerstones being most abundant in post-1 700 BP units. The hammerstone in Unit 9 was on hornfels, while the rest of the hammerstones were on quartzite.

Utilized flakes and chips tend to be made primarily on silcrete, then quartz, and followed by hornfels or CCS, and finally 'Other'. This is the most abundant sub-category of all utilized pieces in all units. Units 4 and 5 have the highest percentages of utilized quartz flakes followed by Units 1, 3 and 2A. Silcrete is most dominant in Units 7 (82.4%), 2B (78.4%), 9 (69.6%), 3 (66.8%), 4 (65.8%), 2A (65.9%), 1 (61.1%) and 5 (47%). Units 5 and 9 have the highest percentages of utilized flakes on hornfels. CCS and 'Other' tend to be more favoured in post-1 700

BP units. In total there is no significant change in the percentages of utilized flakes between units: the difference between the highest percentage (Unit 2a = 10.8%) and the lowest percentage (Unit 7 = 5.7%) is only 5.1%. There were 6 re-used MSA/older flakes: 3 (on silcrete) from unit 2A, and 3 from Unit 5 (2 on hornfels and 1 on quartz). The former were noted by the secondary retouch having broken through the patina, and the latter had facetted platforms.

Utilized blades are mainly made on silcrete, followed by quartz, hornfels or CCS. Post-1 700 BP units tend to be more abundant in utilized blades, but Unit 4 is second most abundant in total. In Unit 4 there is a wider range of raw materials for utilized blades, and Unit 5 has the highest percentage of hornfels blades (this excludes obvious MSA blades). As in utilized flakes there is no significant difference between units for utilized blades.

Utilized bladelets in Units 2B and 3 tend to be made from quartz, while in Units 5, 7, 9, 2A and 4, they tend to be made on silcrete. CCS is used but only in low frequencies. As in utilized blades the frequencies are too small to see any significant changes between units.

On a broader level utilized pieces are made mostly on silcrete in all units, and only in Unit 5 is there a noticeable change in raw material frequencies. All units have similar percentages of total utilized pieces: the difference between the highest percentage and lowest percentage is only 6.1%. If Units 7 and 9 are ignored (due to their very low frequencies of utilized pieces) then the difference is only 1.5%. In the main two pre-1 700 BP units (4

MISCELLANEOUS FORMAL TOOLS:

These are not miscellaneous retouched pieces (MRP's); rather formal tools that are found in very low frequencies and do not warrant a separate heading for each tool type.

A hornfels NBK (naturally backed knife) was found in Unit 4 (the stratum was LCFL). Only 2 awls (on silcrete) were found: Unit 2B and 5 each had 1. Of the 4 drills found, 3 came from Unit 3 and 1 from unit 2A; all were made on silcrete. Borers tend to be most abundant in pre-1 700 BP units: 1 came from Unit 3 (on CCS), while 3 came from Unit 4 (1 silcrete and 2 on hornfels), and 1 from Unit 5 (on silcrete). Segments were made mostly on silcrete (only 1 was made on quartz) and tend to be confined to the lower units. Unit 3 had 1 quartz and silcrete segment, Unit 4 had 2 silcrete segments, and Unit 5 had 1 on silcrete. That segments occur in Units 4 and 5 is important with respects to the notion of certain depositional (excavated) units that are mixed.

In total 34 backed lithics were found (2 are unprovenienced). They tend to be made on silcrete, followed by hornfels, CCS and quartz. In decreasing order of abundance the Unit frequencies are as follows: Unit 7(30%), Unit 3 (9.1%), Unit 5 (8.3%), Unit 2B (6.8%), Unit 4 (3.7%) and Unit 2A (2.1%). Robey (1985) and Manhire et al. (1984) note that backed pieces are most common in the sandveld deflation hollows (i.e. 4 000 BP - 1 800 BP), i.e. mid-Holocene deposits. However, even the frequencies of total backed pieces is too small to make any inferences and/or comparisons. Mazel and Parkington (1983) observed that backed pieces tend to occur mostly in the Sandveld (15% - 35%), and are rare in mountain sites (<5%). They suggest that backed pieces were used as barbs for composite arrows.

Backed pieces were found in Units 3(4.6%), 5 (3.3%), 4 (1.5%), and 2A (0.9%). In Unit 2A both backed pieces were on hornfels, while Units 3, 4 and 5 were made on silcrete. Backed points are the second most abundant of the backed lithics and tend to be more abundant in pre-1 700 BP units: Unit 7 (20%), 3 (3.6%), 5 (1.7%), 4 (0.7%), and 2A (0.4%). Backed flakes only occur in Units 2A (0.4%) and 2B (1.4%), and both were made on silcrete. Backed blades are found in Units 2A (4.1%), 4 (0.7%) and 2B (0.4%). Only the 2 backed blades from Unit 2B were made on CCS while the rest were made on silcrete. Backed bladelets were found in Units 7 (10%), 5 (3.3%), 2B (1.4%), and 4 (0.7%). All were made on silcrete except 1 each on hornfels (Unit 5) and on quartz (Unit 4).

<u>MRP's:</u>

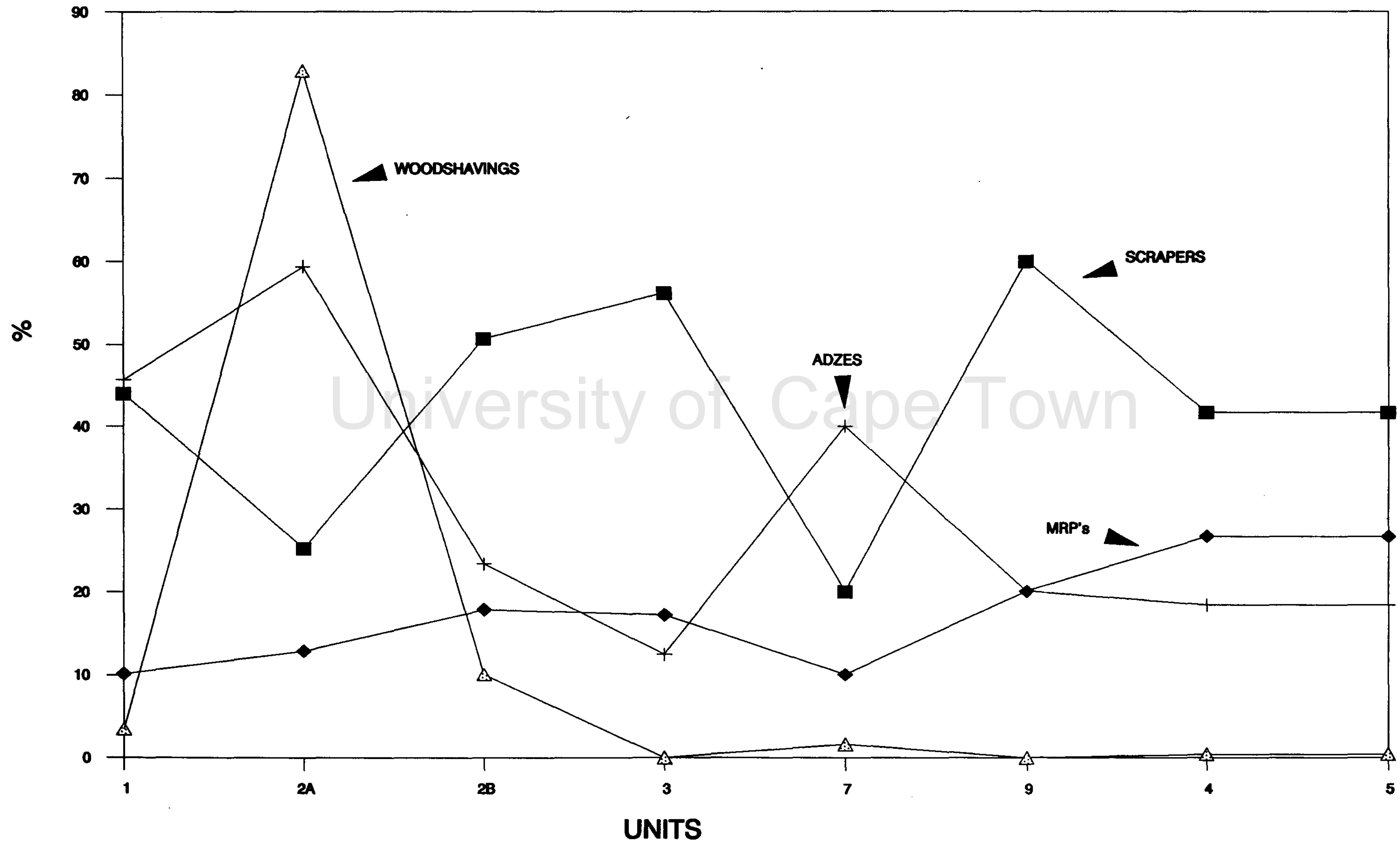
This is the third most abundant formal tool, made mostly on silcrete in all units. In post-1 700 BP units, however, CCS, hornfels and 'Other' are either equal to or are greater than the percentages of quartz MRP's. In pre-1 700 BP units, especially Units 4 and 5, the percentage of silcrete and CCS MRP' (in relation to post-1 700 BP units), while quartz, hornfels and 'Other' increase. MRP's with facetted platforms occurred on 2 silcrete flakes in Unit 2B and they are then re-used MSA flakes. MRP's are overall most abundant in pre-1 700 BP units: Unit 5 (26.8%), Unit 4 (21.5%), and Unit 9 (20%). MRP's peak again in Units 2B (17.8%) and 3 (16.5%) - the percentage difference between these 2 units is too small to be significant. In Unit 3 MRP's outnumber adzes, but only by 1%. There tends to be a negative correlation between adzes and MRP's, and a positive correlation between MRP's and scrapers. That is the percentages of MRP's and scrapers decrease, whereas adzes increase. Units 4 and 5 are exceptions. In Unit 5 adzes and MRP's increase simultaneously while scrapers decrease, and in Unit 4 scrapers and adzes decrease simultaneously while MRP's increase.(fig 4.10)

SCRAPERS:

This section is divided into two parts: one dealing with scrapers per unit, the other with different scraper types, where a 'new' type of scraper style is proposed: the Gothic Arch scraper. Scrapers are common to all sites, however, they peak in frequency at the sandveld and coastal sites, i.e. > 50% (Mazel and Parkington 1983). They are always common and only when adze frequencies are high are scrapers not the most abundant formal tool (Mazel and Parkington 1983).

As with MRP's, scrapers tend to be made on silcrete, followed by quartz and hornfels, CCS or 'Other'. In Unit 2A there is a noticeable decrease in silcrete scrapers, this material being replaced by CCS and 'Other'. Units 1 and 2A are the only units with quartzite scrapers. Unit 3 has a noticeable decrease in quartz scrapers and an increase in silcrete scrapers. Units 5 and 7 have the most hornfels scrapers. Tortoise Cave also demonstrates a peak in silcrete use in pre-ceramic units (Robey 1987). Thus in post-1 700 BP units there tends to be an increase in the variety of raw materials used for scraper manufacture. In decreasing order, units most abundant in scrapers are: 9 (60%), 3

FIG. 4.10: PERCENTAGES OF ADZES, SCRAPERS, MRP's AND WOODSHAVINGS



(53.6%), 4 (52.6%), 2B (50.7%), 1 (44.1%), 5 (41.7%), 2A (25.2%) and 7 (20%). Units 7 and 9 have very low frequencies of scrapers and formal tools and thus their percentages may skew the overall distirbution of scrapers in the deposit. Even if these 2 units were ignored, no clear patterning in the distribution of scrapers over time can be found. There is a strong negative correlation between scrapers adzes and wood shavings, i.e. where adzes and wood shavings increase, scrapers decrease (fig 4.10). The scraper, adze and wood shavings correlation is strengthened when units with botanical remains occur. That is adzes dominate units that have many botanical remains and or woodshavings, while in those units that are mainly hearth units, scrapers dominate, i.e. Units 2B, 3, 9, and 5. Unit 4 has both hearths and botanical features (more of the former than the latter though) and reflects an intermediate (or less robust) correlation with units with botanical remains alone. This division is more apparent when comparing Units 2A and 2B (the bedding-ash complex). Here the scraper to adze ratio in Unit 2A (bedding) is 1:2.4, while in Unit 2B (ash) this ratio is inverted to 1:0.6. This may reflect an activity variance within the site where wood working occurred in the bedding area (82% of wood shavings come from Unit 2A) and the working of animal skins in Unit 2B (the hearth area).

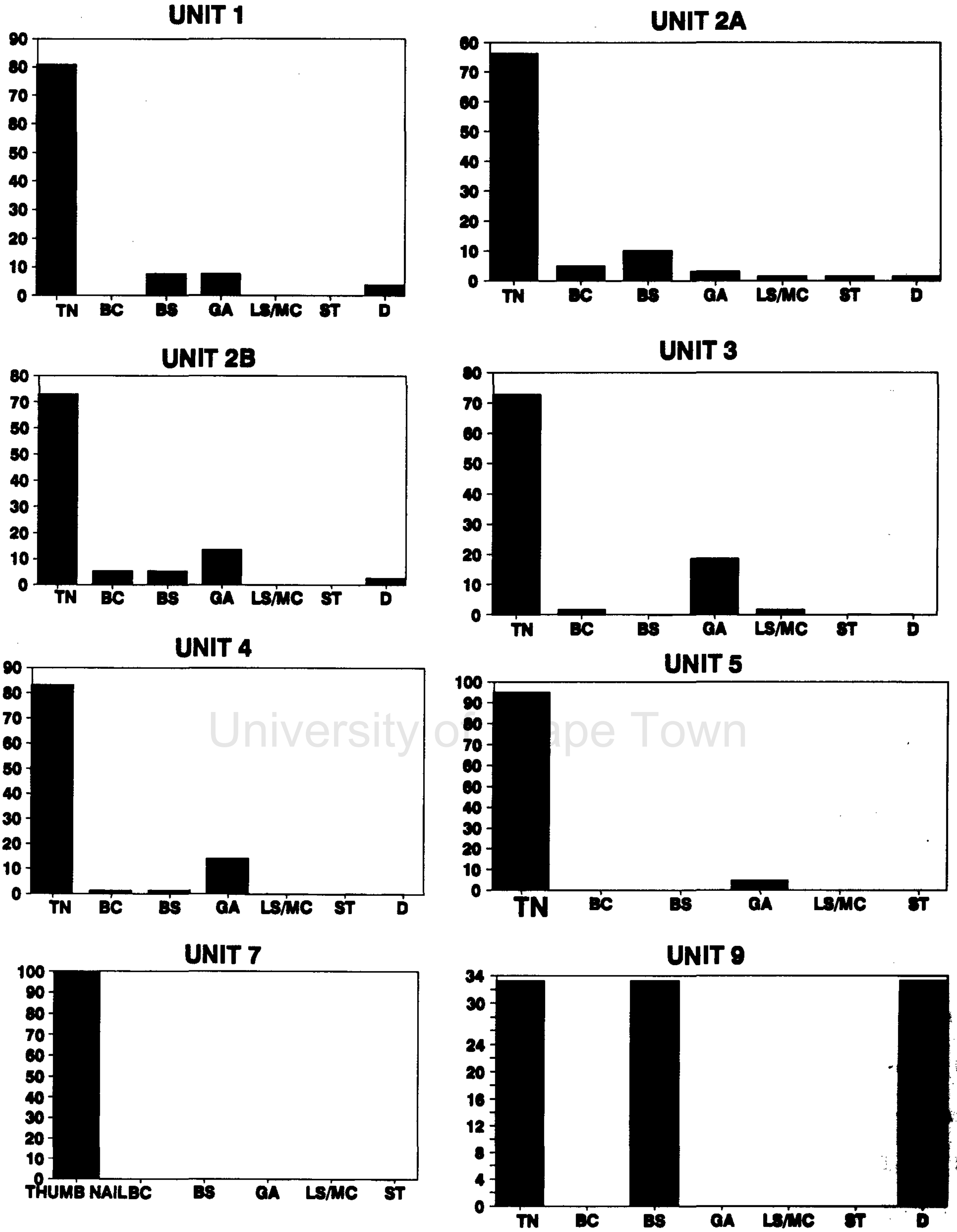
SCRAPER TYPES:

Table 4.10 indicates the frequencies of different scraper types and their raw materials found at Andriesgrond Cave, while fig.4.11 illustrates this. Parkington and Mazel (1983:17) suggest that the differences "between traditions should be sought in non-functional characteristics." That is, while there is a dominant scraper type such as the small convex scraper (as suggested by

TABLE 4.1 1 DIFFERENT TYPES OF SCRAPERS

	QZITE		QZ		SILCRETE		HF		CCS		OTHER		n	% OF TOTAL
UNIT 1	f	%	f	%	f	%	f	%	f	%	f	%	f	%
THUMB NAIL	0	0	3	21.4	15	71.4	1	0	1	7.1	1	0	21	80.7
BACKED	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BOAT SHAPED	0	0	2	100	0	0	0	0	0	0	0	0	2	7.69
GOTHIC ARCH	0	0	0	0	2	100	0	0	0	0	0	0	2	7.69
LARGE-MEDIUM CONVEX	0	0	0	0	0	0	0	0	0	0	0	0	0	0
STEPPED	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ON DISPLAY	1	100	0	0	0	0	0	0	0	0	0	0	1	3.84
TOTAL	1	3.8	5	19.2	17	65.4	1	3.8	1	3.8	1	3.0	26	
UNIT 2A														
THUMB NAIL	2	2.7	12	32.4	20	37.0	1	2.7	6	13.5	4	10.8	45	76.2
BACKED	0	0	3	100	0	0	0	0	0	0	0	0	3	5.08
BOAT SHAPED	0	0	5	83.3	0	0	0	0	1	16.6	0	0	6	10.1
GOTHIC ARCH	0	0	1	50	1	50	0	0	0	0	0	0	2	3.38
LARGE-MEDIUM CONVEX	0	0	0	0	0	0	1	100	0	0	0	0	1	1.69
STEPPED	0	0	1	100	0	0	0	0	0	0	0	0	1	1.69
ON DISPLAY	0	0	0	0	1	100	0	0	0	0	0	0	1	1.69
TOTAL	2	3.38	22	37.2	22	37.2	2	3.38	7	11.8	4	6.77	59	
UNIT 2B														
THUMB NAIL	0	0	4	14.0	10	66.6	1	3.70	1	3.70	3	11.1	27	72.9
BACKED	0	0	2	100	0	0	0	0	0	0	0	0	2	5.40
BOAT SHAPED	0	0	2	100	0	0	0	0	0	0	0	0	2	5.40
GOTHIC ARCH	0	0	1	20	3	60	1	20	0	0	0	0	5	13.5
LARGE-MEDIUM CONVEX	0	0	0	0	0	0	0	0	0	0	0	0	0	0
STEPPED	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ON DISPLAY	0	0	1	100	0	0	0	0	0	0	0	0	1	2.70
TOTAL	0	0	10	27.0	21	56.7	2	5.40	1	2.70	3	8.10	37	
UNIT 3														
THUMB NAIL	0	0	4	9.3	41	88.3	1	2.3	0	0	0	0	43	72.8
BACKED	0	0	0	0	1	100	0	0	0	0	0	0	1	1.69
BOAT SHAPED	0	0	0	0	0	0	0	0	0	0	0	0	0	0
GOTHIC ARCH	0	0	1	9.1	9	01.8	0	0	1	9.1	0	0	11	18.6
LARGE-MEDIUM CONVEX	0	0	0	0	0	0	1	100	0	0	0	0	1	1.69
STEPPED	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ON DISPLAY	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	0	0	5	8.5	51	86.4	2	3.4	1	1.7	0	0	59	
UNIT 4														
THUMB NAIL	0	0	16	25	35	61.5	1	1.9	5	7.7	2	3.8	59	83.0
BACKED	0	0	0	0	1	100	0	0	0	0	0	0	1	1.40
BOAT SHAPED	0	0	1	100	0	0	0	0	0	0	0	0	1	1.40
GOTHIC ARCH	0	0	0	0	9	90	0	0	0	0	1	10	10	14.0
LARGE-MEDIUM CONVEX	0	0	0	0	0	0	0	0	0	0	0	0	0	0
STEPPED	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ON DISPLAY	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	0	0	17	23.9	45	63.3	1	1.4	5	7	3	4.2	71	
UNIT 5														
THUMB NAIL	0	0	9	53.3	8	40	2	6.7	0	0	0	0	19	76
BACKED	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BOAT SHAPED	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LARGE-MEDIUM CONVEX	0	0	0	0	1	100	0	0	0	0	0	0	1	4
STEPPED	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ON DISPLAY	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	0	0	9	36	14	56	2	0	0	0	0	0	25	
UNIT 7														
THUMB NAIL	0	0	1	50	0	0	1	50	0	0	0	0	2	100
BACKED	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BOAT SHAPED	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LARGE-MEDIUM CONVEX	0	0	0	0	0	0	0	0	0	0	0	0	0	0
STEPPED	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ON DISPLAY	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	0	0	1	50	0	0	1	50	0	0	0	0	2	
UNIT 9														
THUMB NAIL	0	0	0	0	1	100	0	0	0	0	0	0	1	33.3
BACKED	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BOAT SHAPED	0	0	1	100	0	0	0	0	0	0	0	0	1	33.3
GOTHIC ARCH	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LARGE-MEDIUM CONVEX	0	0	0	0	0	0	0	0	0	0	0	0	0	0
STEPPED	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ON DISPLAY	0	0	0	0	1	100	0	0	0	0	0	0	1	33.3
TOTAL	0	0	1	33.3	2	66.6	0	0	0	0	0	0	3	

FIG. 4.11:SCRAPER TYPES PER UNIT.



KEY:

TN = THUMBNAIL

GA = GOTHIC ARCH

D = ON DISPLAY

BC = BACKED

LS/MC = LARGE-MEDIUM CONVEX

BS = BOAT-SHAPED

ST = STEEP/BLADELET CORE

Deacon 1984), stylistic differences may be found and thus indicating regional differences (in 'time and place'). Scrapers were divided into 7 types with the help of John Parkington: small convex (thumbnail), of which boat-shaped/elongated and Gothic Arch are subdivisions, backed, large and medium convex, steep scraper (or bladelet core) (*cf* Albany) and on display (i.e. scrapers that cannot be located and identified as to type, but their provenience and raw materials were noted). In table 4.1Φ the percentages refer to the total number of scrapers for that unit, and not the total number of formal tools.

Thumbnail scrapers (217 or 75.3%) are the most dominant scraper type in all units. They tend to be made on silcrete and then quartz while other raw materials are rarely used. Units 1, 2A and 2B have the widest range of scraper types. That thumbnail scrapers are most abundant in Units 4 and 5, and that the only medium/large scrapers found in the deposit occur in post-1 700 BP units (Units 3 and 2A, on hornfels) is important and it again suggests the Holocene nature of these 2 lower units. That is if Units 4 and 5 were only Terminal Pleistocene or Early Holocene in nature, then the medium and large scrapers should (by reference to Deacon 1984) have commonly occured in these two units and be less frequent in post-1 700 BP units. That older/MSA lithics are commanly found in post-1 700 BP units is clear and will be discussed later. If Units 7 and 9 were ignored (due to low frequencies) there tends to be a slight decrease in thumbnail scrapers through time.

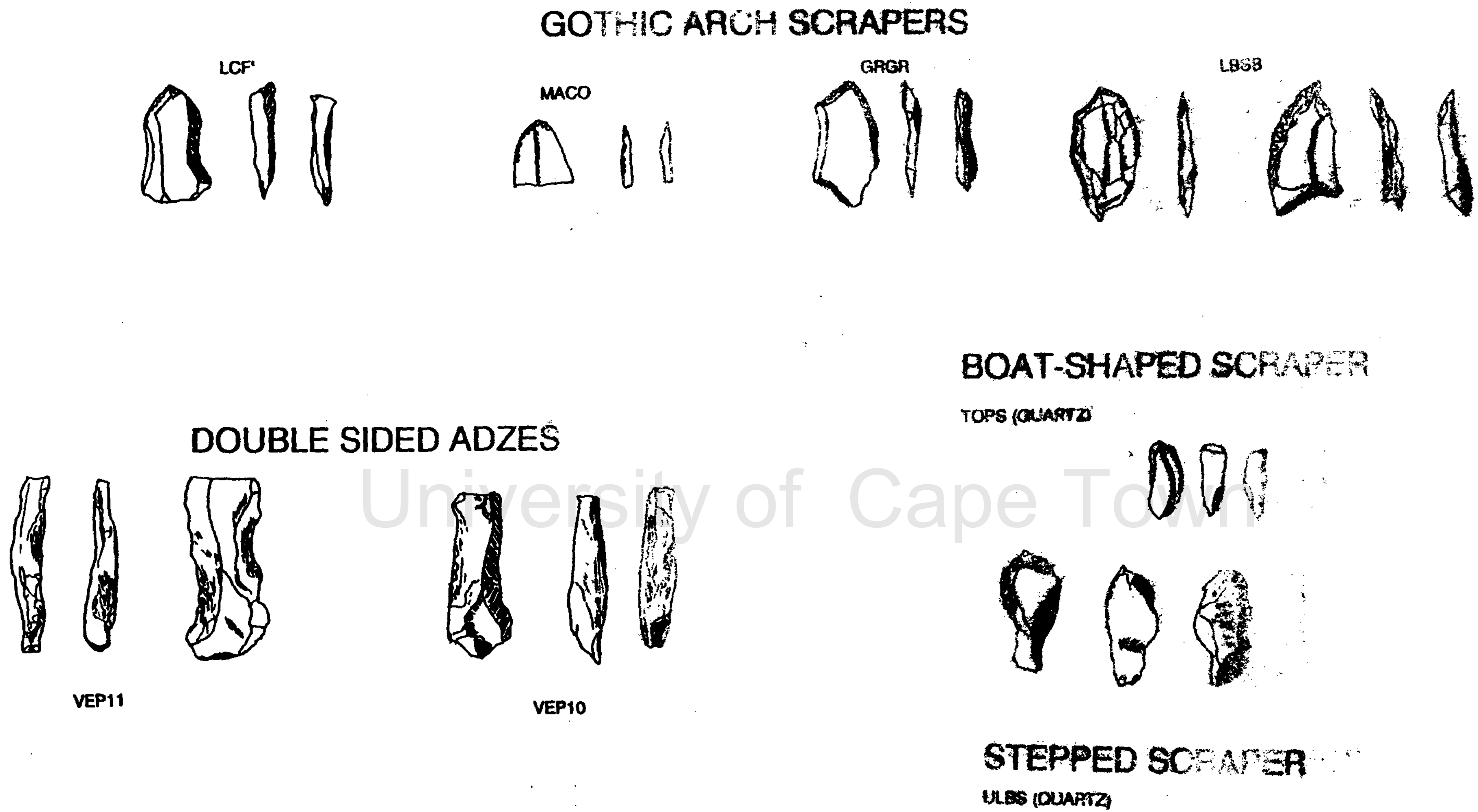
In total 7 backed scrapers were found. They were made on quartz or silcrete. Backed scrapers in Units 2B (5.4%) and 2A (5.1%)

were made on quartz, while those in Units 3 (1.7%) and 4 (1.4%) were made on silcrete. The frequencies are too low to make any general conclusion apart from the change in raw materials.

Boat-shaped scrapers are small convex scrapers that are elongated with a natural back. In total 12 were found and they are most abundant in post-1 700 BP units: Unit 9 (33.3; n = 1!), Unit 2A (10.2%), 1 (7.7%), 2B (5.4%) and 4 (0.4%). They are mostly made on quartz and only Unit 2A had 1 made on CCS.

Gothic Arch scrapers, also more commonly known as small convex scrapers, is a 'new' type of scraper whose retouched end ends in an obtuse angle (suggested by John Parkington). There were \35 Gothic Arch scrapers (i.e. not an insignificant amount in comparison to other scraper types) that were made mainly on silcrete, then quartz, hornfels and CCS. They are most abundant in Unit 5 (20%), 3 (18.6%), 4 (14.1%), 2B (13.5%), 1 (7%) and 2A (3.4%). While the frequencies of these scrapers do not change constantly through time, there is a slight change in the raw materials used for this type of scraper. Quartz becomes more dominant through time, while silcrete decreases - Unit 1 is an exception. This is especially evident between Units 3, 2B and 2A.

A quartz steep scraper / bladelet core (Deacon 1978) was found in Unit 2A. Only 4 scrapers of the previous analysis have not been re-located. As stated above their provenience and raw material had been noted. Units 1, 2A, 2B, and 9 each had one missing, made on quartzite, silcrete, quartz and silcrete respectively.


GOTHIC ARCH SCRAPERS
LCF'
MACO
GRGR
LBSB
BOAT-SHAPED SCRAPER
TOPS (QUARTZ)
DOUBLE SIDED ADZES
VEP11
VEP10
STEPPED SCRAPER
ULBS (QUARTZ)

Different scraper types can have 3 meanings: it could be a functional difference, it could be stylistic differences (see Mazel and Parkington 1983 above), or both. Due to the low frequencies of each scraper type it cannot be known for certain. At Renbaan Cave scrapers are also mainly made on silcrete and boat-shaped scrapers on quartz (Kaplan 1984). Thus, these two sites are similar to Andriesgrond Cave (in post-1 700 BP units).

ADZES:

In total 235 adzes were found. They are most abundant in Units 2A (59.9%), followed by 1 (45.8%), 7 (40%), 2B (23.3%), 9 (20%), 5 (18.3%) and 3 (12.3%) - see fig. 4.13. It was noted earlier that there was a positive correlation between the percentages of adzes, woodshavings and botanical features. Adzes are made mainly on silcrete, then CCS, hornfels, 'Other', quartz and quartzite (in descending order). In Units 5 and 7 there is a significant decrease in the percentage of silcrete adzes with an increase in hornfels, CCS and/or 'Other', while in post-1 700 BP units there tends to be a wider range of raw materials used for adze production. That between 17.2% and 40% of adzes are found in pre-1 700 BP units is significant and will be discussed later. Adzes peak in Units 2A and 7; but, once again, the low frequency of adzes in Unit 7 may be misleading, and if it was ignored then the distribution of adzes would be bimodal with Unit 5 as the second most adze -rich unit.

Table 4.12 shows the break down of adzes as analyzed by the writer. Double-sided adzes are adzes that have clear step flaking on both sides (see 'slugs' - Goodwin 1926, and fig. 4.12).

TABLE 4.1[illegible] ADZE FREQUENCIES AND SUB-GROUPS

UNIT	STANDARD		"OLDER" ONLY		OLDER & DOUBLE SIDED		DOUBLE SIDED ONLY		SILCRETE ONLY		TOTAL OLDER			TOTAL DOUBLE SIDED		TOTAL	MASTIC (NOT INCL- IN % OR f)
	f	%	f	%	f	%	f	%	f	%	f	%	%*	f	%	f	f
1	20	74.1	7	[illegible]	1	3.7	[illegible]	[illegible]	[illegible]	[illegible]	8	29.6	23.1	5	18.5	27	0
2A	78	56.1	31	[illegible]	12	8.6	[illegible]	[illegible]	[illegible]	82.7	43	30.9	27.8	41	29.4	139	11
2B	10	58.8	4	5.9	2	11.8	4	23.[illegible]	[illegible]	[illegible]	6	35.2	23.1	6	35.2	17	2
3	1	7.7	3	38.5	2	15.4	5	[illegible]	[illegible]	[illegible]	5	38.4	77.8	7	53.8	13	0
7	4	100	1	0	0	0	0	0	[illegible]	25	1	25	0	0	0	4	0
9	0	0	1	100	0	0	0	0	1	100	1	100	100	0	0	1	0
4	11	47.8	3	34.8	0	0	4	17.4	18	78.3	3	13.0	44.4	4	17.4	23	1
5	10	90.9	2	9.1	0	0	0	0	6	54.5	2	18.1	16.7	0	0	11	1
TOTAL	134	57	52	18.2	17	7.2	46	19.6	176	74.9	55	[illegible]	31.3	63	26.8	235	15

* PERCENTAGES OF SILCRETE ADZES

Standard adzes refer to adzes that have neither MSA characteristics (i.e. flaking to one edge) nor are they double-sided. All of the MSA flakes occur on silcrete adzes, with the exception of one patinated hornfels adze, while double-sided adzes are made mainly on silcrete, but they do occur in low frequencies on hornfels and CCS.

Kaplan (1985) noted that 70% (or 50 out of 75) of these adzes were found at Andriesgrond. Since then 101 more adzes (mostly silcrete) have been found. The writer re-analyzed all adzes and the total is now 72 MSA/'older' adzes (3 are unprovenienced); his criteria for patination was however perhaps more rigorous than Kaplans. Of these 72 adzes 87.5%, of these adze-type totals occur in post-1 700 BP units, and 4.2% are unprovenienced. However, when looking at reused silcrete flakes within each pre-/post-1 700 BP units the percentages decrease significantly. Pre-1 700 BP units have 23.1% of silcrete adzed on MSA/'older' flakes, and post-1 700 BP units 42%.

Double-sided adzes are 'slugs' (Goodwin 1926), at Andriesgrond Cave, occurs on 26.8% of <u>all</u> adzes found. There is however, a significant decrease in the percentages of double-sided adzes from Units 3 to 1. Unit 3 has the highest percentage of MSA/'older' adzes (percentage is from total silcrete adzes), double-sided adzes and adzes that are both double-sided and 'older'. Some double-sided adzes do occur in pre-1 700 BP units (Unit 4 has 4 or 17.4%), but in total 93.7% of all double-sided adzes occur in the ceramic units. As with 'older' silcrete flakes, these percentages decrease significantly when compared per unit grouping. Pre-1 700 BP units, in total, have 7.5% of their adzes as double-sided adzes; while post-1 700 BP units have 24%. This is still significant, especially for post-1 700 BP units.

DISCUSSION:

Lithic analysis revealed that the deposit in units 4 and 5 contain essentially mid-Holocene lithic assemblages 'assocaited' with tortoise bone giving Terminal Pleistocene 'ages'. My assumption is that if dates of *c.* 14 500 BP to *c.* 10 200 BP apply to materials found the in these deposits, then the artefacts should look Terminal Pleistocene to Early Holocene, as defined by Deacon (1984), i.e. low formal tools, large to medium sized scrapers and high frequencies of quartz bladelets. Alternatively, if these dates are intrusive into lithic assemblages of mid- to Late Holocene age very different patterns should emerge, i.e. small convex scrapers, an increase in formal tools, and backed pieces including segments. In Unit 4 the lithic assemblage is obviously mid-Holocene, as indicated by the formal tools and near absence of quartz bladelets. There is, however, a significant percentage of MSA stone tools in Unit 5 along with the mid-Holocene set of artefacts. All of these lower three ^{14}C dates came from tortoise bone and indicate either Terminal Pleistocene or Early Holocene ages. In Chapter 5 it is noted that these two units had tortoises with large medio-lateral breadths, similar to other Pleistocene measurements as observed by Klein and Cruz-Uribe (1983, 1986, 1989). It was also noted in Chapter 3 that a burial was found in squares G5/G6 and that is was probabaly dug into these lower two units, as indicated by the field notes and Harris Matrix. The tortoise bone from all 3 of these older dates came from squares near the burial, i.e xxx. Thus, if tortoise bone from the MSA was dug out by the people who dug the burial, then it follows that some of the earlier deposit would have been incorporated in later deposit. Tortoise bone of a mid-Holocene assemblage would thus easily be contaminated and skewed by MSA tortoise bone. It would take a small piece of MSA tortoise (i.e. ±50 000 - 25 000 BP) to skew the ^{12}C:^{14}C ratios of mid-Holocene tortoise (i.e. 8 000 - 4 000 BP) and produce an apparently Terminal Pleistocene 'date'. This scenario, whilst conjectural, would successfully explain the dates, the artefacts and the lack of substantial numbers of 10 - 14 000 year old assemblages as defined by Deacon (1978).

There do not appear to be any significant changes in the raw materials utilized through time. Only in Units 5 and 9 does hornfels increase slightly (Unit 4 and Unit 1 also have a slight increase and Unit 1). Post-1 700 Bp units tend to have a slightly higher percentage of quartzite, CCS and 'Other' raw materials than pre-1 700 BP units. That stone tools of a mid-Holocene type (Deacon 1987) were dominant in Unit 4 and 5, suggests strongly that these deposits are mixed with Terminal Pleistocene faunal deposits which presumably yielded the ^{14}C dates between c.14 500BP - 10 200 BP. Only in Unit 5 is there a noticeable MSA and Terminal Pleistocene lithic component (seen in the high frequencies of hornfels and discussed above).

Throughout the lithic analysis Units 7 and 9 were compared against other units to see if there were any similarities or differences which might indicate their relative chronological position within the sequence. Unfortunately in comparison with other units these 2 units' lithic assemblages were very small and only tentative conclusions can be made in this respect. While these figures and percentages were not always shown (but can be seen and worked out from the lithic inventories), Unit 7 seems to be most similar to Units 3 and 4, while Unit 9 appears to be more similar to Units 4 and 5. They do, however, in some cases appear to be similar to Units 2A and 2B, but this is not as often as with the other units. Thus, these 2 units were placed between units 3 and 4 in a relative chronology with Unit 7 before Unit 9. This is problematic in that one has to be very careful when making such comparisons as it was also noted by the writer that the lithic percentages of Unit 1 in some cases were similar to Unit 5 !

The occurrence of adzes in pre-1 700 BP units does not put into question Mazel and Parkington's hypothesis (1983). They argue that adzes are related to woodworking and this is seen in the high frequencies of woodshavings where adzes occur. They do acknowledge that the availability of wood is an important factor, e.g. both the sandveld and mountain areas have usable wood, and thus an analysis of other finds must also be undertaken. By looking at Andriesgrond Cave, De Hangen and Diepkloof they found a relationship between botanical remains, woodshavings and adzes. Adzes were used to make digging sticks to gather geophytes; hence woodshavings produced in the manufacture of digging sticks. They also observed that the soil type differs between these two regions, where the mountain areas have a much harder soil. Thus digging sticks in the mountains would have been worn more frequently in hard soils than in soft sands, and thus this would require more digging stick manufacture and re-sharpening (and see

Vincent 1985). They conclude that there are three interwoven factors related to adze production: availability of usable wood, "the turnover rate of wooden tools" which is related to the soil-type and emphasis on plant foods" (1983:22). Thus it does not put into question their hypothesis rather it extends it into a greater time span. This model has been tested at numerous S.W. Cape sites. However, while it appears to be true for ceramic deposits, it cannot be inferred that it applies only to this time period. Firstly their hypothesis implies that adze production, and thus woodshavings, occurred only in ceramic times as a plant food emphasis is more evident in these deposits in contrast to pre-ceramic units (see fig.'s 4.13 and 4.14 for the occurrence of adzes and woodshavings on the Harris Matrix). Secondly, while adzes were used for digging stick manufacture, they were not used exclusively for digging sticks. Historical records (Wikar 1779 in Mossop 1935) mention that the Soaqua used trapping pits with wooden spikes to kill elephants, hippopotami, and other large animals. Thus, it would be more accurate to stay that adze are related to woodworking and the wooden artefacts, such as pegs, bows, spikes and fire drills used by prehistoric people. Thirdly, adzes have been dated at KFR2 (Nackerdien 1989) to ± 3 480 BP, and now to mid-Holocene deposits at Andriesgrond. It must be noted that sites such as De Hangen has, essentially, post-1 700 BP deposits, and that several deposits of Andriesgrond Cave were believed to be mainly post-1 700 BP. Nackerdien (1989) also noted that there was a correlation between high adze frequencies and high marine shell percentages. Nackerdien (1989:34) argued:

> If adzes are most numerous in levels from the last 2 000 years (associated with the fugitive-like settlement by hunter-gatherers) one could propose that links with the

FIG. 4.13: OCCURENCE OF ADZES ON THE HARRIS MATRIX

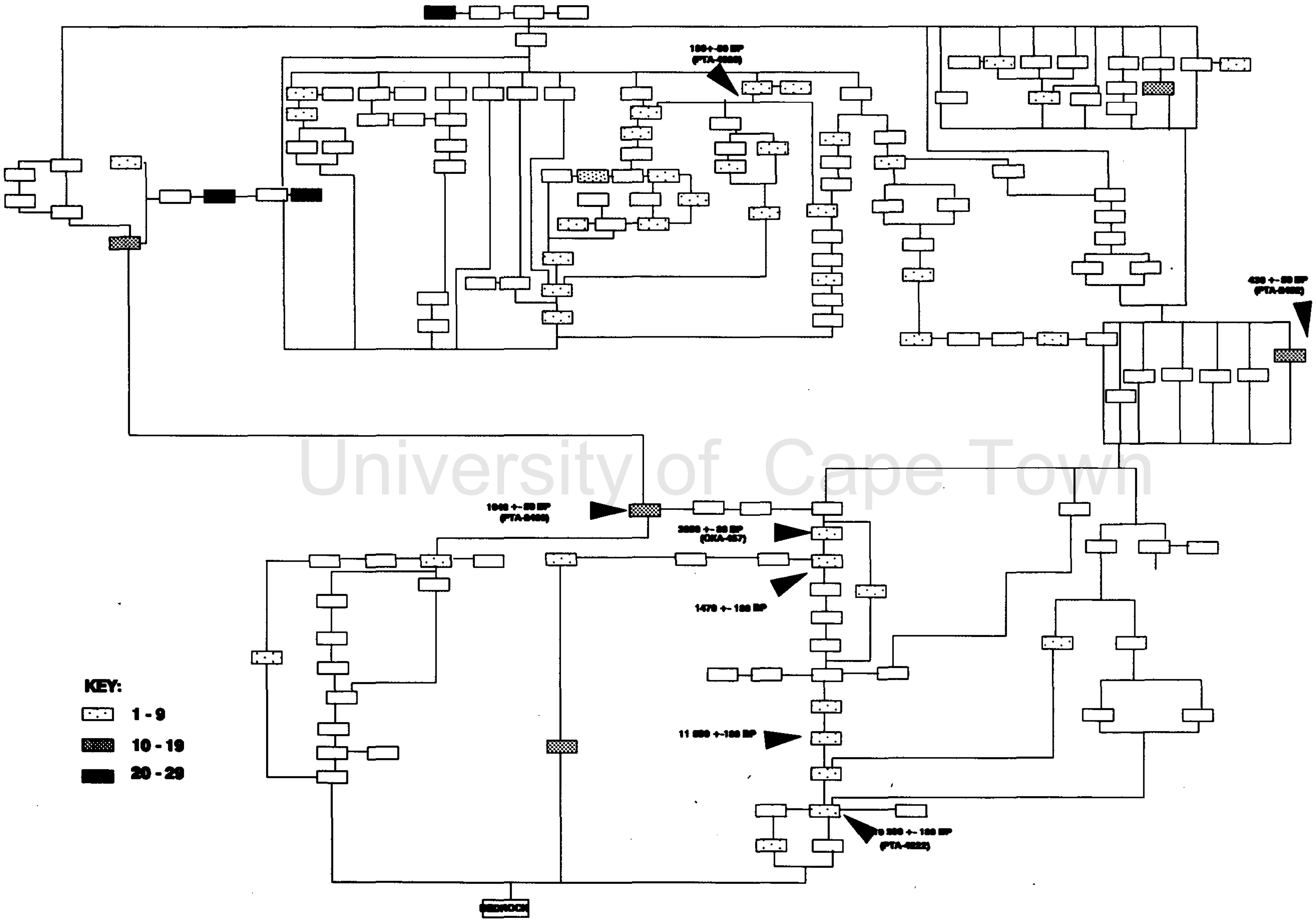
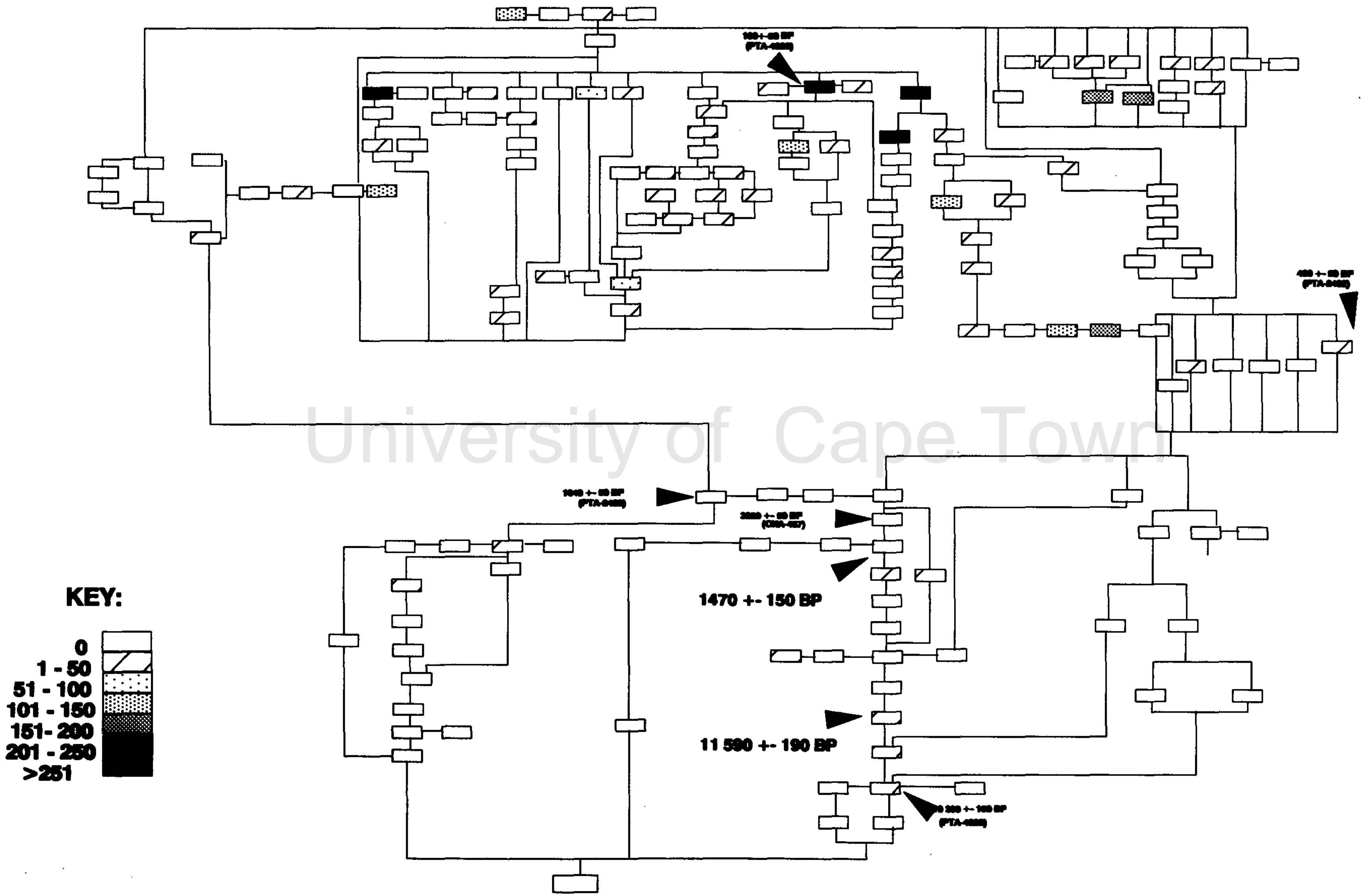


FIG 4.14: WOOD SHAVINGS ON THE HARRIS MATRIX



> coast would have been cut or damaged, assuming that the pastoralists would favour the coastal plains for settlement (Manhire 1984). With this in mind, the high frequencies of adzes in the mountain sites would presumably be accompanied by the low numbers of marine shell. However, in the LBA layers there is a very high incidence of both marine shell and adzes. The evidence seems to favour the fact that the LBA events pre-date the 2 000 year mark, or that some more complex relationship between adze manufacture and access to the coast is reflected here.

This is problematic in that at Andriesgrond Cave the Unit with the highest percentage of marine shell and adzes, is Unit 2A, i.e. post-dating 1 700 BP, this is however relative to the volume of deposit in the cave (mentioned in Chapter 3). In Chapter 3 it was suggested that marine shell was primarily brought back to the site as a raw material related to plant food production (developed in Chapter 6). What is important is that there is a high incidence of adzes, woodshavings, botanical remains and marine shell, as well as an increase in double sided adzes and adzes on re-used MSA flakes. All these are most abundant in Units 2A and the writer will argue (in Chapter 8) that these, as adzes on 'older' silcrete flakes, are not primarily related to access to the coast (as implied by Nackerdien 1989; and Kaplan 1984), but rather to an increase in social stress that was alleviated in various ways.

It was also noted that of the double sided adzes 93.7%in total, or 24% in this unit grouping, occurred mainly in Post-1 700 BP units while the rest occured in pre-1 700 BP units (7.5% of total adzes in these units). There is a slight correlation between adzes on silcrete MSA flakes and double sided adzes in that where the one occurs so does the other, especially in Unit 2A, and even in Unit 4. In Chapter 6 it is noted that botanical remains, especially those in LCPI, indicate a longer period of single occupations. That is there was a decrease in mobility, although coastal contact was present (either by trade or by mobility) that coincided with the arrival of pastoralists. If there was a decrease in mobility, primary silcrete sources would have been 'eliminated', hence secondary sources - MSA scatters. One must also ask why would both sides of an adze be used, not all the time, rather only in some instances ? If primary silcrete sources were 'cut off' or restricted then it may be feasible to assume that adzes were retouched on both sides to achieve maximum efficiency from a single adze. A similar argument can be made for re-used MSA/'older' flakes. This would then agree with Kaplan (1985) conclusion. This still remains lithocentric and a further explanation is given in Chapter 8.

CONCLUSIONS:

The three aims of this chapter were to obtain a better understanding of the stratigraphy (and ^{14}C dates), to try and find a chronological position for units 7 and 9, and to demonstrate the occurrence of adzes in pre-1 700 BP units. It was shown that Units 4 - 9 were mostly mid-Holocene to later lithic assemblages and thus reinforcing the notion that the radio-carbon dates reflect the age of a chronologically intrusive element, namely tortoise bone.

The occurrence of adzes in pre-1 700 BP units was not used to refute hypothesis Mazel and Parkington (1983) mentioned above; rather was suggested that it may in fact have occurred much earlier than was originally thought. It was also noted that a significant percentage of adzes were made on MSA/'older' flakes and this is thought to be part of a symbolic response to the incursion of Khoi pastoralists into the S.W. Cape at c. 1 700 BP. Chapter 8 shows how social relations can be reified onto material culture and subsistence bases and still keep their symbolic nature.

Two 'new' lithic sub-categories were introduced: the Gothic Arch scraper and double sided adze. It was noted that Gothic Arch scrapers tend to be more abundant in pre-1 700 BP units while double sided adzes were almost exclusively restricted to post-1 700 BP units. These adzes are believed to indicate attempts at utilizing limited stone resources with maximum efficiency.

No consistent change through time in raw materials could be found except that hornfels tends to be more abundant in pre-1 700 BP units, while CCS and 'Other' are more abundant in post-1 700 BP units.

In conclusion it was suggested that while lithic analysis yields important information, the analysis itself should not be lithocentric, i.e. people should not be seen in the stones, rather stones should be seen as part/extension of an ideological system.

CHAPTER 5.

FAUNAL ANALYSIS:

INTRODUCTION:

Macromammalian remains from Andriesgrond cave were analysed by R.G. Klein, and micromammalian remains by D.M. Avery. The results from these analysis were, however, grouped according to the original units (see chapter 2), and a final assimilation into the new unit groupings is not yet available. As indicated in the lithic analysis Units 4 and 5 are mixed Terminal Pleistocene and Holocene deposits. Thus, an attempt was made to infer the changes in faunal exploitation through time in the S.W. Cape by comparison with other sites. The medio-lateral breadths of humeri distal epiphysis of *Chersina angulata* (tortoise) were measured to see if a decrease in tortoise mean size coincided with the change in fauna exploited by the cave's inhabitants, as seen in other sites analyzed by Klein and Cruz-Uribe (1983, 1986, 1989). Bone weights were taken and comparisons between units were made. Faunal changes through time are viewed in terms of an intensification on smaller animal food packages, in conjunction with botanical and lithic remains, as a response to environmental social pressures that coincide with the arrival of pastoralists in the S.W.Cape.

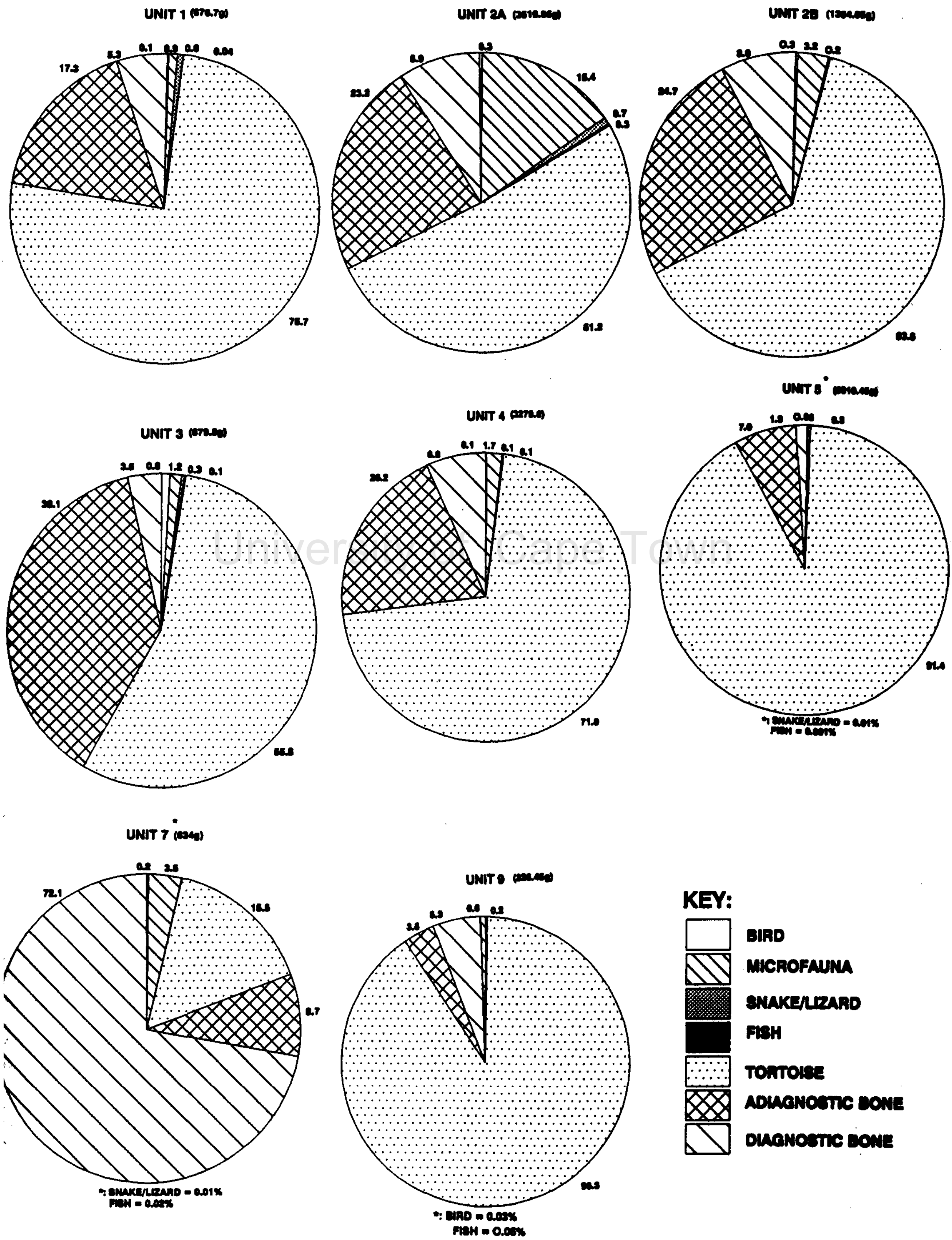
It must be remembered that the dates from pre-pottery strata (LCFL = 14 870 ± 150 BP, PTA-5642; BBSA = 11 590 ± 190 BP, PTA-5646; LBSB = 10 200 ± 1 800 BP, PTA-4222; in descending stratigraphic order) came from tortoise bone and that they may indicate, in places, a mixed Terminal Pleistocene and Holocene faunal assemblage. Thus only tentative conclusions can be drawn from pre-pottery strata (i.e. Units 4, 5, 7 and 9), while post-1 700 BP strata may give wider meaning. As shown in the lithic analysis post-1 700 BP units tend not to be mixed with pre-pottery units and thus they can be analysed separately.

The faunal remains preserved at Andriesgrond are by no means indicative of the entire Soaqua's diet. Early travellers' accounts yield much information about animal species not present in the deposits. Dapper (1668, in Schapera 1933) and Wikar, Barrow and Lichtenstein (1779, 1801, and 1812, respectively, in Mossop 1935) mention that in addition to mammals the Soaqua also ate ant larvae, grass seeds, locusts, honey and resin. These records also mention methods of hunting/trapping and fishing: besides bow and arrow hunting and snaring the Soaqua used trapping pits for hippopotamus and other large game (Wikar), and basket traps and harpoons to catch fish (Barrow and Lichtenstein).

ANALYSIS OF ANDRIESGROND FAUNA:

All bone from bulk samples and existing boxes of bone was reanalyzed, weighed and grouped into 7 categories: Bird, Microfauna, Snake/Lizard, Fish, Adiagnostic Bone and Diagnostic Bone. The results are in the form of weights (grams) and percentages are worked out by dividing the total weight of each faunal category by the total weight for that unit. Thus, while densities cannot be worked out, the relative abundance per unit is kept constant. These results are given in Table 5.1 and diagrammatized in fig.s 5.1 (a+b) All figures exclude

FIG. 5.1a: PERCENTAGES OF FAUNAL CATEGORIES PER UNIT



	UNIT	BIRD	MICRO FAUNA	SNAKE/ LIZARD	FISH	TORTOISE	ADIAG NOSTIC	DIAG-NOSTIC	TOTAL
WEIGHTS	UNIT 1	0.9	6.3	3.9	0.3	512.6	116.9	35.8	676.7
	UNIT 2A	11.85	540.5	26.05	9.95	1801.9	815.8	312.8	3518.85
	UNIT 2B	3.75	44.25	2.6	0	867.85	336.9	108.7	1364.05
	UNIT 3	6.1	8.2	2	0.9	379.6	259.3	23.7	679.8
	UNIT 4/8	2.35	57.1	1.8	3.65	2328.1	663.9	222.75	3279.65
	UNIT 5/6	2.85	14.6	0.4	0.05	4577.5	350.8	64.25	5010.45
	UNIT 7	1.3	21.9	0.05	0.1	98.3	55	457.35	634
	UNIT 9	0.1	1.95	0.5	0.15	294.9	11.4	17.45	326.45
	TOTAL	29.2	694.8	37.3	15.1	10860.7	2610	1242.8	15489.9
	UNIT 2A+B	15.6	584.7	28.65	9.95	2669.75	1152.	421.5	4882.9

	UNIT	BIRD	MICRO FAUNA	SNAKE/ LIZARD	FISH	TORTOISE	ADIAG NOSTIC	DIAG-NOSTIC	TOTAL
PERCENTAGES	UNIT 1	0.13	0.93	0.58	0.04	75.75	17.28	5.29	100
	UNIT 2A	0.34	15.36	0.74	0.28	51.21	23.18	8.89	100
	UNIT 2B	0.27	3.24	0.19	0	63.62	24.7	7.97	99.99
	UNIT 2A/B	0.32	11.97	0.59	0.2	54.68	23.6	8.63	100
	UNIT 3	0.9	1.21	0.29	0.13	55.84	38.14	3.49	100
	UNIT 4/8	0.07	1.74	0.05	0.11	70.99	20.24	6.79	99.99
	UNIT 5/6	0.06	0.29	0.01	0.001	91.36	7	1.28	100.001
	UNIT 7	0.21	3.45	0.01	0.02	15.5	8.68	72.14	100.01
	UNIT 9	0.03	0.6	0.15	0.05	90.34	3.49	5.35	100.01
	TOTAL	0.19	4.49	0.24	0.097	70.12	16.84	8.02	100

		BIRD	MICRO FAUNA	SNAKE/ LIZARD	FISH	TORTOISE	ADIAG NOSTIC	DIAG-NOSTIC	TOTAL
WEIGHTS	POST 2000B	22.6	599.2	34.55	11.15	3561.95	1528.	481	6239.4
	PRE 2000	6.6	95.55	2.75	3.95	7298.8	1081.	761.8	9250.55

		BIRD	MICRO FAUNA	SNAKE/ LIZARD	FISH	TORTOISE	ADIAG NOSTIC	DIAG-NOSTIC	TOTAL
PERCENTAGES	POST 2000B	0.36	9.6	0.55	0.18	57.09	24.5	7.71	100
	PRE 2000	0.07	1.03	0.03	0.04	78.9	11.68	8.24	99.9

TABLE 5.1: BONE WEIGHTS PER FAUNAL CATEGORY

unprovenienced bone (a total of 171.3g). Table 5.2 shows the relative abundance of each faunal category in relation to other units : abundance was worked out by comparing the percentages of each species between units.

BIRD BONE:

Bird bone was analyzed (to the *Phylum* level) by the writer. The role of bird in the diet of the inhabitants of the cave appears to be negligible at Andriesgrond Cave. Unit 2A (0.34%) and Unit 2B (0.27%) have the most bird bone followed by unit 3 (0.9%); the rest of the units have even less bird bone. Thus the percentages of bird bone in post-1 700 BP units tends to be more abundant in post-1 700 000 BP units.

MICROFAUNA:

Table 5.3 gives the MNI of microfauna in the **old** units (analyzed by D.M. Avery, 1977) and it excludes *Bathyergus suillus* (dune mole rat) for reasons given below. Microfauna are most abundant in unit 2A (15.36%), followed by Unit 7 (3.45%) and Unit 2B (3.24%). The rest of the units have very little microfauna. There is also a noticeable increase in microfauna in post-1 700 BP units

In the historical records, referred to above, Wikar, Liechtenstein and Barrow mention that the Soaqua ate microfauna. By analyzing M.D. Avery's analysis and De Graaff's work on microfauna living habits (1980) the writer shows, however, that most of the fauna is post-depositional. While some microfauna had

TABLE 5.[illegible] : RELATIVE ABUNDANCE OF FAUNAL REMAINS PER FAUNAL CATEGORY
(* = LEAST ABUNDANT ; *** = MOST ABUNDANT)

UNITS	BIRD	MICROFAUN	SNAKE/ LIZARD	FISH	TORTOISE	NONDIAGNOSTI BONE	DIAGNOSTIC BONE
1	*	*	***	*	***	**	*
2A	***	***	***	***	**	**	*
2B	**	*	**	-	**	**	*
3	*	*	**	**	**	***	*
4	*	*	*	**	***	**	*
5	*	*	*	*	***	*	*
7	**	*	*	*	*	*	***
9	*	*	*	*	***	*	*
2A/B	***	***	***	***	**	**	*

TABLE 5.4: LIVING HABITS OF MICROFAUNA FOUND IN ANDRIESGROND'S DEPOSIT
(AFTER DE GRAAFF , 1980)

GENUS AND SPECIES	LIVES IN BURROWS	LIVES IN MOUNTAINS	COMMUNAL	SOLITARY	LIVES IN GRASSY AREAS	LIVES IN/ AMONG BOULDERS	LIVES IN DRY SANDY AREAS	MEAN WEIGHT FOR BOTH SEXES(grams)
C. HOTTENTOTUS	+	-	+	-	-	-	-	98 - 153
D. MELANOTIS	+	-	-	+	-	-	-	4 -12
D. MESOMALIS	-	-	-	-	-	+	-	9 - 14.5
STEATOMYS KREBSI	-	-	-	+	+	-	-	?
M. ALBICAUDATUS	+	-	-	-	-	-	+	75 - 111
TATRA AFRA	-	-	-	-	-	-	-	78 - 107
GERBILLIRUS PAEBA	-	-	-	-	-	-	-	?
O. SAUNDERSAE	-	+	-	-	-	-	-	84 - 134
O. IRRORATUS	+	-	-	+	+	-	-	96 - 178
O. UNISULCATUS	-	-	-	-	-	-	+	101 - 156
A. SUBSPINOSUS	?	?	?	?	?	?	?	17 - 25
A. NAMAQUENSIS	-	-	+	-	-	+	-	33 - 75
M. MINUTOIDES	+	-	-	-	-	-	-	6 - 12
P. VERRAUXII	?	?	?	?	?	?	?	36 - 54
R. PUMILIO	+	-	-	-	-	-	-	36 - 53

been burnt and could have been eaten, most was unburnt. *Chiroptera* (bats) could be due to either human, animal or natural agents.

De Graaff (1981) gives a detailed analysis of microfauna identification, distribution and habitat. Table 5.4 indicates that most of the microfauna either live in burrows and/or dry areas: out of an MNI of 435, only 104 (23.9%) do not live in burrows and are thus unlikely to be found in cave deposits. That is, they live elsewhere and are brought into the cave by predators. The range of weights of male and female microfauna indicate that the non-burrowers were very small and thus seem unlikely to have been part of the Soaqua's diet. A localized owl patch of pellets and microfauna was also found in Unit 2A and this also suggests that non-human agents are responsible for the deposition of microfauna in the deposit. The only means of finding the abundance of microfauna eaten would be by weighing burnt microfauna bones. Some microfauna has not yet been analysed by D.M. Avery (as they were found in the bulk samples); however, it is unlikely to change the relative abundance of the microfauna as most of these came from unit 2A.

SNAKE / LIZARD:

As mentioned earlier, historical records indicate that snakes and lizards were eaten by the Soaqua. These animals are most abundant in Units 2A (0.74%), 1 (0.58%), 3 (0.29%), and 2B (0.19%), but rare throughout the deposit. That these animals are most abundant in Unit 2A, as is microfauna, could indicate that they are post-depositional as well. This is unknown for certain.

FISH:

In total 15.1g of fish remains were found in the deposit. These are all freshwater fish and are most probably *Barbus capensis* and *Labio spp.* (C. Poggenpoel pers. com.). Unit 2A had the most fish remains (9.95g or 0.28%). Here 2 features dominate: LCPI (3.3g or 33.2%) and LBSA (1.2g or 12.1%). In LCPI there was a vertebral column that still articulated. The abundance and context of fish remains (and botanical remains) is important when considering LCPI's function (discussed in Chapter 6). Barrow and Liechtenstein (1801, 1812, respectively, in Mossop 1935) note that the Soaqua dried some of the fish. That some of the vertebrae in LCPI still articulated could be evidence of this desiccation. Drying fish implies a delayed return system, i.e. food is **not** eaten immediately after it has been caught, and the botanical analysis of LCPI also indicates that the plants had not yet been processed for eating. The possibility of fish being deposited by non-human agents must also not be ignored.

Unit 3 had the second highest percentage of fish remains (0.9g or 0.18%), while the rest of the units had even less fish ($\leq$ 0.11%). Thus, post-1 700 BP units are more abundant in fish remains.

Parkington and Poggenpoel (1971) suggest that fish were most easily caught when they spawned from November to March (i.e. early spring to mid-summer). However, they could also be easily caught when these rivers dry up in mid- to late summer. Deacon (1974) notes that fish is important in a diet that is rich in carbohydrates as they have a high protein yield. That botanical and fish remains are most abundant in post-1 700 BP units is thus more than a coincidence.

ADIAGNOSTIC BONE:

This category consists of bone that was too fragmented to be analyzed. Adiagnostic bone is most abundant in Unit 3 (38.1%), followed by units 2b (24.7%), 2A (23.2%) and 4 (20.2%).

Adiagnostic bone could occur for 3 reasons. The bone is broken due to: preservation and other post-depositional factors; because of human activity; or both. The former seems to be an insufficient cause as most adiagnostic bone occurs in the upper units, while diagnostic bone remains relatively constant between pre- and post-1 700 BP units. Human activity seems to be a likely alternative. That is, bone was fragmented in the process of obtaining maximum food returns in the form of marrow and fat. This, in conjunction with other faunal analysis, would suggest not only a widening of the subsistence base, but also attempts to obtain maximum utility from the bone (most of the worked bone is found in post-1 700 BP strata).

TORTOISE BONE:

Klein and Cruz-Uribe (1983, 1987, 1989) have measured the medio-lateral breadths of the distal humeri of *Chersina angulata* to find if there is decrease in tortoise mean size over time. [All measurements and discussions from sites other than Andriesgrond can be referred to Klein and Cruz-Uribe's three papers.] A decrease in tortoise mean size would reflect either environmental change (e.g. tortoise do not grow much in cool-moist environments), or human predation pressure. These two variable are interconnected: "environmental conditions could have effected human predation pressure" (1987:146). Klein and Cruz-Uribe opt for human predation pressure as they could not find a correlation between a change in tortoise mean size and palaeoenvironmental change. This may be problematic for Andriesgrond as some of the tortoise is clearly Terminal Pleistocene, i.e. a different palaeoenvironment, and this could effect tortoise mean sizes in most of the pre-1 700 BP units. There is also a theoretical problem with their work and this is discussed later.

ANDRIESGROND TORTOISE:

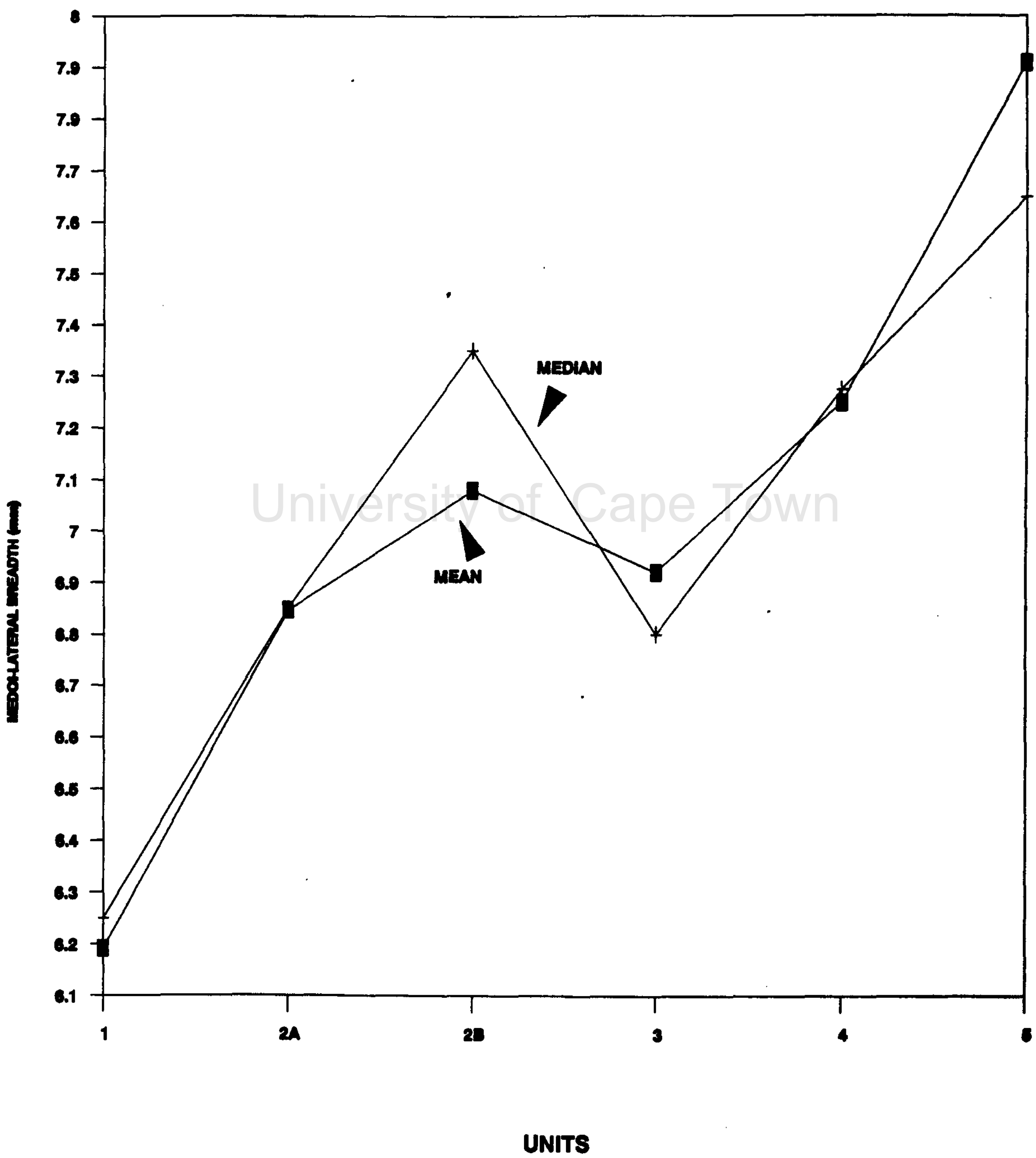
Tortoise bone was weighed and separated into diagnostic and adiagnostic bone (of the carapace fragments only the nuchal plate were considered to be diagnostic), by the writer and Amanda Neal. MNI's and NISP's were worked out and the medio-lateral breadths of distal humeri and femora were measured (femora were ignored in graphs and tables as they followed similar trends of the humeri). Results are given in Table 5.5 and shown in fig. 5.2. These measurements are important as they are the first for a S.W. Cape Fold Belt site, and thus it fills the gap between the four ecozones: coast (EBC), sandveld (TC), Cape Fold Belt (Andriesgrond), and Karoo (KFR1).

Tortoise are the most abundant faunal category in weight, MNI, and NISP in all units except Unit 7 where diagnostic bone is most abundant. Unit 7 is dominated by botanical features and, as in other botanical features, these have very little tortoise bone.

TABLE 5.5 :TORTOISE MEDIO-LATERAL BREADTHS FROM VARIOUS CAVE SITES

ANDRIESGROND CAVE DATE (APPROX.)	UNIT	MIN	MAX	MEAN	MEDIAN	STD DEV	n	MNI	NISP
POST-180 BP	1	3.8	8.75	6.192	6.25	1.67	6	8	85
430-180 BP	2A	4.5	9.2	6.847	6.85	2.235	16	24	343
1640-430 BP	2B	4.2	9.15	7.08	7.35	1.866	5	11	112
1640 +/- 50 BP	3	4.4	9.3	6.92	6.8	1.77	5	16	146
14 870 +/- 150	4	5.7	8.95	7.25	7.275	1.061	16	23	307
10 200 - 11 590 BP	5	4.8	15.55	7.91	7.65	1.875	37	34	493
3 - 4 000 BP	7			-			1	2	13
UNIT 9 ?	9			-			1	3	21
POST-2 000	1 - 3	3.8	9.3	6.772	6.775	1.56	32		601
PRE-2 000	4 - 9	4.4	15.55	7.686	7.5	1.529	54		834
DIE KELDERS*									
LSA (ALL LEVELS)		?	?	7.35	7.4	1.04	559		
MSA 4 -5		?	?	8.04	7.95	1.2	206		
MSA 6a - b		?	?	8.28	8.2	1.21	479		
MSA 6c		?	?	8.36	8.4	1.18	461		
MSA 7 - 13		?	?	8.18	8.15	1.24	62		
MSA 14 - 15		?	?	8.31	8.2	1.05	101		
BYNESKRANSKOP 1*									
	1	?	?	7.29	7.3	1.09	381		
	2	?	?	7.08	7.05	1.05	90		
	3	?	?	7.2	7.1	1.11	108		
	4	?	?	7.16	7.2	1.17	113		
	5	?	?	7.51	7.6	1.16	347		
	6	?	?	7.59	7.5	1.15	244		
	7	?	?	7.34	7.5	1.29	73		
	8	?	?	7.31	7.3	1.02	89		
	9	?	?	7.57	7.9	1.19	262		
	10	?	?	7.9	7.7	1.34	130		
	11	?	?	7.87	8	1.22	61		
	12	?	?	7.94	8	1.29	155		
	13	?	?	7.95	8	1.34	159		
	14	?	?	8.06	8	1.29	265		
	15	?	?	8.07	8	1.25	76		
	16	?	?	8.26	8.05	1.31	94		
	17	?	?	8.07	8.2	1.36	53		
	18 - 19	?	?	7.87	8	1.37	111		
KLIPFONTEINRAND 1*									
POST 5 500 BP	SPITS 2 & 3	?	?	7.28	7.4	1.31	67		
TORTOISE CAVE*									
2000 BP	1 - 3	3.5	8.6	6.6	?	1.09	100		
4 - 2000 BP	4 - 9	4.8	9.2	7.2	?	1.02	60		
4400 - 4000 BP	10 - 13	4.7	9.2	7.1	?	0.96	53		
7700 BP	14	5.4	7.5	6.7	?	0.78	8		
ELANDS BAY CAVE*									
7910 BP	11	3.5	10	7.2	?	1.12	253		
9600 BP	12	3.7	10.4	7.1	?	0.97	1140		
10130 BP	10	3.1	9.6	7.1	?	1	245		
10700 BP	13/14	3.1	10.5	7.4	?	1.06	1800		
11 - 12450 BP	15 - 17	3.1	10.6	7.4	?	1.11	853		
?14000 BP	18 - 20	3.9	10.8	7.5	?	1.02	306		

FIG. 5.2: MEAN AND MEDIAN MEDIO-LATERAL BREADTHS OF TORTOISE HUMERI PER UNIT

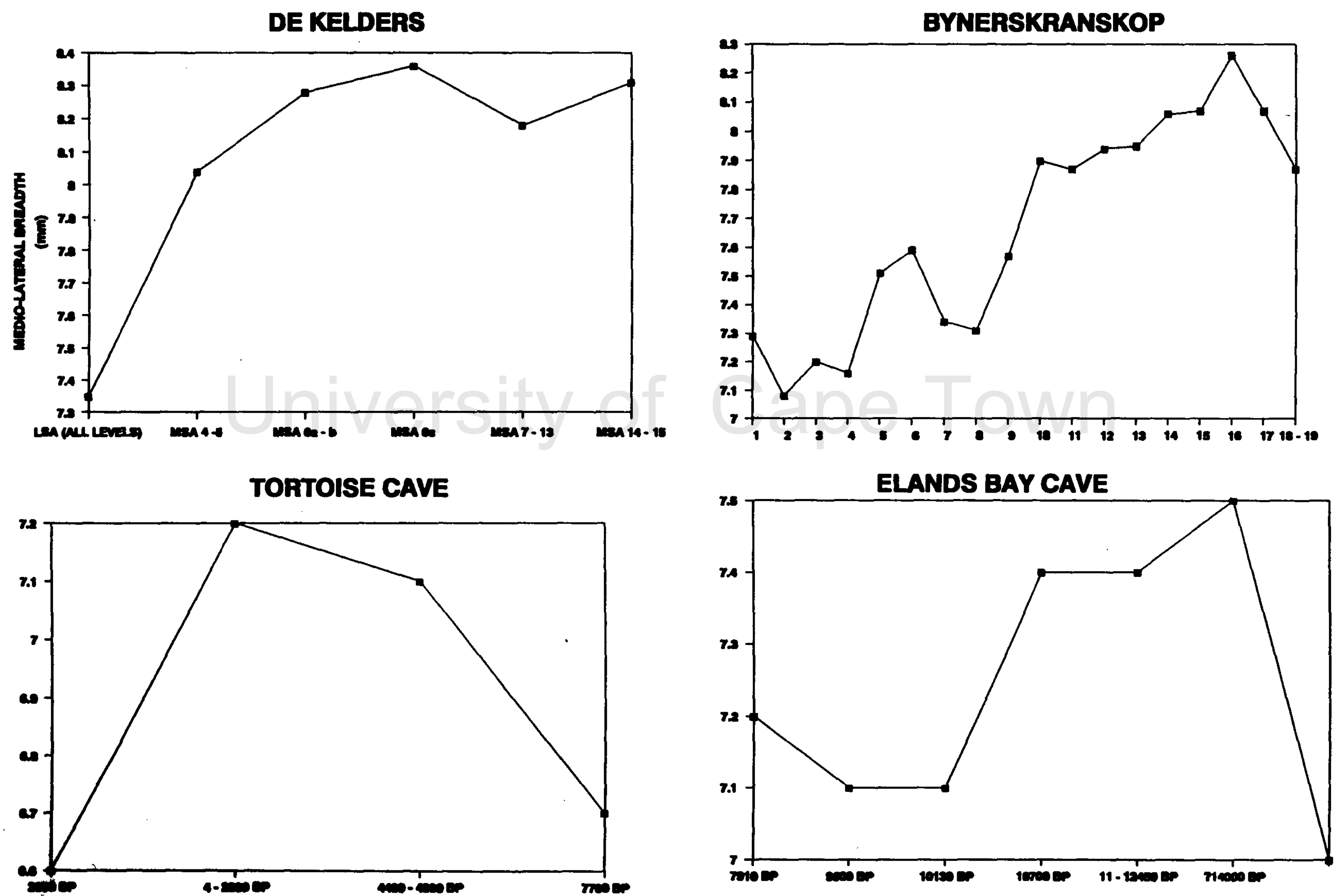


Tortoise have the highest MNI and NISP in Units 5, 2A and 4 (in descending order). It is also important to note that the minimum medio-lateral breadth recorded in each pre-1 700 BP unit is always larger than those in post-1 700 BP units.

While dealing with much smaller samples than Klein and Cruz-Uribe, a trend is nonetheless visible (Units 7 and 9 were omitted when comparing individual units as these had only one measurement each). There is a decrease in tortoise mean size over time, especially when comparing pre- and post-1 700 BP units. A Kolmogrov-Smirnov test between pre- and post-1 700 BP units showed that there was a significant difference at the 0.05 level. A Yate's corrected X^2 test showed that there is a moderately strong correlation between pre- and post-1 700 BP units (X^2 = 22.59, df = 8, p $\leq$ 0.005, Ø = 0.438). Thus these statistical results indicate that there is a significant decrease in tortoise mean size after 1 700 BP compared to pre-pottery periods. There was no significant difference between individual post-1 700 BP units, and pre-1 700 BP units the apparrent presence of large Terminal Pleistocene tortoise would have skewed any inter-unit comparisons.

In comparison with other sites where tortoise mean sizes have been measured, Andriesgrond's results confirm the trends noted. Table 5.5 (diagrammatized in fig. 5.3) shows the tortoise mean size change through time for EBC (Elands Bay Cave), TC (Tortoise Cave), BNK (Byneskranskop), and DK (De Kelders). At BNK it was found that between 13 - 6 000 BP the tortoise mean sizes were larger than post-6 000 BP tortoises, and this change correlates with a change in the faunal composition and the inferred

FIG. 5. MEAN DISTAL HUMERI BREADTHS OF FOUR HUNTER-GATHERER SITES *



*: AFTER KLEIN AND CRUZ-URIBE (1983,1986,1989)

palaeoenvironment. DK and KFR (Klipfonteinrand) follow similar patterns. At TC and Kasteelberg the tortoise mean size is reduced by 8% after the arrival of Khoi pastoralists, and a similar pattern occurs at EBC (except the percent change is smaller). Klein and Cruz-Uribe do however admit (1986) that the arrival of domestic stock may have caused veld degradation that , in turn, would have contributed to a decrease in tortoise mean size. At Andriesgrond this may not necessary have been a factor as Manhire (1984) notes that the mountain areas were unsuitable for domestic stock.

Thus, a decrease in tortoise mean size coincides with the arrival of pastoralists. However, there is a problem with this hypothesis. Klein and Cruz-Uribe (1986:146) state: "the tortoise tend to be larger in those levels where they are most abundant relative to mammals", i.e. these units are the Early Holocene and Terminal Pleistocene deposits. In all pre-1 700 BP units, especially in Units 4 and 5 there are more tortoise (in MNI and NISP) than in post-1 700 BP units. Why would people be eating so many tortoise when there was clearly an abundance in larger animals? If they were eating so many tortoise then one would expect a decrease in the tortoise mean size: this does not occur. That is, levels with high abundance of tortoise and a large MNI and NISP should have smaller mean sizes and not large mean sizes. At Andriesgrond the units with high abundance and large MNI's and NISP's have the largest and lowest mean sizes (Units 2A, 2B, 4 and 5). It would be interesting to see how Klein and Cruz-Uribe account for this.

DIAGNOSTIC BONE:

The representation of animal body parts is due to "selective transportation of parts to or from the site and/or selective destruction of some parts before and after burial" (Klein and Cruz-Uribe 1989:87-8). Thus, larger animals may be under-represented in MNI/NISP, and smaller animals are elevated, as larger animals would more likely to have been selectively butchered at the kill site. This, in turn, will effect the weights of the faunal category. Selective transportation can be seen by using Food Utility Indices, but this was not possible for Andriesgrond for reasons mentioned in the beginning of the chapter (table 5.6 gives the MNI/NISP of the fauna from Andriesgrond fauna in the original units). (Table 5.7) A comparison of the fauna from other S.W. Cape sites is used, with reference to the fauna from Andriesgrond, to analyze the changes in human faunal exploitation in the S.W. Cape.

Very little diagnostic bone was found. All units, except Unit 7, have less than 9% of diagnostic bone per unit. Unit 7 has the highest percentage of diagnostic bone: 72.14%. This high percentage can be explained by the fact that this unit formed part of the original Unit 2 that had large animals, and thus one of these larger animals may have skewed the percentages especially where Unit 7 had the least amount of bone weights. As noted earlier there is a negative correlation between diagnostic and adiagnostic bone. All units tend to have similar percentages of diagnostic bone.

5.6

TABLE 5.6: MNI & NISP OF ANDRIESGROND FAUNAL REMAINS

MACROMAMMALIAN ANALYSIS*

COMMON NAME	GENUS & SPECIES	UNIT 1 NISP	MNI	UNIT 2 NISP	MNI	[illegible]	[illegible]	[illegible]	[illegible]
HARE	LEPORIDAE GEN. ET SP. INDET.	7	1	25	2	4	2	1	1
SPRINGHARE	PEDESTES CAPENSIS	1	1	0	0	0	0	0	0
DUNE MOLE RAT	BATHYERGUS SUILLUS	6	1	23	4	0	0	3	[illegible]
PORCUPINE	HYSTRIX AFRICAEAUSTRALIS	0	0	1	1	0	0	0	0
PEOPLE	HOMO SAPIENS	2	1	4	[illegible]	1	1	1	1
BABOON	PAPIO URSINUS	0	0	1	1	0	0	0	0
JACKAL (OR DOG?)	CANIS cf MESOMELAS	2	1	7	1	1	1	1	1
STRIPED POLECAT	ICTONYX STRIATUS	5	2	1	1	2	1	0	0
EGYPTIAN MONGOOSE	HERPESTES ICHNEUMON	1	1	9	4	0	0	0	0
GREY MONGOOSE	GALERELLA PULVERULENTA	7	2	17	2	0	0	3	1
HYENA	HYAENIDAE GEN ET SP. INDET.	1	1	0	0	0	0	0	0
CARACAL	FELIS CARACAL	1	1	0	0	0	0	0	0
ORYCTEROPUS AFER	AARDVARK	0	0	1	1	0	0	0	0
ROCK HYRAX	PROCAVIA CAPENSIS	54	3	99	5	13	2	4	1
QUAGGA (OR HORSE ?)	EQUUS cf QUAGGA	1	1	0	0	0	0	0	0
HIPPOPOTAMUS	HIPPOPOTAMUS AMPHIBIUS	0	0	1	1	0	0	0	0
GREY DUIKER	SYLVICAPRA GRIMMIA	4	2	15	2	0	0	3	1
KLIPSPRINGER	OREOTRAGUS OREOTRAGUS	2	1	0	0	1	1	0	0
RAPHICERUS CAMPESTRIS	STEENBOK	0	0	1	1	1	1	0	0
RAPHICERUS SP.	STEENBOK AND/OR GRYSBOK	26	2	73	4	24	2	10	1
SHEEP	OVIS ARIES								
BOVIDS - GENERAL	BOVIDAE	21	1	0	0	0	0	0	0
SMALL		28	2	74	4	29	2	16	1
SMALL-MEDIUM		25	2	15	2	0	0	3	1
LARGE-MEDIUM		0	0	1	1	0	0	0	0
LARGE		2	1	0	0	0	0	0	0

** AFTER R.G. KLEIN 1990

TABLE 5.7: FAUNAL ANALYSIS OF S.W. CAPE SITES.

COMMON NAME	RENBAAN POST-2000	RENBAAN PRE-2000	TORTOISE CAVE* POST-2000	TORTOISE CAVE* PRE-2000	ELANDS BAY CAVE *** POST-2000	ELANDS BAY CAVE *** PRE-2000	DE HANGEN+ POST-2000	DE HANGEN+ PRE-2000
TORTOISE SPP.**	11	1	54	69	77	2130	313	-
HARE	3	-	250	40	15	124	6	-
DUNE MOLE RAT	5	-	441	897	17	2053	-	-
HEDGEHOG	-	-	-	2	1	104	-	-
PORCUPINE	1	-	3	1	3	28	1	-
PEOPLE	-	-	1	31	-	-	1	-
BABOON	-	1	-	-	9	23	1	-
JACKAL/DOG	-	-	1	-	22	68	1	-
FOX	-	-	-	-	1	7	-	-
STRIPED POLECAT	-	-	3	2	-	28	-	-
EGYPTIAN MONGOOSE	-	-	-	-	-	-	-	-
CAPE GREY MONGOOSE	9	-	24	15	8	37	8	-
GENET	-	-	-	-	1	-	2	-
CARACAL	-	-	-	1	1	28	-	-
WILD CAT	-	-	1	1	3	8	-	-
LEOPARD	1	-	-	-	-	26	-	-
AARDVARK	2	1	-	1	1	17	-	-
RATEL	1	-	-	-	-	-	-	-
HONEY BADGER	-	-	-	1	1	3	1	-
ROCK HYRAX/DASSIE	77	7	215	101	60	251	64	-
QUAGGA	-	-	-	-	-	4	-	-
CAPE HORSE	-	-	-	-	-	34	-	-
AN EQUID	-	-	-	-	-	-	1	-
HIPPOPOTAMUS	-	-	-	-	1	26	-	-
RHINOCERAS SPP.	-	-	9	-	1	11	-	-
ELEPHANT	-	-	-	-	-	5	-	-
BOAR	-	-	1	-	-	3	-	-
SEAL	-	-	165	107	786	3528	-	-
ELAND	-	-	7	-	-	51	1	-
CAPE BUFFALO	-	-	-	-	1	20	-	-
BLUE ANTELOPE	-	-	-	-	-	3	-	-
HARTEBEEST	-	-	-	-	5	17	-	-
DOMESTIC CATTLE	-	-	-	-	-	-	1	-
GREY DUIKER	-	-	1	-	15	46	1	-
SPRINGBOK	-	-	-	-	-	-	1	-
KLIPSPRINGER	-	-	-	-	-	-	3	-
GRYSBOK/STEENBOK	8	-	155	151	97	583	6	-
SHEEP	-	-	-	-	9	-	1	-
(LARGE) BOVINE OR ELAND	1	-	13	18	6	299	-	-
LARGE-MEDIUM BOVID	-	1	3	3	39	101	-	-
SMALL MEDUIUM BOVID	6	1	88	9	90	138	-	-
SMALL BOVID	64	5	577	930	448	2711	-	-

*:FOR TC LAYERS 4, 11B & 12 HAVE BEEN OMITTED
**: GIVEN IN MNI, NOT NISP
***:EXCLUDES PLEISTOCENE LAYERS
+: THESE ARE MNI

Comparison with other S.W. Cape sites (Table 5.7) reveals that in post-1 700 BP units smaller animals are present and more abundant than larger animals. This excludes mammals that are typical of Pleistocene deposits, such as honey badger, hedgehog, large grazing bovids. While table 5.7 indicates that pre-1 700 BP units have more smaller animals than post-1 700 BP units, it must be remembered that these pre-1 700 BP units have larger volumes, e.g. EBC has only ±500 years of Late Holocene deposit. Conversely, Renbaan and De Hangen tend to be post-1 700 BP. To understand the rate of deposition ratios or percentages must be given in the literature. What is clear is that there is a change in the subsistence patterns.

Manhire *et al.* (1984) noticed a change in a hunting emphasis to small/medium sized game, dassies, tortoise and plant foods, and that it coincided with the arrival of pastoralists in the S.W. Cape. Coastal sites, after ±1 700 BP, increase in frequency and limpets dominate the deposit, whereas mussels dominated pre-pottery deposits (Buchanan *et al.* 1984). These shore-line middens contain 50 - 100 times more food debris than nearby cave sites (Buchanan *et al.* 1984). Robey noted similar patterns at Tortoise Cave (1984). Thus, in the pottery units/strata mentioned in this analysis there is an increase in the exploitation of low trophic level high biomass fauna. This coincides with an increase in the emphasis on plant foods (see chapter 6) and changes in the emphasis in lithic manufacturing that would require an increase in the variety of equipment for procuring these foods (Parkington 1980:83).

CONCLUSIONS:

In post-1 700 BP units in the mountains, sandveld and along the coast there is a widening of the subsistence base. This is seen in the higher percentages of micromammals and/or limpets, a decrease in tortoise mean size, an increase in botanical remains, and a change in stone tool emphasis. These changes in the subsistence base coincides with a change in settlement patterns: there is an increase in the frequency of sites along the shore-line (Buchanan *et al.* 1984) and in the sandveld and mountain kopjes (Manhire 1984). Due to an increase in the number of cattle and sheep in the W. Cape (at ±1 700 BP) kept by herders, the Soaqua's hunting resources came under pressure (Smith 1986). The arrival of pastoralists would have caused an increase in population, and the unprotected wild game would have been replaced by protected domestic stock (Manhire *et al* 1984). It would have been easier for the Soaqua to steal a few cattle or sheep than to spend hours hunting for scarce game, which would ultimately have lead to a situation of increases conflict with the herders (Smith 1986). However, it would not be conducive for either Khoi or Soaqua to have engaged in continuous conflict; hence, an intensification in the subsistence base of the Soaqua. "Intensification implies an increasing extractive ability which indicates increased productivity or increased production, or both" (Bender 1978, in S. Hall 1990:8): the two are not synonymous as the former is related to social and demographic change. Intensification also implies a widening of the subsistence base in that there is a move towards smaller foraging ranges "and consequently [hunter-gatherers] became economically tied to fewer points on the landscape for longer periods of time"

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(S. Hall 1991:9). A decrease in mobility "undercuts the economic risk-reducing rationale behind both individual and group movement which are also mechanisms for conflict dissolution" (Lee 1979, in S. Hall 1991:9). It would be interesting to look at the Khoi's subsistence base to see if there is also a change through time. It would seem likely that there would be a change as conflict and social change is a dynamic and bilateral process.

It was found that tortoise mean sizes decrease significantly in post-1 700 BP units and that Klein and Cruz-Uribe explain this in terms of an increase in human exploitation of tortoises, and that there was an increase in micromammals. However, Parkington *et al.* (1986) note that many tortoises do not have the same social values as one large hartebeest. That is, there is an increase in foods that are shared within the residential group / nuclear family; and thus the larger foods that are necessary for maintaining intergroup and social relations diminishes (Parkington *et al* 1986). These new social problems have to be accommodated and can be seen in the increase of compensatory ritual behaviour (Parkington *et al.* 1986; S. Hall 1991) and symbolic behaviour that resulted in new social relations. This is discussed in depth in the following chapters.

CHAPTER 6:

BOTANICAL ANALYSIS :

INTRODUCTION:

The aim of this chapter is to distinguish between the functions of the botanical-rich features, the relative abundance of principle edible plants, seeds and fruits, and 'additional plants' (i.e. have alternative utility *vis à vis* food source) and to analyze the seasonal availability of these plants. In total 16 features were examined in this analysis. The most important botanical feature from this analysis was LCPI that seemed to be a storage pit for plant foods used in a delayed return system.

Preservation of plant remains in the deposit tended to be good. Plant remains were found in all units except Unit 5. However, the degree of preservation tends to be related to it locality in the cave: areas in and beyond the dripline had less well preserved plant remains (Hall 1991).

The main question in analyzing the plant remains is : Why did the people utilize specific species, and for what purpose ? Parkington (1977:154) stated that geophyte abundance is determined by four main factors: "density of corm bearing plants, the size of individual corms, their palatability and visibility of plants..." In the absence, in the S.W. Cape, of highly concentrated foods, such as nuts and kernels, hunter-gatherers made use of abundant corms: these provided the best alternatives in the landscape (Parkington 1991). Corms, tubers and some fruit and seeds contain carbohydrates that are essential in the diet as

Figure62: Andriesgrond environs, modern

KEY:

- Montinia/Cotyledon
- Diosma
- Nylantia
- Wildenowia
- Passerina
- Swards
- Rock outcrops
- Water cources

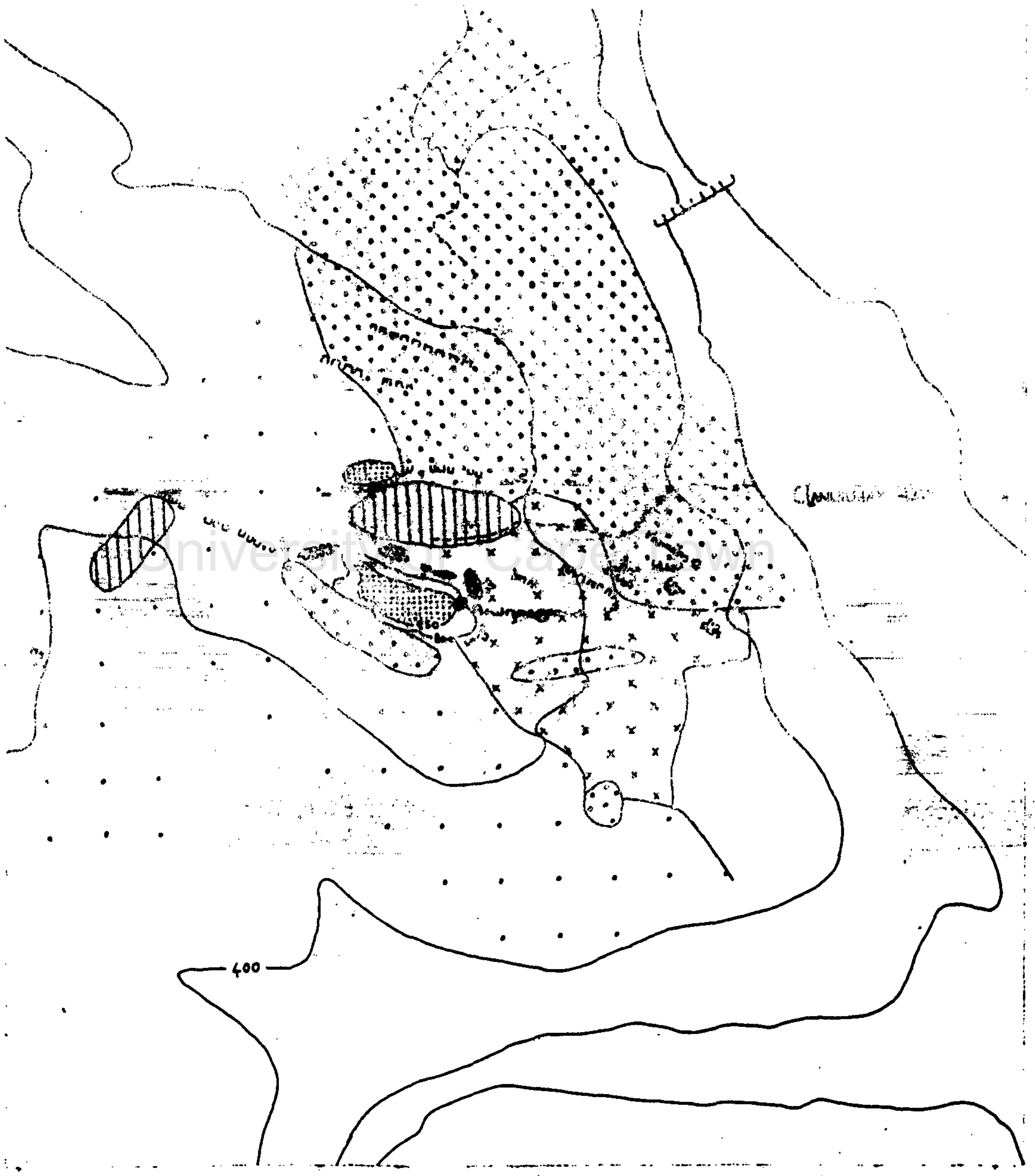


FIGURE 6:1 VEGETATION OF FYNBOS BIOME 1:1000 000 MAP

1= Renbean Cave 2= Andriesgrond Cave 3= De Hangen

4= Diepkloof 5= Elands Bay Cave 6=Klipfonteinrand

well as providing essential vitamins (Hall 1991). Several of these species can be (have been) stored and evidence for this comes from ethnobotanical sources and this will be discused later on.

Archer (1982 in Hall 1991) divided plant used as foods into two main categories: Staple foods, that are used on a regular basis as a major source of nutrition because of their abundance and nutritional value, and; opportunistic foods, that are exploited when available. She divides the latter into four sub-groups: additional foods, i.e. plants that are available for only a short period of time; thirst-quenching foods, i.e. plants that have a lot of liquids, e.g. succulents; herbs, for flavoring foods; and sweets, plants that contain a lot of nectar or sweet fruits and are collected purely for their taste. However, these categories were found to be both limiting and cumbersome in analysis. Thus for a quantitative and qualitative analysis her basic categories were kept but altered. These are: Grasses, Principle Edible Plants (P.E.P.), Seeds and Fruits, Additional Plants, and Residue. These categories are defined and discussed below.

The main problem faced when analyzing plant remains is that one is dealing with the remains of plants themselves and not the actual part of the plant that was utilized. That is those plants that are of a more fibrous constitution tends to be preserved better and thus may skew the weights out of proportion to actual incidence of use. An example of this is the large corm casing of *Hexaglottis virgata*, while those of *Babiana spp.* and *Moraea fugax* are much smaller and more fragile. Hence an abundance of *Hexaglottis virgata* tend to occur in analyzed features (see fig.

6.5). Likewise, seeds tend to be under-represented when weighed against *Hexaglottis virgata* and *Brabeium stellatifolium*. This must always be kept in mind when any conclusions are drawn from these weights presented below.

BOTANICAL ANALYSIS OF ANDRIESGROND:

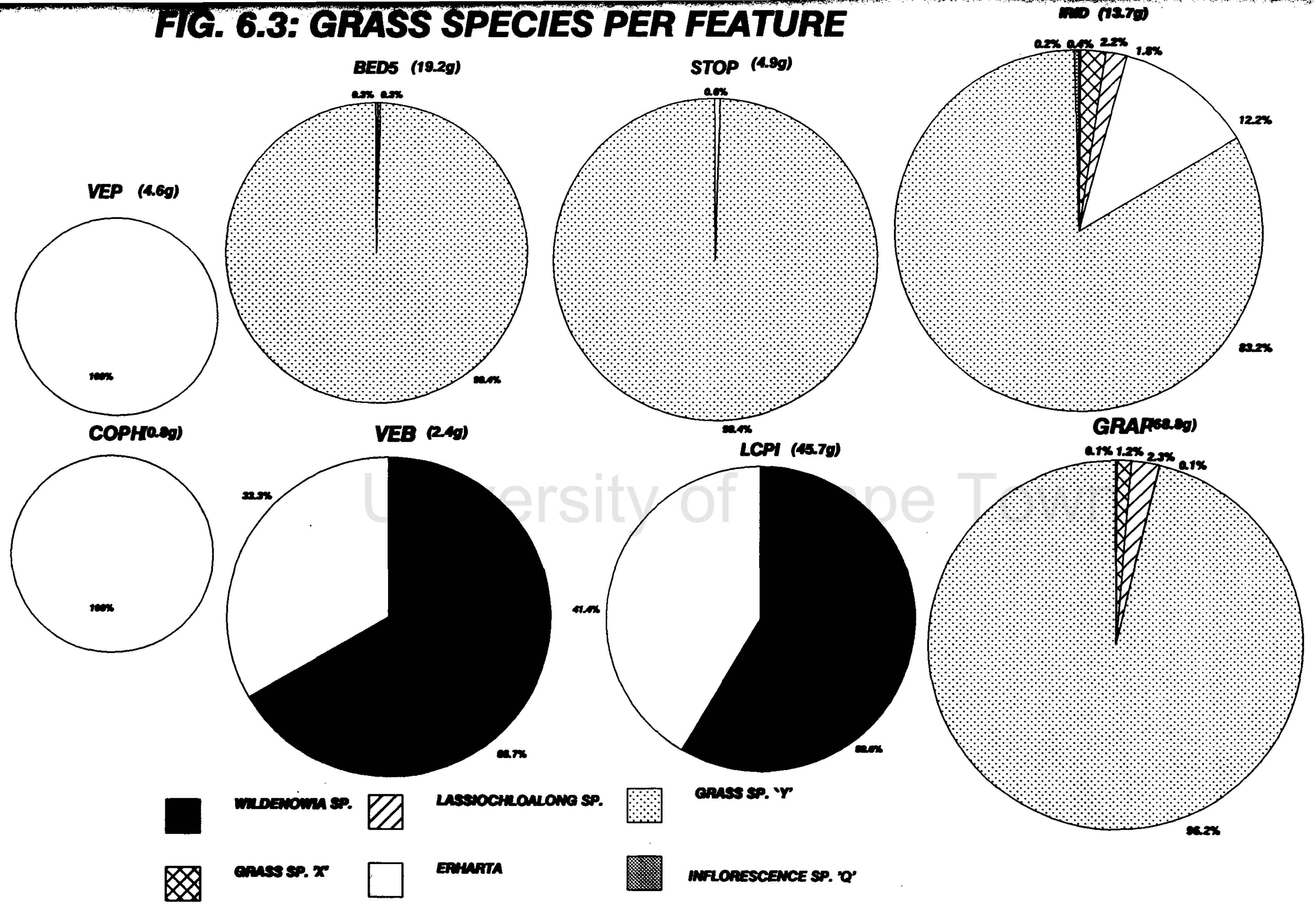
The following features were analyzed: BED5, STOP, GRAP, IGRP, LCPI, COPH IR16, IR19, IR20, IR21, 2VEB, 3VEB, 6VEB, VEP1, VEP2, and VEP3. Some of these features were then joined. they are: IGRP, IR16 and IR19 (called IRID); IR20, IR21, 2VEB, 3VEB and 6VEB (called VEB); VEP1, VEP2, and VEP3 (called VEP). All features, except VEP, are found in Units 2A and/or Unit 2B. VEP is believed to be between 3 - 4 000 years old.

GRASSES:

These are grasses of different species with no known nutritional value. Grasses are summer flowering plants, and thus if their inflorescences are found it can be inferred that the features accumulated in the summer, e.g. see Parkington and Poggenpoel (1971). However, the presence of inflorescences does not necessary indicate a summer occupation only, rather that people were utilizing the grass in the summer. Thus, basing seasonal occupation at Andriesgrond Cave on grass inflorescences would be presumptuous and other species must also be analysed. The fact that GRAP has only 0.08g of inflorescences and that VEP had no inflorescences highlights this problem. Another problem with inflorescences is their size. Because they are so small not only are they outweighed by other grass parts, e.g. inflorescence

SPECIES	BEDS	GRAP	STOP	IRID	VEB	VEP	LCPI	COFK	TOTAL
	FEATURES								
GRASSES:									
WILDENOVIA SP.	0	0.1	0	0.03	1.6	0	28	0	29.73
GRASS 'X'	0.05	0.85	0	0.3	0	0	0	0	1.2
LASSIOCHLOALONG	0	1.6	0	0.25	0	0	0	0	1.85
EHHARTA SP.	0.05	0.05	0.03	1.65	0.8	4.6	19.8	0.8	26.98
GRASS 'Y'	19.0	66.2	4.85	11.3	0	0		0	101.42
INFLOURESCENCE SP. 'Q'	0	0.03	0	0.05	0	0		0	0.08
TOTAL	19.1	68.8	4.88	13.5	2.4	4.6	47.8	0.8	161.28
PRINCIPLE EDIBLE PLANTS:									
BABIANA SP.	0.15	1.28	1.8	5.53	1.2	0.25	5.4	0	15.61
HEXAGLOTTIS SP.	1.13	80.5	8.6	53.2	12.9	39.2	99.3	9.6	304.78
MORAEA SP.	0.15	1.67	1.8	5.45	0	0	2.7	8.1	19.87
UNIDENTIFIED CORM SPP.	0.4	2.15	4.2	11.5	13.9	1.2	26.2	0	59.6
WATSONIA SP.	0	0	0	0	0.5	0.3	0	0	0.8
OXALIS SP.	0	0.03	0	0.2	0	0	0	0	0.23
HESPERANTHA SP.	0	0	0	0.3	0.1	0.15	9.1	0	9.65
DIOSCOREA ELEPHANTIPES	0	0	0	6.1	0	0	0.3	0	6.4
TOTAL	1.83	85.6	16.4	82.3	28.6	41.1	142	17.9	415.03
SEEDS AND FRUITS:									
BRABEIUM STELLATIFOLIUM	0.5	4.8	0	4.5	15.7	1.2	44.9	0	71.6
RICINIS COMMUNIS	1.4	0.35	0.05	115	5.3	0.3	0	0	122.4
RHUS BURCHELLII VAR UNDULATA	0	0	0.15	0	0.1	0.25	42.6	0	43.1
DIOSPYROS SP.	0	0	0	0	0.2	0.6	28.4	0	29.2
OLEA CAPENSIS	0	0	0	0.4	0.3	0.9	5.5	0	7.1
RESTIONACAEA SP.	0	0	0	0	0.05	0.95	1.3	0	2.3
ERIOCEPHALLUS AFRICANUS	0	0	0	0	0	0	1.55	0	1.55
HEERIA SP.	0	0	0	0	0	0.6	1.45	0	2.05
PROTACAEA SP. (2)	0	0	0	0	0	0	0.15	0	0.15
UNIDENTIFIED FRUITS / BULBS	0	0	0	2.8	0.05	1.2	7.05	0	11.1
UNIDENTIFIED SEED SP. (11)	0.05	0.05	0.25	0.1	0	0.15	0.2	0	0.8
MESEMBRANTHIUM SP. CAPSULE	0	0	0	0	0.05	0.05	0	0	0.1
TOTAL	1.95	5.2	0.45	122.	21.7	6.2	133.	0	291.45
ADDITIONAL PLANTS:									
SCLEROPHYLLUS	0	0	0	0	0	0	0.2	0	0.2
ASTERACAEAE	0	0	0	11.9	0.05	0	1.3	0	13.25
LILLACAEA	0	0	0	0	0	0	0.2	0	0.2
DIOSMA HURSUTU	0	0	1.35	0	0	0	0.1	0	1.45
EUCLEA SP.	0	0	6.65	0	0	0	0	0	6.65
PHYLICA SP.	0	0	0.03	0	0	0	0	0	0.03
COTYLEDON PANICULATUM	0	0	0.3	0	0	0	0	0	0.3
LEAF 'E'	0	0	0.3	0	0	0	0	0	0.3
PELARGONIUM SP.	0	0	6.03	0.4	0	0	0	0	6.43
TOTAL	0	0	14.6	12.3	0.05	0	1.8	0	28.81
RESIDUE:									
STEM FIBRES	0.4	118.	28.4	79.2	0	0	0	0	226.1
TWIGS AND ROOTS	15	21	20.3	58.8	0	0	0	0	115.15
SARCOCAULON SP.	0	0	0	6	0	0	0.7	0	6.7
ADIAGNOSTIC MATERIAL	0	0	0	0	1.6	0	0	0	1.6
BARK	0	0.3	0	1.9	0	0.1	0	0	2.3
UNSORTED RESIDUE	28.6	109.	250.	200.	61.6	58.5	313.	19[illegible]	[illegible]

FIG. 6.3: GRASS SPECIES PER FEATURE



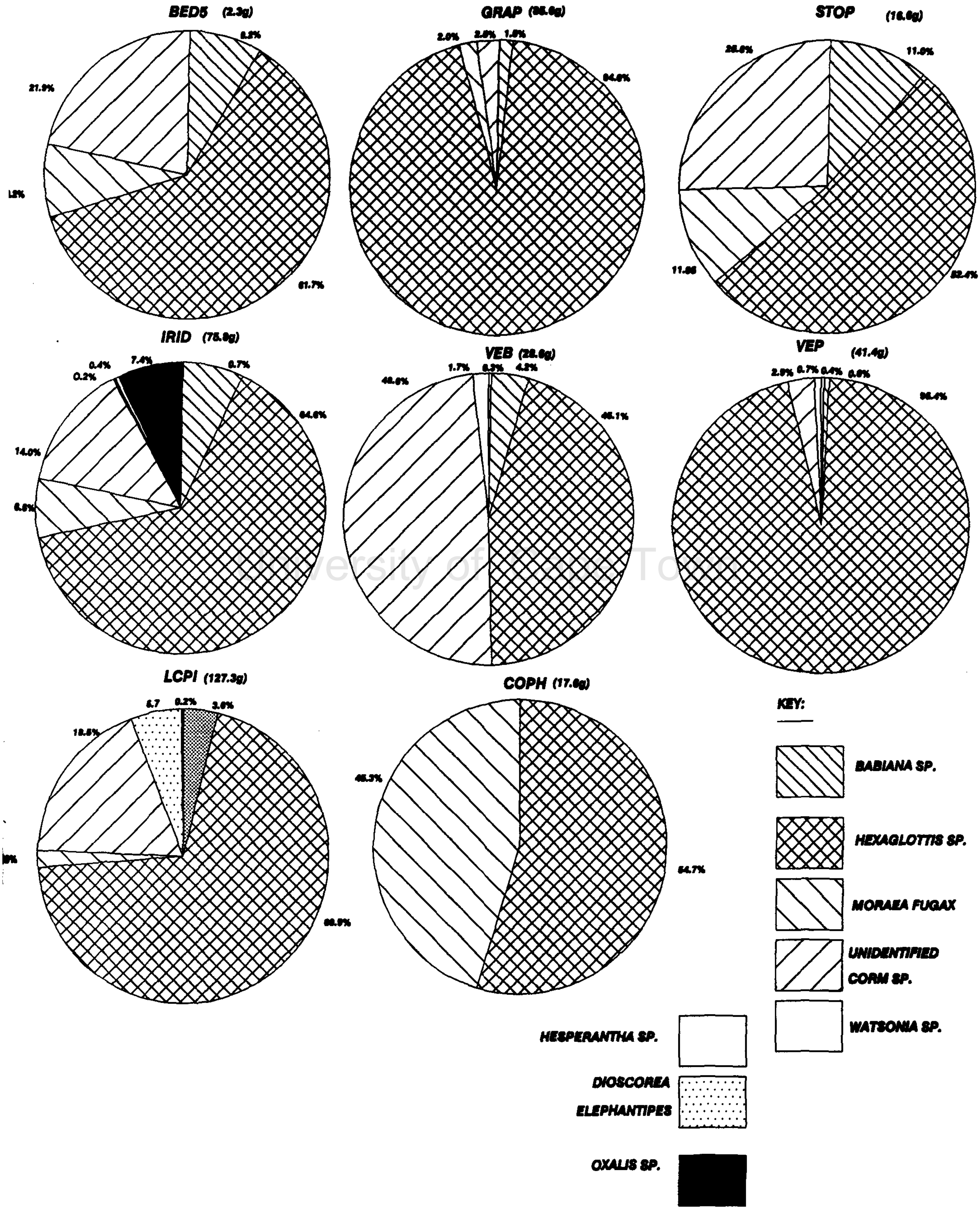
species 'Q', they also need much smaller sieves if all are to be retained for identification.

Table 6.1 gives the weights of grass species (and other botanical categories) per feature (and seen in fig.s 6.3 and 6.8). It can be seen that *Lassiochloalong* and inflorescence species 'Q' did not form part of the main grasses used. *Erharta calycina* was found in all features, however, it is only in VEP, LCPI and COPH that they are most abundant. Conversely, inflorescence species 'Y' was only found in STOP, BED5. GRAP and IRID. The occurrence of grass species 'Y' in BED5 would suggest that it was a bedding grass, while *E.calycina* and *Wildenovia sp.* had another function as it occurs almost exclusively in non-bedding botanical features. The fact that grass was visually a main, if not the main, plant in GRAP is obvious; although fig 6.9 may contradict this it must be remembered that corms weigh much more than grasses. Unfortunately no photographs were taken of LCPI and the field notes are undetailed.

PRINCIPLE EDIBLE PLANTS (P.E.P.):

This category consists mainly of the remains of corms/*Iridaceae* and tubers. They are considered to be the major carbohydrate yielding food source for the Soaqua. 'Unidentified corm species' consist of 4 types possibly from different species. These are: species 'N' = 1.5g; species 'P' = 2.75g; corm base unknown = 33.5g (most from LCPI); and, swollen corm base = 10.3g; together yielding total of 57.05g. These were grouped together as G. Hall did not have time to reanalyze the unidentified corms of Robey *et al.* (1978), and thus what Hall analysed as 'unidentified corm

FIG. 6.4: PRINCIPLE EDIBLE PLANTS (I.E. CORMS AND TUBERS)



base', Robey *et al.* may originally have called 'corm species N'. It was thus felt that they should be grouped together. As most of the analysis is concerned with a plants as a genus, species, such as *Babiana nana* and *Babiana strictea*, were grouped together.

Table 6.1 and Table 6.3 indicate that several plant species are most abundant in specific features (seen in fig. 6.4 and fig. 6.8). Four species form the main contribution to the P.E.P.: *H. virgata, M. fugax*, *Babiana spp.* and unidentified corm species. VEB, VEP, LCPI and COPH have a high abundance of P.E.P. in relation to other plant remains, with *H. virgata* dominating in each feature. The low incidence of P.E.P. in STOP could be indicative of its function as a roasting pit (discussed later). GRAP and VEP are similar in content: both have similar percentages of P.E.P.. The only difference is the appearance of *Watsonia sp.* in VEP (and in VEB). As stated earlier, P.E.P.'s over-represented in weight in GRAP in relation to grasses, and thus should not be considered as a main P.E.P. feature. IRID and LCPI have similar percentages of some P.E.P., however, the contextual analysis will show them to be different. Surprisingly *Dioscorea elephantipes* ('Hottentot's brood'), a large tuber, is not significant in the diet. It is only found in LCPI.

The above analysis indicates that the Soaqua were consciously selecting specific plant species as 'Principle Edible Plants', namely *H. virgata* and to a lesser degree *Babiana spp.* and *M. fugax*. Species such as *Watsonia sp.*, *Hesperantha sp.* and *Oxalis sp.* were included in the diet, however, not in significant amounts. The possibility that this is also related to relative abundance must not be forgotten.

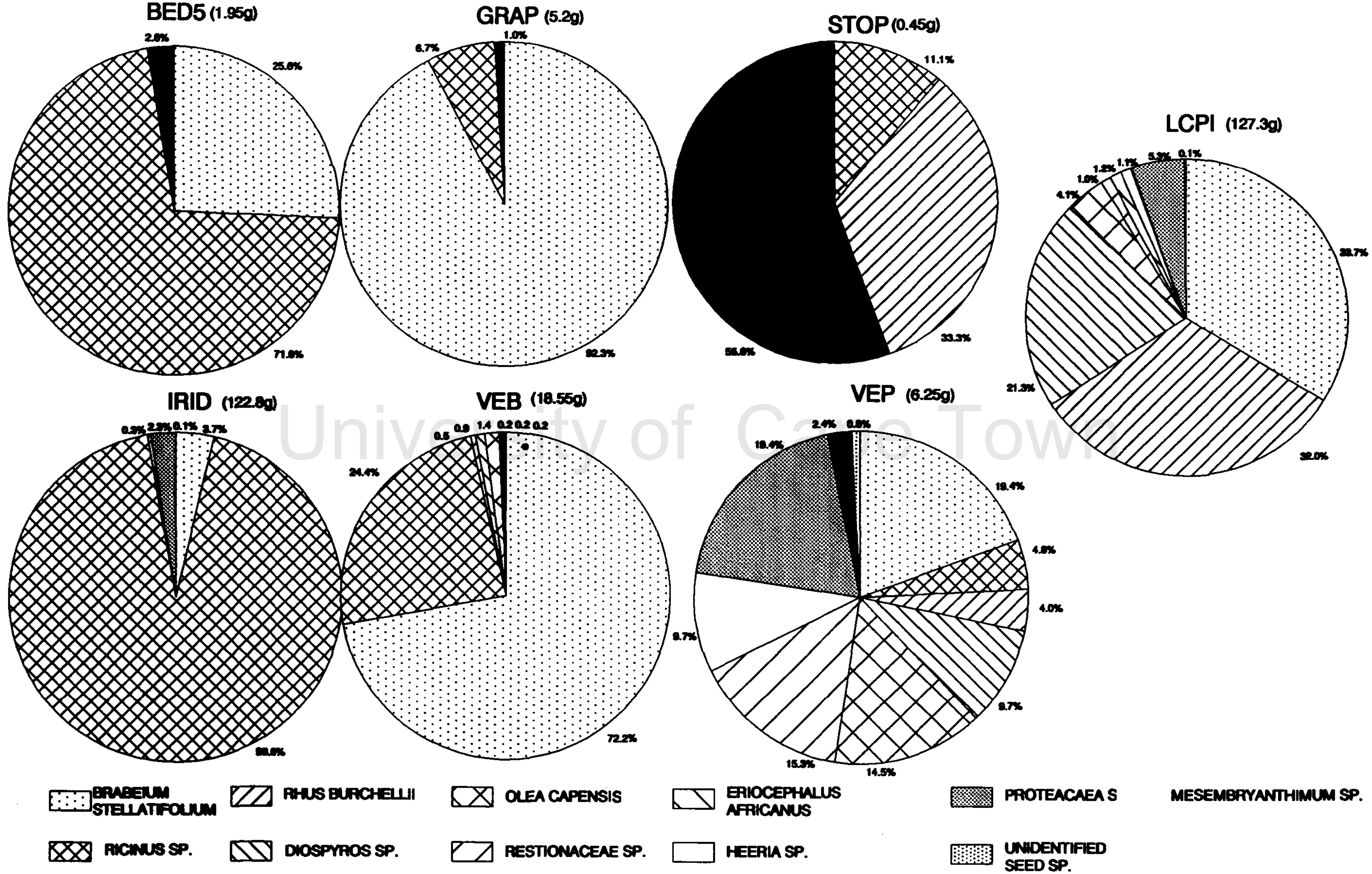
SEEDS AND FRUITS:

Seeds and fruits are believed to have played a complimentary role in the Soaqua diet, especially when staple foods were not available. In total there are 11 seeds and fruits species found in the deposit of the cave (fig. 6.5). Interestingly *Ricinus communis* occurs with some abundance, but it is highly toxic (2-8 seeds can kill an adult) as it contains concentrated ricin - an extremely poisonous toxalbumin (Munday 1988).

Of the seeds and fruits *B. stellatifolium* and *R. communis* were the most commonly found remain; however *R. burchelli*, relatively abundantly in LCPI, may have been generally more common in the deposit at Andriesgrond than the results indicate, owing to its small size and likelihood of loss through sieving.

What are the differences between the analyzed features ? Table 6.1 (shown in fig.6.5 and fig. 6.8) indicates that only four features have significant amounts (in weight) of Seeds and Fruits: LCPI, IRID, VEB and VEP. However, fig.6.8 indicates that of these 4 features only VEB, IRID, and LCPI (in ascending order) have significant amounts of Seeds and Fruits in relation to other plant categories. IRID and VEB are similar in that they have a low species diversity of only 1 or 2 main species. LCPI, with the highest percentage of Seeds and Fruits (and P.E.P.), has as high species diversity (as VEP). However, LCPI and VEP have different percentages of these species and they differ in the depositional context (discussed below). LCPI has no *Ricinus communis* and thus it can be differentiated further from other features. In LCPI

FIG. 6.5: PRINCIPLE EDIBLE SEEDS AND FRUITS PER FEATURE



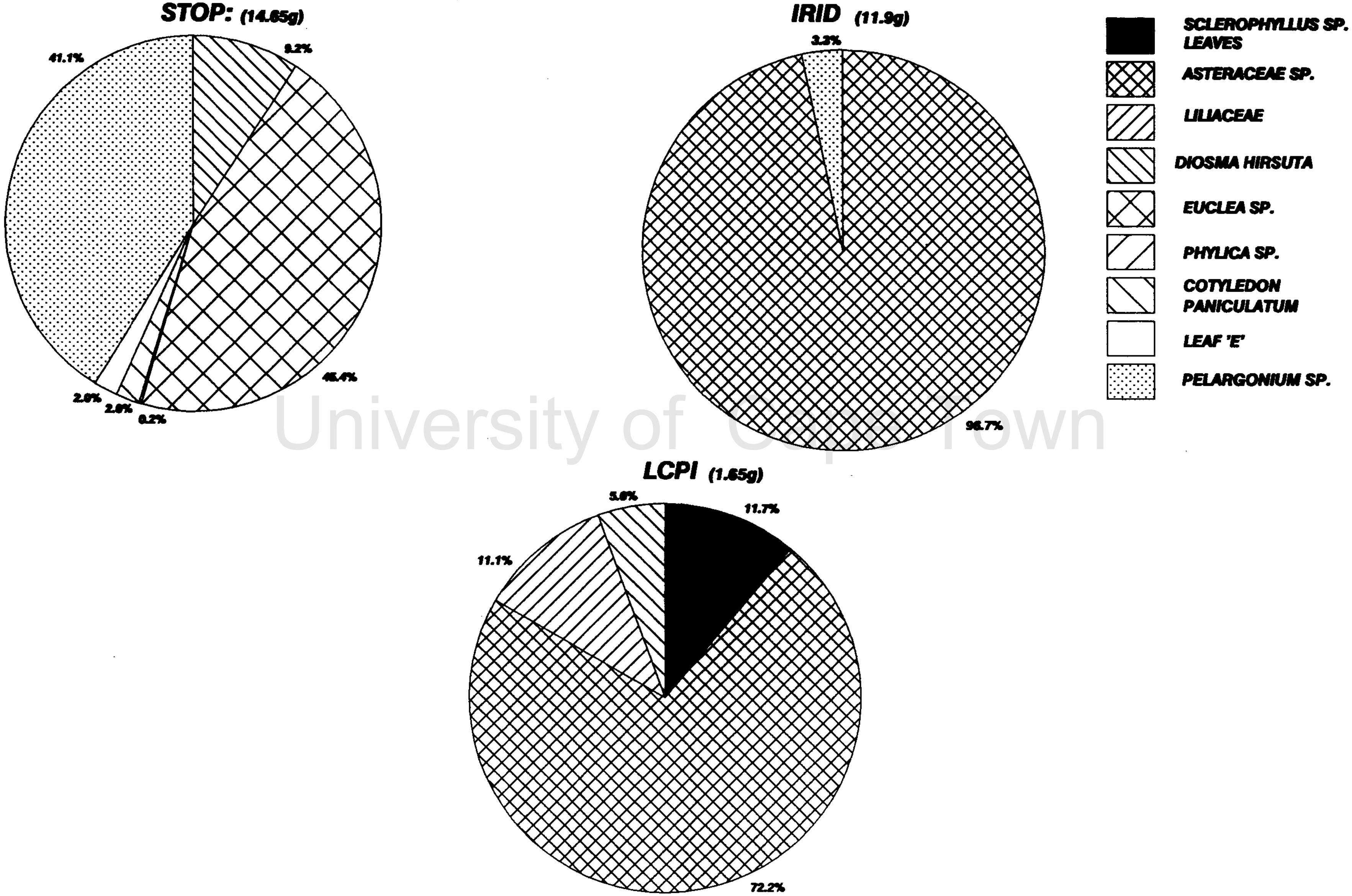
three species are dominant: *R. burchellii*, *Diospyros sp.* and *B. stellatifolium*. The seeds and fruits of *R. burchellii* can be stored and the leaves are edible (G. Hall 1991). The berries of *Diospyros sp.* and the fruits of *B. stellatifolium* can be stored (G. Hall 1991). According to Fox and Norwood (1982) *B. stellatifolium* are toxic and they must be soaked for several days in water and then roasted to lose these toxins. To a lesser degree *Olea capensis* and *Proteacaea* occur in LCPI, but not in significant amounts. *Olea capensis* have oil-rich seeds and fruits and the leaves may be used for flavoring (G. Hall 1991). The use of oil-rich plants in the absence of large animal fat reservoirs used in rituals could thus have ritual connotations (G. Hall 1991).

ADDITIONAL PLANTS:

Additional plants are those plants that had other uses, apart from being a food source. In fig. 6.6 several features are not present as they did not have any 'Additional Plants' in them: VEB only had 0.05g of *Asteraceae* and was thus not deemed significant.

Differentiation between feature utility can be found. STOP is dominant in *Euclea sp.* (-guarri) and *Pelargonium rapaceum* (bergaartappel) as opposed to IRID and LCPI which are abundant in *Asteraceae*. LCPI's small percentage of additional plants - 5.9% or 1.65g (fig. 6.8) can be seen as insignificant. Thus, LCPI is further distinguished from other features. The appearance of *Diosma hirsuta* (wild buchu) could be related to ritual activities as ethnographic records refer to this species being used as a body deodorant and in rituals (Hall 1991). Fox and Norwood (1982)

FIG. 6.6:ADDITIONAL PLANTS PER FEATURE



noted that *P. rapaceum* was eaten by the people of the Bokkeveld. It did not occur in Milton's (1978) regional survey and was therefore not considered to be a likely P.E.P.. Its location in only STOP also reinforces the notion that STOP was a roasting pit as this species was roasted in preperation in consumption. *Asteraceae* and *Euclea sp.* were most probably pot-herbs (plants used in flavouring).

Table 6.2 some plants also had medicinal and other utilitarian value. If these species had already been allocated to other categories then they were not put into this category, i.e being a P.E.P. was considered to be more important than its other uses. *Diospyros sp.* had bark and leaves that were used for medicinal purposes (Watt and Beyer-Brandwijk 1982 in Hall 1991). *Eriocephalus africanus* (Wilderoosmaryn) was used as a pot-herb and as a diuretic (Mason 1972 in Hall 1991; Fox and Norwood 1982). *Dioscorea elephantipes* contains cortisones and steroids (Fox and Norwood 1982). The gum from *Heeria sp.* (wild apricot) also has medicinal purposes and was used in tanning leather (Hall 1991). *Mesembryanthemum sp.* (sourfig or Hottentot's fig) was used as a laxative (Hall 1991). *Sarcocaulon sp.* (Bushman's candle) was used to cure diarrhea and as a tannin (Hall 1991). *R. burchellii* was also has use a tannin. Thus, the Soaqua made extensive use of the plants available to them: not only for food but for daily health and various processing tasks as well.

RESIDUE:

These are plant parts that were not eaten and the residue from sieving (called unsorted residue). Fig. 6.7 includes unsorted

TABLE 6.8: PLANT SPECIES, COMMON NAMES, AND USES
(AFTER G. HALL 1991)

GENUS + SPECIES	COMMON NAME	EDIBLE	TOXIC	MEDICINAL	SEASONALITY	INTERPRETATION
ASTERACEAE	VARIOUS	LEAVES	**		PERENNIAL/ANNUAL	USED AS TEA OR POT HERB
BABIANA NANA	KLIPUINTJIE	CORMS	-	-	AUG - SEPT	CARBOHYDRATES
BABIANA STRICTEAE	BOBBEJAANTJIE	CORMS	-	-	AUG - SEPT	"
BRABEIUM STELLATIFOLIUM	WILD ALMOND	SEEDS	SEEDS *	-	FEB - MAY	FRUIT IS SOAKED AND ROASTED
COTYLEDON PANICULATUM	SUCCULENT	ROOTS/STEMS	**	-	?	THIRST QUENCHER
DIMORPHOTHECA SP.	DAISY	LEAVES	LEAVES**	-	?	POISONOUS
DIOSCOREA ELEPHANTIPES	ELEPHANT'S FOOT	TUBER	-	CORTISONE & STEROIDS	ANNUAL	STARCH AND SAGO
DIOSMA HIRSUTA	WILD BUCHU	HERB	-	-	FEB - SEP	BODY PASTE WITH FAT
DIOSPYROS SP.	HOTTENTOT'S CHERRY	FRUIT/SEEDS	-	BARK AND LEAVES	OCT - DEC	BERRIES CAN BE STORED; BARK AND LEAVES + MEDICINAL
EHRHARTA CALYCINA	GRASS SP.	-	-	-	SEP - NOV	BEDDING/INSULATION
ERIOCEPHALLUS AFRICANUS (FRUIT)	WILDEROOSMARYN	LEAVES	-	DIURETIC	MAY - SEP	POT HERB;HERBAL TEA
EUCLEA SP.	-GUARRI	FRUITS	-	-	?	MAY NOT BE INDIGENOUS TO THE AREA; NOT VERY PALATABLE; ONLY LEAVES WERE FOUND
HEERIA SP.	WILD APRICOT	-	-	GUM	SEP - JAN	BARK + LEAVES + TANNIN
HESPERANTHA SP.	AANDBLOM	CORMS/LEAVES	-	-	AUG - NOV	LEAVES AND CORM EATEN
HEXAGLOTTIS VIRGATA	SWARTBASUINTJIE	CORMS	-	-	OCT - NOV	CARBOHYDRATES
LILIACEAE	VARIOUS	BULB/LEAVES	*/**	-	PERENNIAL	THIRST QUENCHER;SOME SHOOTS EATEN
MESEMBRYANTHEMUM SP.	SOUR/HOTTENTOT'S FIG	FRUIT/LEAVES	-	LAXATIVE	JUL - DEC	CAN BE DRIED;FOOD & MEDICINAL
MORAEA FUGAX	TULP	CORMS**	CORMS**	-	AUG - NOV	CARBOHYDRATES
OLEA CAPENSIS	CAPE OLIVE	FRUIT/LEAVES/SEEDS	-	-	NOV - DEC	OIL RICH SEEDS & BERRIES;LEAVES USED
OSTEOSPERMUM SP.	DAISY	LEAVES	VERY	-	MAY - SEP	MAY HAVE RITUAL USES; BUT POISON = CYANIC ACID.
PELARGONIUM RAPECIUM	BERGAARTAPPEL	LEAVES/ROOT	-	-	?	ROOTS ARE ROASTED
PROTEACAEA	VARIOUS	FLOWER	-	-	?	NECTAR
RESTIONACEAE SP.(SEEDS)	RUSHES	SEEDS	-	-		SEEDS EATEN
RHUS BURCHELLII var. UNDULATA	ROSYNTJIEBOS	LEAVES/FRUIT/SEEDS	-	-	APR - JUN	BARK FOR TANNING; LEAVES FOR BEVERAGE; FRUIT EATEN
RICINUS COMMUNIS	CASTOR OIL PLANT	-	SEEDS*	LAXATIVE	PERENNIAL	SEEDS HIGHLY TOXIC; NOT INDIGENOUS; SEEDS FOR CASTOR OIL
SARCOCAULON SP.	BUSHMAN'S CANDLE	-	-	DIARHEA	?	TANNIN + RESIN
WATSONIA SP.	KANOLPYPIE	CORMS/LEAVES	-	-	SEP - NOV	BULB EATEN
WILDENOVIA SP.	OLIFANT'S RIET	SEEDS	-	-	SEP - NOV	SEEDS EATEN

* = NEEDS SPECIAL PREPARATION
** SOME SPECIES

TABLE 6.[illegible]: PLANT SPECIES, COMMON NAMES, AND USES
(AFTER G. HALL 1991)

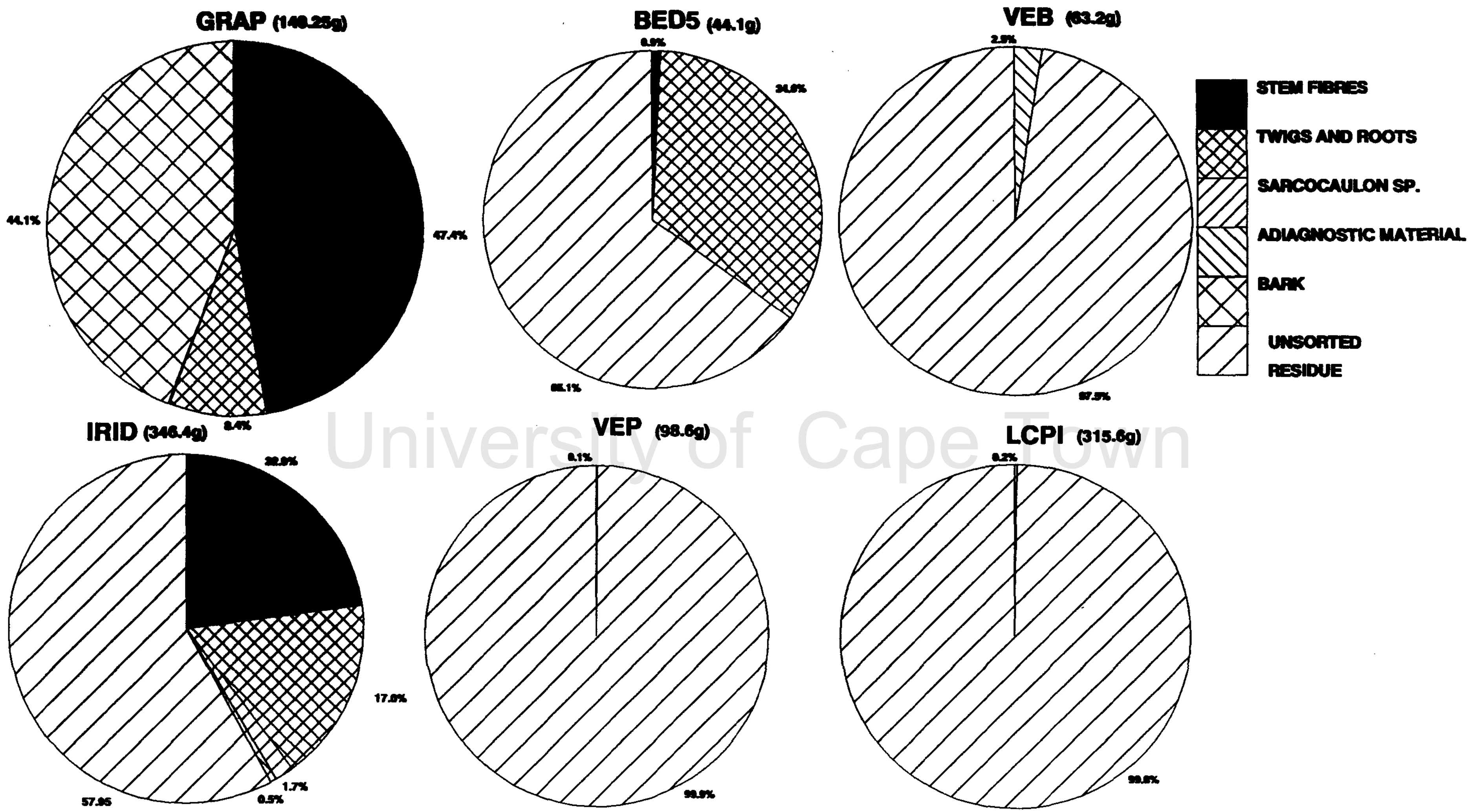
GENUS + SPECIES	COMMON NAME	EDIBLE	TOXIC	MEDICINAL	SEASONALITY	INTERPRETATION
ASTERACEAE	VARIOUS	LEAVES	**		PERENNIAL/ANNUAL	USED AS TEA OR POT HERB
BABIANA NANA	KLIPUINTJIE	CORMS	-	-	AUG - SEPT	CARBOHYDRATES
BABIANA STRICTEAE	BOBBEJAANTJIE	CORMS	-	-	AUG - SEPT	"
BRABEIUM STELLATIFOLIUM	WILD ALMOND	SEEDS	SEEDS *	-	FEB - MAY	FRUIT IS SOAKED AND ROASTED
COTYLEDON PANICULATUM	SUCCULENT	ROOTS/STEMS	**	-	?	THIRST QUENCHER
DIMORPHOTHECA SP.	DAISY	LEAVES	LEAVES**	-	?	POISONOUS
DIOSCOREA ELEPHANTIPES	ELEPHANT'S FOOT	TUBER	-	CORTISONE & STEROIDS	ANNUAL	STARCH AND SAGO
DIOSMA HIRSUTA	WILD BUCHU	HERB	-	-	FEB - SEP	BODY PASTE WITH FAT
DIOSPYROS SP.	HOTTENTOT'S CHERRY	FRUIT/SEEDS	-	BARK AND LEAVES	OCT - DEC	BERRIES CAN BE STORED; BARK AND LEAVES + MEDICINAL
EHRHARTA CALYCINA	GRASS SP.	-	-	-	SEP - NOV	BEDDING/INSULATION
ENIOCEPHALLUS AFRICANUS (FRUIT)	WILDEROOSMARYN	LEAVES	-	DIURETIC	MAY - SEP	POT HERB;HERBAL TEA
EUCLEA SP.	-GUARRI	FRUITS	-	-	?	MAY NOT BE INDIGENOUS TO THE AREA; NOT VERY PALATABLE; ONLY LEAVES WERE FOUND
HEERIA SP.	WILD APRICOT	-	-	GUM	SEP - JAN	BARK + LEAVES + TANNIN
HESPERANTHA SP.	AANDBLOM	CORMS/LEAVES	-	-	AUG - NOV	LEAVES AND CORM EATEN
HEXAGLOTTIS VIRGATA	SWARTBASUINTJIE	CORMS	-	-	OCT - NOV	CARBOHYDRATES
LILIACEAE	VARIOUS	BULB/LEAVES	*/**	-	PERENNIAL	THIRST QUENCHER;SOME SHOOTS EATEN
MESEMBRYANTHEMUM SP.	SOUR/HOTTENTOT'S FIG	FRUIT/LEAVES	-	LAXATIVE	JUL - DEC	CAN BE DRIED;FOOD & MEDICINAL
MORAEA FUGAX	TULP	CORMS**	CORMS**	-	AUG - NOV	CARBOHYDRATES
OLEA CAPENSIS	CAPE OLIVE	FRUIT/LEAVES/SEEDS	-	-	NOV - DEC	OIL RICH SEEDS & BERRIES;LEAVES USED
OSTEOSPERMUM SP.	DAISY	LEAVES	VERY	-	MAY - SEP	MAY HAVE RITUAL USES; BUT POISON = CYANIC ACID.
PELARGONIUM RAPECIUM	BERGAARTAPPEL	LEAVES/ROOT	-	-	?	ROOTS ARE ROASTED
PROTEACEAE	VARIOUS	FLOWER	-	-	?	NECTAR
RESTIONACEAE SP.(SEEDS)	RUSHES	SEEDS	-	-		SEEDS EATEN
RHUS BURCHELLII var. UNDULATA	ROSYNTJIEBOS	LEAVES/FRUIT/SEEDS	-	-	APR - JUN	BARK FOR TANNING; LEAVES FOR BEVERAGE; FRUIT EATEN
RICINUS COMMUNIS	CASTOR OIL PLANT	-	SEEDS*	LAXATIVE	PERENNIAL	SEEDS HIGHLY TOXIC; NOT INDIGENOUS; SEEDS FOR CASTOR OIL
SARCOCAULON SP.	BUSHMAN'S CANDLE	-	-	DIARHEA	?	TANNIN + RESIN
WATSONIA SP.	KANOLPYPIE	CORMS/LEAVES	-	-	SEP - NOV	BULB EATEN
WILDENOVIA SP.	OLIFANT'S RIET	SEEDS	-	-	SEP - NOV	SEEDS EATEN

* = NEEDS SPECIAL PREPARATION
** SOME SPECIES

TABLE 6.3: RELATIVE ABUNDANCE OF PLANT SPECIES

	BEDS	GRAP	STOP	IRID	VER.	VEP	LCPI	COPH
GRASSES:								
WILLDENOWIA SP.		*		*	*		***	
GRASS "X"	*	***		*				
LASSIOCHLOALONG		***		*				
EHRHARTA CALYCINA	*	*	*	*	*	**	***	*
GRASS "Y"	*	***	*	*				
INFLORESCENCE SP. "Q"		***		*				
TOTAL	**	***	*	**	*	*	***	*
PRINCIPLE EDIBLE PLANTS:								
BABIANA SP.	*	*	*	***	*	*	***	
HEXAGLOTTIS SP.	*	***	*	**	*	**	***	*
MORAEA SP.	*	*	*	**			*	***
UNIDENTIFIED CORM SPP.	*	*	*	**	**	*	***	
WATSONIA SP.					***	**		
OXALIS SP.		*		***				
HESPERANTHA SP.				*	*	*	***	
DIOSCOREA ELEPHANTIPES				***			*	
TOTAL	*	**	*	**	*	**	***	*
SEEDS AND FRUITS:								
BRABEIUM STELLATIFOLIUM	*	*		*	**	*	***	
RICINUS COMMUNIS	*	*	*	***	*	*		
RHUS BURCHELLII VAR UNDULATA			*		*	*	***	
DIOSPYROS SP.					*	*	***	
OLEA CAPENSIS				*	*	*	***	
RESTIONACEAE SP.					*	**	***	
ERIOCEPHALUS AFRICANUS							***	
HEERIA SP.						*	***	
PROTEACAEA SP. (2)							***	
UNIDENTIFIED SEED SP. (11)	*	*	***	**		**	***	
MESEMBRYANTHEMUM SP. CAPSULE					***	***		
TOTAL	*	*	*	***	**	*	***	
ADDITIONAL PLANTS:								
SCLEROPHYLLUS LEAVES							***	
ASTERACAEA				***	*		*	
LILIACAEA							***	
DIOSMA HIRSUTA			***				*	
EUCLEA SP.			***					
PHYLICA SP.			***					
COTYLEDON PANICULATUM			***					
PELARGONIUM SP.			***	*				
TOTAL			***	**	*		*	
RESIDUE:								
SARCOCAULON SP.				***			*	

FIG. 6.7: RESIDUE PER FEATURE *



*: STOP = 299.6g OF UNSORTED RESIDUE ONLY
COPH = g OF UNSORTED RESIDUE ONLY

FIG. 6.8: PERCENTAGES OF PLANT CATEGORIES PER FEATURE

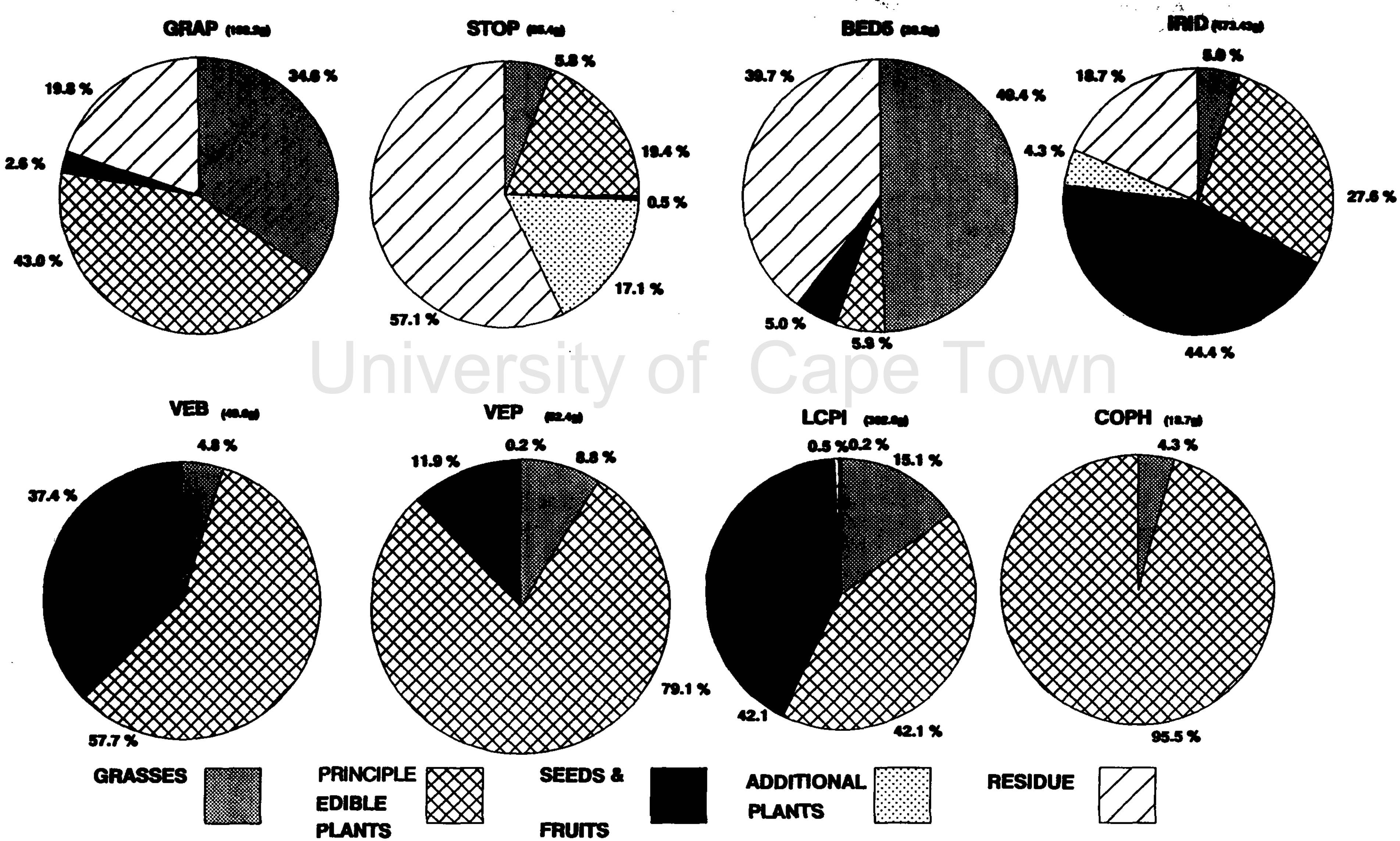
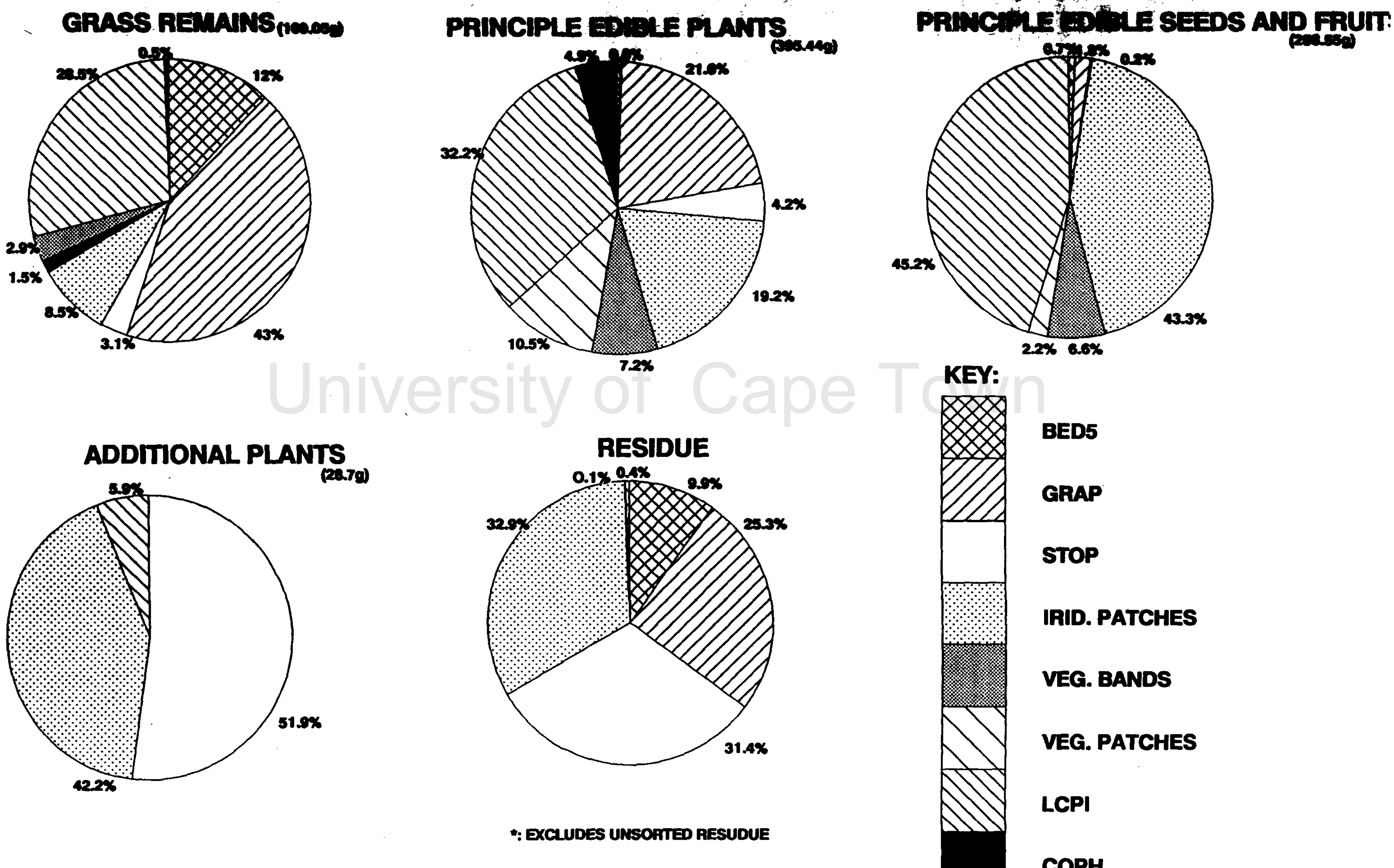


FIG. 6.9: BOTANICAL FEATURES PER CATEGORY

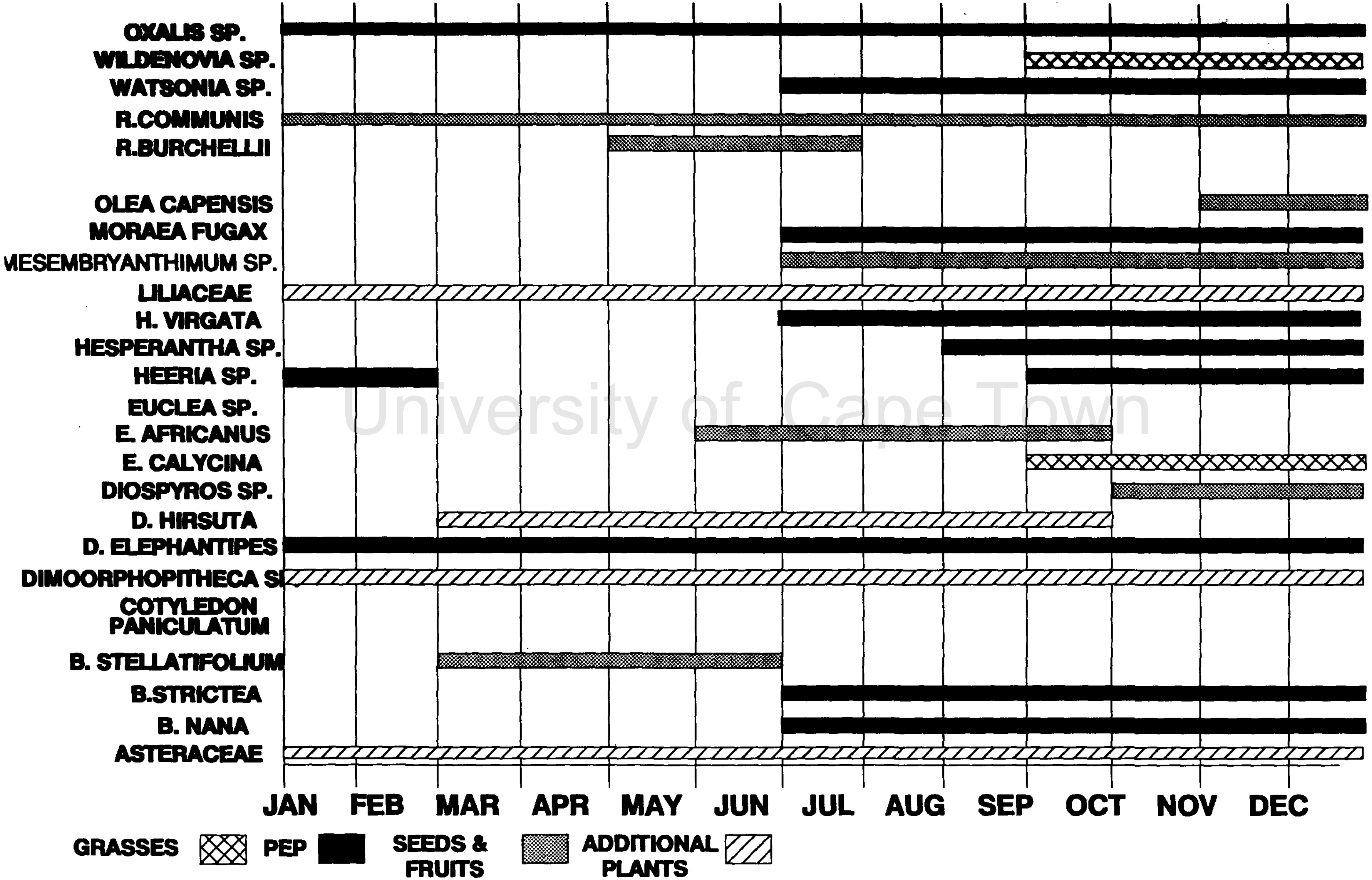


residue, while fig's 6.8 and 6.9 excludes it. This was done because not all features were bulk sampled and thus their residue had not been recorded, or was sieved out during the excavation. LCPI can thus be excluded from this category as 99.8% was unsorted residue. When unsorted residue is omitted (fig. 6.9), one notices that IRID, STOP, GRAP and BED5 (in descending order) have most of the residue category, i.e. roots, twigs, etc.. This is important when considering feature utility. The fact that IRID has by far more residue than LCPI further contrasts it with the former.

SEASONALITY:

Plant collection at Andriesgrond seems to be aimed at species with a wide seasonal availability and the geophytes of the *Iridaceae* family (G. Hall 1991). While the emphasis in time of collection (Table 6.2) seems to be from June to December, a number of plant species would also have been available at other times of the year, including herbs, seeds and fruits, as well as leaves and other greens (G. Hall 1991). Some of the latter may not have preserved well, and thus inferences from ethnobotanical sources should be of help in evaluating their significance (G. Hall 1991). Corms shrink in size in winter and are most palatable in summer (Robey *et al.* 1978), however, they can still be used in autumn and winter (i.e. before they start to flower again). Corms are best eaten just after it has finished flowering (Liengme 1987), and thus fig. 6.10 should be read slightly differently when looking at seasons in which the corms and fruits were most probably eaten. That is, the lines should be moved forward by 1 -3 months. An example of this comes from De Hangen

FIG.6.10: FLOWERING SEASONS OF PLANT SPECIES



(Parkington and Poggenpoel 1971) where *Watsonia sp.* and *Chasmanthe sp.* flower between July and November, but are best eaten from July to March/April.

The most interesting observation from these plant species in the P.E.P. and Seeds and Fruits categoryis that most of them can be used in a system of delayed return, i.e. they can be stored. This is not uncommon and Grevensbroek (1695 in Schapera 1933) observed that berries were sometimes ground and roasted to make small cakes which were stored and used when other foods were less available. Ethnobotanical sources mention that *Heeria sp.*, *Diospyros sp.* and *Mesembryanthemum sp.* can be dried and stored (Fox and Norwood 1982; Hall 1991).

Perennials cannot be considered to be staple foods, with the exception of *Mesembryanthemum sp.*, and were ignored in this part of the analysis. LCPI was most abundant in 8 (57.1%) out of 14 plant species from the P.E.P. and Seeds and Fruits categories. The corms supplied food between July to December; while the seeds and fruits from February to December. Thus, as at De Hangen, many of these species would be palatable at different times of the year providing the inhabitants of the cave with plant foods that would be available throughout most of the year. The only time when plant foods may have been scarce is during March to May/June. Could this be the time when the occupants went to the coast and then came back with the marine shell (see chapter 2) ?

FUNCTIONS OF FEATURES:

When G. Hall analysed the botanical remains from Andriesgrond Cave, the writer asked him to note the condition of plant species, e.g. if they were burnt, broken, etc.. **Vegetation bands** had corm casings that were split in half to remove the corms and a lot of corm casings were very fragmented and these vegetation bands are found only in or above MACO. Thus they are most probably plant remains that have been swept to the cave mouth. **Vegetation patches** and **Iridaceae patches**, while differing in content, appear to be very similar in context: both are patches of residue/waste vegetation remains, and seeds from these features tend to be burnt, e.g. *R. burchellii*. They also have a high percentage of the toxic *R. communis* seeds. **GRAP** appears to be a small pit/hole that was dominated by a single grass species followed by P.E.P. and then residue material. The emphasis on a single species seems to be an important factor. This grass species (as yet unidentified) was also dominant in the bedding, and perhaps the grass from GRAP was a "store" for bedding material. This grass was also very different to that of LCPI. **BEDS** had mainly grass remains presumed to be used for bedding. **STOP** is a roasting pit with a lot of residue and few plant remains P.E.P.. **COPH** had corm casings that were split in half and only had *H. virgata* and *Moraea fugax*. It is thus similar to *Iridaceae* patches. **LCPI** appears to be primarily a pit that is most abundant in PEP and Seeds and Fruits out of all the plant categories. It also has the largest species diversity indicating exploitation of foods through most parts of the year, and thus longer periods of occupation. Seeds of *R. burchellii* (and *O. capensis* ?) tended not to be burnt, as were the fruits of *B.*

stellatifolium and *Diospyros sp.* (which were not broken either) (G. Hall pers. comm). Only *Restionaceae sp.* tended to be broken. The highest relative abundance of *Heeria sp. and Diospyros sp.* occur in LCPI, and these plants were very likely dried and stored. All this indicates that the plants were, on the whole, not yet eaten; even the corms tended to be more "whole" than other features. This led the writer to believe that LCPI was a pit involved in a delayed return system for PEP and Seeds and Fruits during the leaner months. That *E. calycina* and *Wildenovia sp.* are not found in GRAP, BED5 and STOP indicate that they may have had an alternative use to that of bedding material. Table 6.4 indicates that these features had very few artefacts.

STORAGE:

In the last paragraph the writer stated that LCPI may have been a pit involved in a delayed return system or even storage of plant foods. Storage and a delayed return system may differ in that in the former the time gap between obtaining the food to actually eating it may be longer than in the latter: the difference is, however, semantic. If storage of plant foods is to be inferred then intensification of food resources is a prerequisite, as will be explained. S. Hall (1990:11-150) analysed the literature of Bender (1978), Cohen (1977) and Lee (1979) and found four indicators for intensification: increasing use of marginal habitats; increasing niche width; increasing use of high biomass, low trophic level resources (i.e. "when smaller food parcels are increasingly exploited and have short reproductive cycles and high biomass"), and; increasing intensification of site use. Does Andriesgrond 'fit the bill'? Firstly, Andriesgrond is found

TABLE 6.4 : ARTEFACTS FOUND IN BOTANICAL FEATURES:

ARTEFACTS:	BOTANICAL FEATURES :							
	BEDS	GRAP	STOP	IRID	VEB	VEP	LCPI	CSPH
BEADS	-	-	1	4	3	-	2	-
STONEWARE	1	-	-	-	-	-	-	-
KHOI POTTERY	-	-	-	1	1	-	-	-
OCHRE	-	-	-	1	1	2	3	-
REEDS	-	6	-	11	4	-	-	-
STRING	-	1	-	1	-	-	[illegible]	-
WOODSHAVINGS	138	180	11	1	378	52	215	-
RESIN	-	1	-	-	-	-	-	-
O.E.S. (GRAMS)	-	-	-	0.4	2.0	3.6	0.4	-
MARINE SHELL (GRAMS)	-	0.7	4.0	26.3	1.95	3.5	1.55	-
BONE (GRAMS)	17.2	26.2	140.3	65.9	127.55	77.55	22.2	-
LITHICS:								
WASTE								
CORES	-	1	1	2	6	4	2	-
UTILIZED PIECES	-	7	15	5	19	7	2	-
FORMAL TOOLS*	-	1	4(2)	[illegible]	[illegible]	6(2)	(1)	-

*: () = NUMBER OF ADZES

on a kopje. Secondly, "many of the plants are found in specific microhabitats and these [microhabitats] would... be used, in addition to those already in use" (G. Hall 1991:5). Milton (1978) also noted this (fig. 6.2). Thirdly, Andriesgrond is in a transitional ecozone with a high species diversity seen in the exploitation of high biomass (e.g. plants), low trophic level (e.g. micromammals, and not microfauna - see chapter 5) foods. Fourthly, plants from all seasons were found occurring within the same feature, e.g. LCPI. Thus, these plant and animal resources would have provided a range of resources throughout the year, and thus allowed for occupation over longer periods of time. It was noticed that March to May/June may have been somewhat leaner months, and it could have been at this time when the cave's inhabitants went to the coast, or elsewhere.

Literature indicates that storage is related to the emergence of agriculture and sedentism (Ingold 1983). However, this may not be the case in every instance. Storage allows for seasonal resources to be utilized out of season. It is a "manifestation of delayed returns in hunting societies" (Ingold 1983:552). Testart (1982) proposed that when natural resources are in abundance, large amounts can be collected and stored. The collection and storage of these plants are based on four factors: abundance of corms (which occurs at Andriesgrond, as well as a large species diversity); seasonality of resources (also occurs at Andriesgrond); efficient methods of food procurement (seen in the sharp increase of adzes and woodshavings), and; efficient methods of food storage (there is the presence of LCPI at Andriesgrond as well as pottery, and a negative impression of a pot) [Melkhoutboom (Deacon 1978) and Welgeluk and Edgehill (Hall 1991) also have storage pits.] Thus abundance and seasonality of resources are very important factors: during seasons of abundance these food resources must be gathered in enough quantity so that they can provide both immediate **and** delayed nutrition (Testart 1983). This is a relatively rigid economy as planning for the future is vital (Testart 1982).

Ingold (1983:552) described three types of storage. Firstly, there is **biological storage,** e.g. natural body fat reserves. Secondly, there is **practical storage,** i.e the setting aside of the produce is a "response to the temporal scheduling of resource extraction, transport and consumption." Lastly, there is **social storage** which involves rights of access to resources "and is an aspect of the rationality of resource extraction" (Ingold 1983:552). It is the "appropriation of materials in such a way that the rights over their future distribution or consumption converge upon a single interest [individual or group]" (Ingold 1983:556). If this occurs, then it tends to have a symbolic association with a specific group or individual. If the social relations are geared toward mobility then stores can be established at the new site. Thus, concludes Ingold, one can have practical storage without social storage (or *vice versa*), or both.

In societies where there are seasonal variations in the subsistence base, these societies tend to move to the areas that will support them (Testart 1982). There are two exceptions to this (Testart 1982). Firstly, different resources that are exploited throughout the year may be found within a localized geographic area - which may be the case for Andriesgrond.

Secondly, storage may occur. It is possible, however, that groups, such as the Soaqua, may have moved in an area because of its high species diversity, in comparison to the Karoo, as a response to social pressures of Khoi pastoralists. Testart (1982) continued to say that storage may thus inhibit the possibility of mobility **and** it decreases the need for it; this does not mean that there is no mobility, rather a relative increase in sedentism. At Andriesgrond mobility (to the coast) still occurs - inferred by the presence of marine shell, although this may be due to exchange. That is, the pressures from the Khoi pastoralists forced the Soaqua into marginal environments, where the subsistence shows an increase in the diversity of species in plants and animals exploited. The increase in marine shell, in post-1 700 BP units could also be seen as an attempt to find better methods of cooking and serving foods, e.g in the form of scoops, ladles, spoons, etc.

Testart stated: "Sedentism and large-scale storage imply each other: storage brings forth sedentism, and sedentism presupposes storage... [It is] a chicken and egg question" (1982:524). Food storage would also result in socioeconomic inequalities within the hunter-gatherer society, e.g. from a group 'ownership' to individual 'ownership'. This in turn may lead to prestige in owning a store, and be a start for these inequalities.

However, the writer disagrees with Testart's last few sentences. What does he mean by large-scale storage? How large is large? If the group is small then surely a large store, or several small stores, is not that necessary. Opulence is not a key concept in any hunter-gatherer society, even those undergoing social change (unless they aculturate, i.e. become assimilated into another culture). Secondly, he said that an increase in sedentism is related to an increase in population density . While this may be true, he assumes that the population is homogeneous. However, in the Western Cape this is certainly not the case, as there are firstly the Soaqua, then the Khoi, and finally the colonial farmers. Thus the assumption of an homogeneous population excludes intergroup dynamics that could have resulted in the 'minority' (i.e. less powerful) group to move to marginal habitats, move to less preferred foods by widening the subsistence base, etc. Thirdly, prestige, or any socioeconomic inequality, may not necessarily result from storage. Prestige, for example, can be downplayed by group morès. Ingold (1983) mentions that storage may be symbolic. This is quite correct, especially when the reasons for ritual are looked at.

While Chapter 8 deals with the inter-group dynamics and social stress in detail, a brief overview will be given here. The increase of ritual activity (as seen in many post-1 700 BP S.W. Cape sites) would imply a continuation of (homogeneous) social solidarity, and **not** the change in ideology that Testart implies. As there are rules governing the sharing of animal foods, likewise there would be rules governing the sharing of the end products of plant food procurement. Sharing is, however, relative to group size. What one should look at is the type of food that is being prepared. If it is a broth, gruel, etc., then the 'owner' of the store would need something to cook it in, e.g. pottery. Are pots individually or communally owned? It does not seem likely that a person in a hunter-gatherer society would own a pot and a 'store' unless he/she has a "monopoly" of plant foods and cooking utensils as well, for reasons to follow. Thus, pots would be either individually or communally owned. Thus, sharing would still occur. If the pots were individually owned then the pots could be shared in acts of reciprocity. That is, if pots were lent then access to the meal could be asked for. As it is not the shooter of the arrow, but the maker of the arrow, who owns the animal, likewise the owner of the pot can gain access to stored food, and inversely the 'owner' of the store can gain access to cooking utensils. That is by continually sharing, group cohesion can still be maintained/reinforced. If the 'store' is communally owned (and pots as well) then sharing would exist in any case, and thus social relations would be maintained. The importance of maintaining social relations in times of stress has been documented in many ethnographic records from many different places as well as in many sociological and psychological studies, and it can be inferred from the rock art (references given below). The increase in social solidarity can be strengthened by ritual activity and the act of storing can even be symbolic. Thus, the sharing of stored food would strengthen social relations. It thus necessitates sharing if group cohesion is to be maintained in times of social stress, and thus it would be more than social storage: it would be symbolic social storage. Thus, it does not necessary follow that social inequality will emerge in a society as a result of the adoption of storage.

CONCLUSION:

From this intensive study it can be seen that the Soaqua used many species of their surrounding vegetation for food, fuel for fires, medicines, flavoring, etc. The furthest they had to travel in procuring these would be down to the Olifants river for species such as those coming from Milton's (1978) Riverine vegetation community. Post-1 700 BP levels see a wide diversity of botanical, and animal (see chapter 5), resources exploited. A comparison with other sites such as KFR2 (Nackerdien 1989), Renbaan (Kaplan 1986), and De Hangen (Parkington and Poggenpoel 1971) reveals that these sites also had an increase in plant remains (especially corms) in post-1 700 BP levels. This supports the notion of the hunter-gatherers of the SW Cape moving to high biomass low trophic level resources after the arrival of Khoi pastoralists. This move was part of an intensification in the exploitation of resources in face of adverse environmental and social conditions. Environmental because of stock degradation of the land caused firstly by the Khoi and then by the colonial farmers; social because of dynamics of interaction between the Khoi and Soaqua. The wide range of plants that are available throughout the year (see Tables 6.1, 6.2, 6.3), in conjunction with the Soaqua being forced into marginal habitats, an increase in intergroup conflict and the increase in ritual activities (see Chapter 8), indicates that they were becoming more sedentary (although coastal contact does occur). This notion of an increase in sedentism is reinforced by the contextual and content analysis of features with botanical remains that indicated that most features were areas of plant waste remains and that LCPI was a storage pit and see Table 6.4. It will be shown (in Chapter 8) that this was in response to social pressures placed on Soaqua by Khoi pastoralists (1640 ± 50 BP at Andriesgrond) and then colonial farmers. The first farmer to established his farm in Clanwilliam was Jan Dissel in 1725 (Jansen van Rijsen 1980). The writer is aware of the problem of comparing a radiocarbon date to a calendrical date, however he does do this in very general terms BED1 dates to 180 ± 50 BP, and BED2 is believed to be contemporary with BED1. Thus they date to between 148 AD - 1798 AD. LCPI is just below BED2, thus it dates to just before this time ,although it is believed not though by much, could very well date to within the colonial period in the area. It must also be noted that colonial travellers had been travelling in this area since ± 1660 A.D. (*cf* Schriver 1682 in Mossop 1931). Thus the pressures of interaction of colonial farmers with the Soaqua should not be ignored. Storage and intragroup cohesion would have reinforced each other and may have been symbolically acted out (e.g. in the form of rock art and material culture such as adzes, pottery and the Dutch clay pipe). This would then have decreased intra- and inter-psychic conflict within the Soaqua.

CHAPTER 7:

THE ROCK ART OF ANDRIESGROND CAVE:

INTRODUCTION:

This chapter deals with the art of Andriesgrond Cave, the implications of art in the Soaqua social relations is dealt with in the following chapter. The two will be linked at the end of the next chapter. It is not the writers intention to give an interpretation of the rock art (this in itself is worth an entire thesis!). It is his intention to give a descriptive account of the art and its relation to the material culture and social relations of the Soaqua in response to increasing social pressure placed on them by Khoi pastoralists and later by colonial farmers. These social relations are seen as being dynamic and bilateral; they are part of a changing economy and ideology that is related to the resilient coping strategies of the Soaqua.

Parkington (1989a) indirectly suggests twelve features for finding meaning in rock art (the writer added the last five). These are: the frequencies in which the different sexes are depicted, direction of figures and their positions in relation to each other, clothing, equipment, types of heads, styles of figures, colour, animal species present, juxtapositioning, conflations, superpositioning, size of the figures, overlapping, 'smudging', noticeable trance features and the preservation and location of the art. This method of analysis was used for friezes #1, #2, and #3; frieze #4 was excluded from this method as it had insufficient features to warrant such a lengthy discussion. A frieze was defined, by the writer, by the spatial relationship of images, stylistic similarities, and a combination of the above mentioned features.

THE ROCK ART OF ANDRIESGROND:

The art of Andriesgrond was traced at the site and photographed, the latter as a secondary source for reference when it came to the final tracing of the art. There is only one exception to this: a line of people and hartebeest could only be photographed due to its height above the present bedrock floor exposed by the excavation (2m - 2.5m). However, as with the other tracings, detailed notes were made on each painting. The tracings show the use of colour in the art - something that has been neglected for far too long - and it is the writers belief that it forms an integral part of the images. Their exact meaning will be hard to discern by outsiders, but if more research was centred around the use of colours on art motifs an explanation, or a pattern, may begin to emerge. David Halkett, Mike Taylor and Grant Hall assisted the writer in the tracings. The art was divided into four main friezes.

FRIEZE #1 : THE HALLUCINATORY ANIMALS (fig.7.1):

This frieze can be found in the far left corner of the cave underneath a small overhang. It is in a reasonable state of preservation.

The field notes refer to these two animals as 'crayfish'; but they are not plausible depictions of crayfish. By ascribing a nomenclature such as *Jasus llandii* (crayfish), the interpreter

FIG.7.1: FRIEZE #1.

would immediately define the animal as being of that genus and species, and would thus see aspects of that genus in the image. That is ten legs, antennae, and tails would be seen. The writer prefers to consider them to be animals of an indeterminate genus and species, if animals they be.

The "appendages" of these two animals end in 'blobs' and two of the upper animal's legs merge into/onto the lower animal's body (this could be overlapping). The upper animal is superimposed over a faded human figure (found at near the end of the upper animal).

The most interesting feature of this frieze is the two red-ochered U-shapes that are superimposed over each animal. Both geometrics are similar in colour to each other, but are of a lighter shade of red than the two animals and the handprint. This difference in colour could be due to preservation factors such as sunlight and water as well as a different pigment. Sunlight can be discounted as this frieze does not receive any direct sunlight. There is some water erosion, but this only occurs on a small portion of the frieze. If differential preservation was a factor to be considered then it would be expected that the U-shapes would be darkest, followed by the lighter animals, and finally, the faded human figure; but this does not occur. The writer thus argues for the conscious use of different shades and colours to highlight certain aspects of this frieze. Which aspects were to be highlighted would be guesswork.

A handprint may be meaningfully associated with this frieze as it is the only one present in the vicinity. Its chronological association with the painting is unknown, but Manhire (1981) argued that, where superimpostioned with other images, handprints always occurred last in the sequence.

This frieze has thus a threefold sequence of superpositioning: first the human figure, then the two "animals", and finally the two geometrics. Lewis-Williams (1974) and Lewis-Williams and Dowson (1989) argued that superpositioning was a deliberate process governed by rules. They also argue (1989) for geometrics being entoptic phenomena and thus are trans-related as well as handprints. This would then suggest that this frieze is trans-related and thus symbolic. While entoptics do occur in this area these "animals" have not yet been found anywhere in the S.W. Cape (or rest of southern Africa) it may be part of a localized convention of rock art painting and meaning.

FRIEZE 2: DOUBLE WAVY LINES WITH HUMAN AND ANIMAL FIGURES (FIG. 7.2A): (only given in original copy!)

The painting occurs between the 2m to 5m divisions of the cave (meter divisions run from the left corner of the cave to the right of the cave wall). Preservation is average whilst smudging has effected the finer details of some of the images.

In total there are 33 human figures. The only identifiable female faces right, while 6 of the identifiable males face left. Of the indeterminate sex figures 7(20%) face right, 2 (5.7%) face downwards, 2 face towards the viewer and 17 (48.6%) are indeterminate. All human figures either overlap (37.1%) or are situated near a double wavy line - only one (male) is not placed

FIG. 7.2b: SMUDGING ON FRIEZE # 2

nearby the lines. Males (mean height = 101mm; median = 100mm; n = 4; sd = 19.3mm) tend to be larger than the female (40mm), and those of indeterminate sex (mean = 92mm; median = 110mm; n = 11; sd = 42mm). These are **not** enough to be significant. All humans are painted and full as opposed to stick bodies, and only one human figure has a hook-head. The female is in a slightly bent position and she may have a hook-head. There are two figures on their backs/stomachs, one bending at the knees and 29 are in a standing/walking position. There are two figures squatting in exfoliation marks (they may be females but this is uncertain). Jansen van Rijsen (1980) found similar squatting figures (females) at Keurbos 4, except they were not in exfoliated marks. A. Manhire (pers. comm.) mentioned that squatting people in exfoliated marks occur at Perdehoek and Prins Willemsklip. The lower thick line, too thick to be a simple finger smear (A. Manhire pers. comm.), enters and exits through a male's legs. All males have erections and one has a double 'infibulation'. All humans are in red ochre. There is a thin yellow line that connects with the hook-head figure: it enters/exits the head, goes through the arm and underneath the one leg. This most probably connects with the yellow line to the left of this figure. There is another yellow line (similar in size) on the opposite side of the lower thick line and it may have originally connected with the hook-headed figure.

All 4 animals are of an indeterminate genus. One orange animal (bovid?) appears to have its forelegs folded (or this could be poor preservation). The other orange animal may have horns. On this animal there are 2 (superimposed ?) red 'objects/blots' and the hind leg is in black. The black animal is elongated and thin around the abdomen. The red ochred animal has a long neck but no head and the legs are faded. All animals face to the right.

A possible bag occurs near the upper thick line. The male who is connected to the lower thick line appears to be holding an object in one hand. There are two figures of indeterminate sex who are holding 'sticks' in their hands, and another who is holding a bow. All humans appear to be naked, but the high incidence of indeterminate sexed figures may indicate that clothing is present: a kaross for example, may have hidden the sex of the individual.

Black finger dots occur in the lower half of the frieze and some are superimposed over this line. Handprints are superimposed over all figures where they occur. 'Smudging' (red ochre 'stains' placed over the painting) occurs over the whole frieze (this was not indicated in the tracing). 'Smudging' is common in the sandveld and Cape Fold Belt (Manhire 1981; Yates and Manhire 1991). Halfway across the frieze, near the upper thick line, there is a shorter thick line were there are three pairs of very finely painted red vertical lines, each with a smaller line at an angle to the vertical line. These are unique to Andriesgrond Cave (A. Manhire pers. comm.).

It has been noted that males with infibulations may be trans-related (Lewis-Williams and Dowson 1989). The two thick lines could be geometrics as seen at Traveller's Rest (A. Manhire pers. comm.), or similar to the famous 'Elephants in Boxes' (Maggs and Sealy 1983) or the 'Phoenician Ships'. That the lower thick line enters/exits the one (tallest) male may also indicate trance, as he is connected to this 'geometric' line. Manhire and Yates (1991) and have noted that smudging may also be trance-related.

FRIEZE # 3: LINE OF HARTEBEEST AND HUMAN FIGURES (FIG. 7.3):
(In original Copy)

This frieze can be found between the 8m and 12m points of the cave. It is between 2m to 2.5m above the present deposit. Preservation is generally good, but some areas have been eroded by water flow.

There are 6 human females (possibly a seventh) while only one male is visible. By association of position and equipment there originally may have been 5 males in total. Humans of indeterminate sex number 6 in total. All humans face to the left except for two: one faces to the right and the other outwards. The former is in a sitting position and the latter in a standing position while all other humans are in a walking position. There are three females in line with the row of hartebeest, while all other figures are above the hartebeest. Only one figure has its foot overlapping the hartebeest. Human arms (where visible) are either in a flexed or raised position. If the writers sexing of the figures is correct then there is a difference in height between males and females, although it is not statistically significant. Males have a mean average height of 342mm (n = 5; median = 317mm; sd = 100.7mm). Females have a mean average height of 238mm (n = 7; median = 233mm; sd = 71mm). Thus it appears that males are larger than females. Of these humans two were of indeterminate sex, and two could not be measured. All humans are in red ochre. Of the walking figures nine have white flecks around their toes, ankles, knees abdomens, chest, back and/or arms, and five have a pinkish pigment around their knees. This pinkish pigment was noticeably thicker than the red ochre. All humans appear to be naked. All humans appear to have no heads. The absence of heads connects the two humans on the far left with the lines of figures on the right, but the former do not have the white flecks nor the pink pigment. The top right four figures (male?) are equipped with sticks and one has a calabash-type object in the upper hand. Both figures on the left hand side have sticks in their hands.

If horns are indicative of male antelope then there are two male hartebeest, five female hartebeest and four of indeterminate sex. All hartebeest are similar in size, face to the right and are juxtaposed with humans. All hartebeest, except one, are in bichromatic yellow and white. The yellow was used for the torso, hind quarters, neck and head; the white for the legs, stomach, throat and horns. One hartebeest was either very smudged in red ochre or is very faded: it is shown in re-drawings as in red ochre. The 2 antelope of indeterminate genus are in red ochre.

There are eight handprints in this frieze and one is decorated with the common U-shape design (Manhire *et al.*1983). All handprints are superimposed over hartebeest where they occur and only one handprint has an orange finger smear superimposed over it. A hartebeest is superimposed over a red finger smear(?). A red finger smear is superimposed over a female's leg.

Katz (1982 in Lewis-Williams and Dowson 1989) mentions the 'boiling energy' experienced by trance dancers and Lewis-Williams and Dowson (1989) has interpreted these white flecks as representing the 'boiling energy'. Lewis-Williams and Dowson (1989) also notes that handprints are related to healing potency and are thus also trans-related. As noted in the previous frieze, males with erections may be trans-related. The use of the pink pigment is interesting, but its meaning in unknown.

FRIEZE #4: LARGE FIGURES (fig 7.4):

This frieze has five humans and two figures that are indeterminate. This frieze was traced to contrast it with the other friezes as these seem to be of a very different 'style'. They are all in red ochre. One figure is outlined in red ochre and it can be either an unfinished painting, an image intended as such by the painter, or due to poor preservation. A close inspection of this painting could not find any traces of ochre in the area between the outline. This frieze was found near the bottom of the cave wall and received direct sunlight from morning to noon, hence its faded appearance.

FIG. 7.4: FRIEZE # 4.

CHAPTER 8:

CONCLUSION: MATERIAL CULTURE, IDEOLOGIES AND SOCIAL STRESS.

INTRODUCTION:

This chapter deals with the social interactions between Khoi (and to a lesser degree colonial farmers, a.k.a. burghers) and the Soaqua. So far in this thesis the Soaqua's material culture has been emphasized. However, their ideological aspects must not and cannot be omitted. To omit this would be a serious flaw in any understanding of Soaqua social relations as the one influences the other. To understand the ideological/social relations of a society it is necessary to look at the micro- and macro-level. That is, how individuals and groups interact in dynamic social relations. Hence, sociological, social anthropological, and psychological information will be used. While the writer is fully aware of the problems of using modern ethnographies and social psychological studies to imply past human behaviour, there are some basic cross-cultural universalities that cannot be denied (i.e. they are acultural and asexual), and these universalities should be used if a better understanding of group behaviour and conflict is to be achieved. The results of such an analysis should be restricted to a specific society and culture as it is the material culture of that society that is used to come to the conclusions. Thus, the results of this section are exclusively restricted to the Soaqua (i.e. the hunter-gatherers of the SW Cape Folded Belt Mountains).

By looking at intergroup conflict, intragroup membership, stress and social change (and their relationship to one another) an explanation for changes in the subsistence base, domestic locations and the art can be found. It is here where modern studies become important. One of the major "drives" behind sociological and psychological studies is the need for reliability, validity and replicatabilty. Without these three a study is hardly taken seriously. To be able to replicate an experiment/study reinforces its validity and reliability, and thus forms the basis for its universality. Admittedly one is looking at industrialized societies; however, the writer feels that it can be argued (at length !) that the results of the studies of human behaviour can be applied with equal validity to nonindustrialized societies. This, of course, depends on the nature/topic of study which in this case is ritual, stress and coping strategies. How far back in time one can take these results and apply them to human behaviour is open to debate. The main advantage of these types of studies is that they attempt to look at the cause and effects of behaviour and not the effects alone. The archaeological evidence from Andriesgrond Cave and background archaeological literature to this phenomenon will be given, followed by some theoretical considerations.

THE ARCHAEOLOGICAL EVIDENCE FROM S.W. CAPE SITES:

It was noted in Chapter 3 that of the non-litihic artefact groups 4 yielded interesting information: decorated O.E.S., Khoi pottery, adornments and the Dutch clay pipe fragment. Of the engraved O.E.S. 77.8% (or 7 out of 9) were found in pre-1 700 BP units. If engravings/decorations have a symbolic connotation, then these percentages would contradict later paragraphs that argue that there was an increase in ritual activity, and thus an increase in ritual artefacts, amongst the Soaqua after the arrival of Khoi pastoralists. However, as it will be noted later there was a change in symbolic behaviour, e.g. the incorporation of an outgroup's material culture in symbolic/ritual activities. Thus, if engraved O.E.S. was symbolic, or used in rituals, it would strengthen the notion for a change in social relations in relation to environmental and social stress. That is, there is a change in the emphasis for using O.E.S. in symbolic behaviour that coincides with the increase of an outgroup's (Khoi and/or burgher) material culture, such as Khoi pottery, stoneware, brass pendants and Dutch clay pipes. This change is further strengthened when one finds no engraved O.E.S. in Units 1 and 2A/B. These few pieces of engraved O.E.S. are, however, not significant enough to support this. By looking at other S.W. Cape sites a similar trend can be seen. KFR2 (Nackerdien 1989) had 3 pieces of decorated O.E.S.: 2 from LBA (3430 ± 80 BP) while the third piece's provenience was not given. Renbaan Cave (Kaplan 1984) either had no decorated O.E.S. or it was not given. Renbaan does however have mainly a post-1 700 BP deposit. Most of the decorated O.E.S. at Tortoise Cave occur in pre-1 700 BP units (A. Jerardino pers. comm.). EBC has a total of 4 decorated O.E.S. pieces of which 3 come from pre-1 700 BP units (R. Yates pers. comm.). Dune Field Midden has, as yet, no decorated O.E.S. (J. Parkington pers. comm.). De Hangen is an exception to the above sites with most of the decorated O.E.S. coming from pottery levels (Parkington and Poggenpoel 1971) Thus, while each site has only a few pieces of decorated O.E.S., the trend remains the same: higher frequencies of decorated O.E.S. occur in pre-1 700

BP units. This may be sampling error and more sites need to be analyzed before any final conclusions can be made.

That Khoi pots were used for cooking is undoubted as several pots were charred on the outside. Although nothing has been published, some archaeologists have noted that the number of unrefitted sherds outnumber the number of refitted sherds. It has been suggested that this may have a symbolic function. This would seem likely especially when put into the context of a delayed return system (discussed in Chapter 6), social / cultural assimilation / avoidence and the decrease of decorated O.E.S. in post-1 700 BP units in the S.W. Cape. A decrease of O.E.S. coincides with the occurrence of (decorated) Khoi pottery at Andriesgrond cave. What is important to note is that while both have geometric designs the social value between the two is different. That is decorated O.E.S. was manufactured by the Soaqua, while pottery was made by the Khoi.

Further change in symbolic behaviour comes from the adornments. Of the beads found, 88.4% were found in post-1 700 BP units. This may be indirect evidence for an increase in social networks of gift exchange in response to the pressures related to the arrival of the Khoi. While not evidence for a change in ritual behaviour, the European brass that was fashioned into pendants, the glass beads, and the Dutch clay pipe with geometrical designs and traces of possible *Cannabis sativa* are evidence of the incorporation of an outgroup's material culture into a different ideological system. This is discussed at length below.

In Chapter 4 it was noted that of the total silcrete adzes in post-1 700 BP units, at Andriesgrond, 42% were made on MSA/'older' flakes, whilst pre-1 700 BP units only had 23.1% of these adzes. The need for larger flakes may not be the only interpretation of this phenomenon as MSA scatters are numerous in the Olifants River Valley (R. Yates pers. comm.) and thus easily obtainable - their is one at Andriesgrond Cave - and thus the frequencies of these adzes are not significant to warrant this interpretation. It was also noted that of the double-sided adzes (or slugs) that 24% occurred in post-1 700 BP units and that there was a slight correlation between double-sided adzes and adzes on older flakes in that where one commonly occurs so does the other, especially in Unit 2A, and even in Unit 4. In Chapter 6 it was argued that botanical remains, especially those in LCPI, indicate a longer period of single occupations. That is, there was a decrease in mobility, although coastal contact did occur (either by trade or mobility) that coincided with the arrival of Khoi pastoralists in the S.W. Cape. It was also noted that mobility may have been decreased in a north-south axis, rather than one in a east-west axis (mountains to coast) and this north-south axis would have resulted in a decrease of silcrete primary sources; hence the secondary sources - MSA scatters. If primary silcrete sources were 'cut off' or restricted then it may be feasible to assume that adzes were retouched on both sides to achieve maximum efficiency from a single flake. This would then agree with Kaplan (1985) who believed MSA/'older' flakes used for adzes was related to the arrival of Khoi pastoralists; but a further interpretation is needed.

Re-used MSA/'older' flakes primarily occur, at Andriesgrond Cave, on adzes and on only 2 silcrete MRP's and 3 silcrete utilized flakes in Units 2B and 2A. Admittedly patination is easier found on silcrete than on other raw materials and one patinated hornfels adze was found. There were 3 re-used MSA flakes (with facetted platforms) in Unit 5, however, these occurred on hornfels only. MSA and Terminal Pleistocene cores (i.e. older lithics) occurred mainly in post-1 700 BP units (n = 2) - Unit 5 is an exception where one disc core was found. In Chapter 7 it was noted that there was smudging of the rock art over earlier images and this was interpreted as a means of gaining power from the images (Lewis-Williams and Dowson 1989; Yates and Manhire 1991). Further on it will be noted that in stressful situations, where they occur for a length of time, result in changes in the ideologies related to that society. These changes in ideologies entailed an intensification not only in the subsistence base and settlement patterns, but also in an intensification of ritual activities, and that these societies under stress resort to previous coping strategies. One method of 'resorting back to previous coping strategies' is to utilize 'older' material culture in a ritual context, as the ideologies of a group are reified onto the material culture. It was noted in Chapter 4 and 6 that adzes are primarily related to plant food subsistence. A significant percentage of silcrete adzes were made on re-used MSA flakes, and the utilization of 'older coping strategies' in times of social stress and the social 'power' drawn from 'older' artefacts (including rock art) can be related to these adzes on MSA/'older' flakes. That is ideologies are reified onto the material culture that is used to provide the subsistence base of that society. The occurrence of other 'older' lithics in the ceramic deposits, such as cores and MRP's, may have been used in symbolic behaviour as well.

A valid criticism of this hypothesis is that it does not account for the occurrence of 'older' lithics in pre-1 700 BP units, such as Unit 4. This can be countered by arguing that these lithics are intrusive. However, by arguing this, it negates the argument that adze production did occur in pre-1 700 BP units and that these adzes are found with woodshavings and botanical features, commonly associated with adze production in post-1 700 BP units. If the writer's interpretation of the stone tools and ^{14}C dates for Units 4 and 5 is correct, i.e. these units contain mostly mid-Holocene artefacts, then an answer to the criticism can be found. Parkington (1989b) noted that there is a hiatus at Elands Bay Cave and nearby sites between 8 000 BP and 4 000 BP, and that the people from this area moved into the mountain areas where the environment was more conducive for the people to live. This would then have resulted in an increase in the population density of the mountain areas. Hall (1990) mentions that demographic pressure is one factor involved in the intensification of resources. The question that now remains is if this demographic pressure would have resulted in similar social and environmental stresses as in the post-1 700 BP units. So far this can only remain a suggestion and further analysis of other sites is needed.

Wadley (1987, 1989) and Hall (1990) noted the use of endemic styles in stone tools (either in the raw materials used or in the way they were made) in times where people were either moving into new areas (Wadley), or as territorial indicators (Hall 1990).

Given assemblages with higher frequencies of scraper types at S.W. Cape sites it will be interesting to see how scraper types change through time as Mazel and Parkington (1983:17) suggest that the differences "between traditions should be sought in non-functional characteristics."

If "pastoralism was a population incursion, then a number of points follow. Populations would have increased, wild animals would have been partly replaced by protected domestic stock, new kinds of conflict situations may have arisen and non-pastoralists may have been forced, as the weaker group, to move down on their list of preferred foods towards those more time-consuming to gather or less productive to hunt" (Manhire 1984:118). This is reiterated by Parkington (1984:158): "hunter-gatherers [were] living on the fringes of pastoralist society, coping with the problems of living in a pastoralist-dominated community." While some assimilation on the individual level was/is inevitable, there are fundamental different social relations between those two economies (Parkington *et al.* 1986), and thus group assimilation does not seem to be likely. These two economies must have been competitive: "Relocation into the kopjes was both a social and ecological decision" (Parkington *et al.* 1986:325). Thus Manhire and Parkington believe the Soaqua and Khoi to be different people of different socioeconomies. The writer is aware of the Soaqua-Khoi debate (Schrire 1980), and he prefers to follow Parkington's and Manhire's views.

Early colonial travellers and farmers in the Cape Province noted the conflict between the Khoi and Soaqua, Soaqua and burghers, and Khoi and burghers. Schriver (1689 in Mossop 1935) notes that the Soaqua raided the Khoi kraals and that the Khoi would pursue and kill them if they could. Botha (1962) notes that the burghers (and most probably the Khoi as well) feared the Soaqua's poisoned arrows. Schapera (1933) mentions the skirmishes between Khoi and burghers over land disputes. Thus the conflict was trilateral. That individual contact and transactions occurred is undoubted and supported by the archaeological record. That there was conflict between Soaqua and Khoi at the time of early colonial travellers (i.e. c. 1660) suggests that it had been occurring for some time before. Just how far back such conflict began would be at present geswork, but the writer assumes such a state of affairs soon after the Khoi arrived in the SW Cape.

A change is "visible in subsistence, residential and behavorial information.." (Parkington *et al.* 1986:327). Manhire (1984) states that the sandveld reflects this change in the choice of tools made and types of sites occupied. Between 4 000 BP and 1 800 BP sites are found in the sandveld and mountain areas, and only after ±1 800 BP is there an increase in the frequency of sites in the mountains and coastal areas (Manhire 1984; Parkington 1984). "Occupation in the last 2 000 years was focussed mainly in the mountains and that painting there perhaps persisted for longer" (Parkington *et al.* 1986:327). Similar patterns are seen in the coastal sites (Parkington 1986).

That the material culture is seen to have changed is unequivocal. That the ideologies of the Soaqua changed as well, is another matter that will have to be subject of further study. To do this inter- and intra-group relations must be examined.

THE THEORETICAL PERSPECTIVE:

Apart from inaccurate perceptions, "conflict of interests are a potent source of mutual derogation " (Brown 1988:214-5). Contact between two groups often highlights differences and thus lessens intergroup attraction (Brown 1988). Positive attitudes increase towards **individual** participants, but not to the group as a whole, i.e. it is interpersonal and not intergroup (Cook 1978 in Brown 1988). This is seen where Soaqua females would marry male Khoi. That client relationships existed is also a strong possibility, but this was again most probably on an individual, rather than intergroup level. Those Soaqua that participated in client relationships may not necessarily have been assimilated, for as Herding and Hogrefe (1952 in Brown 1988:215) observed, when people of different groups work together, their attitudes towards each other change for the better; however, these changes **were** restricted to the arena of co-operation and "did not extend to other social activities." An alternative to intergroup conflict and stress would be assimilation. Assimilation involves that the minority group acculturates; however, this involves giving up both one's self-concept as well as that of the group, and thus it "may be strenuously resisted by ... minority groups..." (Brown 1988:218). However, any assertion that individual assimilation did not occur in the S.W. Cape would be misleading. Wilder (1984) found that only when there was a pleasant encounter with an outgroup would there be a more positive attraction to that group. That 'pleasant' encounters between these two **groups** (not individuals) occurred does not seem likely. That the Khoi, directly or indirectly, caused the Soaqua to move to marginal environments, widen their subsistence base, and actively hunted and killed the Ŝoaqua (and Soaqua killing the Khoi) strongly suggests that 'unpleasant' encounters occurred frequently.

The occurrence of intergroup conflict is thus highly likely. The most famous study of intergroup conflict comes from Sherif (1964;1966). He stated that group members, intergroup activities and behaviour will reflect the objective interests of **their** group as opposed to the outgroup. Where there is a conflict of interests the ingroup's goals/causes are more likely to be strengthened by a competitive orientation towards the outgroup. An increase of intergroup conflict invariably causes intragroup relations to intensify (Brown 1988; Blake and Mouton 1962; Julian *et al.* 1966; Kahn and Ryen 1972; Brewer and Campbell 1976; Brewer 1979; Stagner and Eflal 1982; Brown and Williams 1984; and, Brown *et al.* 1986) . One of the consequences of intergroup 'conflict' is "a more differentiated intergroup structure as the group adapts to its new circumstance" (Brown 1988:201). Thus, intragroup relationships change as a consequence of the changed intergroup relationships. That is, change is bilateral.

"Becoming a member of a group may also have consequences for our evaluation of ourselves, for our own self-esteem. If we internalize our group membership as part of our self-concept it follows that any prestige or value associated with those will have implications for our feelings of self-worth" (Brown 1988:22). The inverse of this is also true: if group membership is severed, feelings of self-worth will decrease and thus intrapsychic stress will increase. Hence, ritual activity to reinforce group identity and thus individual self-worth. If intragroup membership does not succeed in reinforcing group identity then the group will atomize (Brown 1988; and see Taylor 1983). To prevent atomization the group will need superordinate goals (see Sherif 1964, 1966). These superordinate goals can be in the form of an increase in gift exchange networks (beads are most abundant in post-1 700 BP units at Andriesgrond Cave, and the writer acknowledged that this may be a sampling error), attempts to get rid of the outgroup (raiding parties), and increases in group ritual activity and attempts at symbolic domination over the outgroup (discussed above and below). Thus group membership, ritual, and other processes mentioned above decreases intrapsychic stress and thus helps the group function as a whole in times of social stress. Where does the social stress come from? The outgroup (or Khoi in this case): "The intrusion of pastoralists increased stress on residual hunter-gatherers and stimulated both ecological and social responses, two of the latter being intensification of ritual and an increase in painting" (Parkington et al. 1986:313).

A minority group without any obvious advantages strives to seek dominance of their belief(s) (Moscovici 1976). It is thus the inverse of conformity and rests on virtual or actual acts of violence (Moscovici 1976). Could the incorporation of outgroup material culture be a form of introjected symbolic domination? Introjection is a psychological defence mechanism where "aspects of the external world are absorbed into or incorporated within the self, the internal representation then taking over the psychological functions of the external objects" (Reber 1985). A modern example would be where a husband continuously abuses his wife; she would then fantasise/dream that she was the abuser and see herself as being dominant. Another example would be where the Soaqua would see the Khoi as being threatening to their social relations and this would cause stress. To cope with this stress they would then introject these feelings and see themselves as being the cause of Khoi stress (remember that stress and social conflict is bilateral). This would then be reinforced by rituals that used aspects of the Khoi's and burgher's socio-economy. For instance the number of individual pot sherds at Andriesgrond, and other sites, outnumber the number of refitted sherds from a single site, and thus they may have had a symbolic, as opposed to or as well as an utilitarian, function. That Khoi pottery was used for domestic purposes is not denied; however, even under such circumstances it may have fulfilled a symbolic role as well (discussed in Chapter 6). Other examples are the incorporation of aspects of Khoi economy (e.g. sheep) in the rituals (seen in the art of the S.W. Cape), the use of a euphoric drug with the outgroup's material culture, and the use of European glass beads (found in the Putslaagte, TC, EBC and Andriesgrond). The change in ritual objects may also be visible in the shift in decorated or engraved O.E.S. fragments: in all S.W. Cape sites analysed by the writer (see Chapter 3) engraved/decorated O.E.S. was always dominant in pre-1 800 BP units. A last piece of evidence for ritual is the appearance of quartz crystals in UCFL and in LCFL. Wadley (1987, 1989) found quartz crystals at Jubilee Shelter, and on a recent field trip, in the Cedarberg mountains, quartz crystals and a fossil were found together what may have been a ritual seclusion.

So far the writer has alluded to stress without defining it. Once again turning to the psychology literature can benefit our understanding of this phenomenon. It is important to note that when psychologists or sociologists refer to the 'environment' they refer to the individuals social environment (i.e. family, friends, social institutions, etc.), and thus it differs from the natural science's environment. Stress is a "transaction - or a relationship- between the person and the environment that taxes or exceeds the persons resources" and endangers his/her well being (Atkinson *et al.* 1985:460). The individuals cognitive appraisal of the situation and his/her resources for coping with that situation is related to the outcome that situation/stressor has on the individual. (Atkinson *et al.* 1985). There are three factors involved in the coping of stress: predictability of the stressor, controllability of the stressor, and social support. If there are multiple stressors then the methods of coping become more complicated (Atkinson *et al.* 1985). These three factors must have been relevant to the situation encountered by the Soaqua in the last 1 700 years. Firstly, by widening the resource base to include foods that were more generally available throughout the year would have decreased the cyclic stress feferred to by Laughlin and d'Aquili (1979; discussed below). Secondly, that pottery as well as paintings of domestic stock and of a possible horse (see Manhire 1986, and Jansen van Rijsenn 1980, respectively, for their occurrence) may have been an introjected symbolic attempt of control over the stressors (explained above). Thirdly, by ritual and sharing of stored foods social networks and group identity would be reinforced.

The writer has so far concentrated on the micro-levels of stress. Its relation to the macro-level is, however, very important as the two are interrelated in a dynamic manner. Ecological stress is "any threat to the survival of all or most of the members of a society posed by a decrement in the quantity and quality of basic resources... This decrement could be environmental change or a change in the interaction between the society and the environment" (Laughlin and d' Aquili 1979:280), or between two societies. They continue to say that psychological stress hinders the individual from functioning properly in a society, and is thus different from ecological stress. The function of ritual is to serve as a buffer against psychological stress in time of ecological stress. This results in a change in the socio-economic relations of that society. Whether this change is successful depends on the intrapsychic affects that ecological stress has had on the individual and in the collective actions of that group. The greater the ecological stress, the more lasting the feelings of deprivation (Laughlin and d'Aquili 1979).

One of the main and most effective methods of coping with stress is by group/social support (see Foster 1987; Reynolds 1989; Oatley 1984 for contemporary studies of group support in times of social stress). Laughlin and d'Aquili (1979:281) state: "the pivotal role of ritual in human adaptation is nowhere more evident than in societies under some form of stress." One of the major functions of ritual during periods of stress is to serve as one set of **collective** action alternatives "that operate as buffers between environmental change and potential psychological stress" (Laughlin and d'Aquili 1979:281). Response to these stressors is either assimilation or a resurgence of rituals. Beattie (1964) and Laughlin and d'Aquili (1979) note that these rituals are often changed or modified so that they are congruent with the changed conditions.

"Ritual serves as one set of alternative, collective procedures for the effective response of a group to ecological stress and that it provides a medium for the active expression of the coping response and also provides assurance that the response is effective" (Laughlin and d'Aquili 1979:281). The effectiveness of these rituals is not always given and when viewed as being ineffective one method of coping is to shift the resource base (Laughlin and d'Aquili 1979). But if the resource base is extremely variable, i.e. seasonal, then the "socio-economic diaphysis -that is recursive change into the structure of society- becomes marked and the role of ritual in diaphysis becomes more pronounced...Diaphysis will facilitate the maximization of basic resource ability, social unity and collective action, and the minimization of psychological stress" (Laughlin and d'Aquili 1979:300). In chapter 6 it was shown that the high diversity of plants in the diet of the inhabitants Andriesgrond Cave indicated a plant resource base gathered at different times of the year, i.e. plant food was **not** seasonally restricted. It would thus seem that in the case of the Soaqua, this diaphysis is not so marked after all. However when looking at lithic raw materials (chapter 4) and the faunal analysis (chapter 5) the diaphysis seems in fact to be pronounced: there is a decrease in tortoise mean size in post-1 800 BP units, an increase in micromammals (not microfauna) in the diet, adzes made from MSA/older flakes that had been reworked and adzes with both sides utilized, the use of an outgroups material culture/economy in a ritual context (e.g. sheep in the art, *dagga* with a Dutch clay pipe) and the use of quartz crystals. Thus, "in participating in ritual, individuals are acting in accord with conceived causal relations extant in the universe of their understanding" (Laughlin and d'Aquili 1979:304), and this is the coping strategy, or stress management, found in social support.

Individuals (and groups) go through three stages when faced with a stressful event (Laughlin and d'Aquili 1979; Taylor 1985; Atkinson *et al.* 1985). Firstly, the person denies and represses the stimulus. Secondly, the evidence/stimulus becomes contradictory to the persons intrapsychic defence mechanisms and the evidence is seen as being real. This causes the person to question/challenge previous modes of thought. Thirdly, there is a breakdown of the society (as the individuals cannot function properly and thus affect social relations) or there is a revitalization movement. That is, the effects of ritual behaviours must be seen to be effective if such behaviours are to survive; however, the intensity and duration of the ecological stress is also an important factor (Laughlin and d'Aquili 1979). If there is incongruity between expectations and actuality then traditional ritual will lose its power (Laughlin and d'Aquili 1979). Thus ecological stress appears to be a necessary, but not sufficient, condition for these revitalization movements (Laughlin and d'Aquili 1979). "The type of ecological stress requisite for [these] movement[s] will either be non-cyclic and unexpected (the usual) or of unexpected intensity, frequency and duration "(Laughlin and d'Aquili 1979:314). The writer believes it to be the latter for reasons stated above and below.

Revitalization movements are usually formed in periods of social change (Haralambas 1990; Beattie 1964; Giddens 1989; Laughlin and d'Aquili 1979). Deprivation can be economic, environmental, social, cultural or a combination of these (Haralambas 1990). They occur "where old ways of life have been disrupted, but full assimilation into the new culture has not been achieved" (Beattie 1964:263). Thus, there is ideological change that will be reflected in the material culture. These revitalization movements are also universal: Melanesian cargo cults "(Worsley 1968), *Terra sans mol* movements of S. America, Mohdist movements in Islamic societies, millenial movements in Christian societies (Thrupp 1962) [e.g. Reborn Christianity/Evangelism, Munzer and the German peasant rebellion], Messianic movements among N. American Indians [e.g. the 'ghost dance'] and elsewhere (Linton 1943),... separatist churches among African churches [e.g. African Liberation Theology]" (Laughlin and d'Aquili 1979), the 'Oranje Republic', Mau Mau's, fundamental Judaism, Rev. Jim Jones, Nqomisa and the Xhosa cattle killing, etc. Thus, because of their asexual and acultural similarities they are universal. These movements have two commonalities (Giddens 1989:470). Firstly, there is a "prophet (an inspired leader or teacher)" who draws upon established religious ideas and proclaims the need to revitalize them. Secondly, they often occur where there is an acute change or sudden increase in poverty. "They tend to attract people who have a sense of deprivation as a result of changes, which leads them to abandon earlier acceptance of the *status quo*." (Giddens 1989:470). Among the Soaqua individuals capable of fulfilling the role of a 'prophet' would most probably have been the trance-dancer. It is (s)he who has access to the spirit/mythical world of the Soaqua and (s)he who 'controls' the trance experience and art. Poverty can be economic and social. Deprivation can be a loss of preferred foods, lands, self-worth, a decrease in availability of raw materials (hence an increase in

MSA/older flakes and double sided adzes) and mobility. The actual reutilization of MSA/older lithics and the 'smudging' over art could be attempts by that generation to re-establish links with previous socio-magico-cultural existences. That re-used MSA/older flakes occur (42%) on adzes and that adzes are primarily related to plant food production could be another attempt in which gaining power over part of their subsistence base. That is, ideology is/was reified into the material culture.

An increase in ecological stress will thus result in a change in previous/traditional modes of life:

> It is the deterioration of the community's confidence in the coping efficacy of ritual **(among other aspects of collective behaviour)** and the resultant anomie that creates a condition of extreme susceptibility to alternative modes of coping. These modes may be drawn from a set that includes assimilation into the dominant society [unlikely in the Soaqua's case],...or, rejection of both the old coping alternatives and those of the dominant society, and the introduction or developments of **new coping** mechanisms through a revitalization movement...[that] inevitably encompasses a ritual component that for a time at least re-establishes many of the functions that failed with the demise of the old ritual (Laughlin and d' Aquili 1979:314; my emphasis).

That is, the social and individual stressors placed on the Soaqua by the Khoi pastoralists (and later by burghers) were continuous and strong enough to cause the changes in their socio-econmy as seen in their material culture. The Soaqua would have attempted to lessen the stress by increasing social activities in the form of traditional ritual and gift exchange networks. When these were seen to be ineffective (the Khoi did not move away - and there is no second change in the archaeological record implying that they did move away and thus alleviating the stress) an alternative coping strategy was chosen. The alternative was one of two things: either assimilate or change. Individuals may have been assimilated, but not groups. This would not have resulted in a total change in ideology and material culture; rather, a change in the ritual , and perceptions of symbols in that community Religions, and thus rituals, are dynamic (Laughlin and d' Aquili 1979); and thus it follows that, if rituals invoke symbols, then those symbols to must be dynamic. Social systems are not given; they are historical outcomes of confrontation between agents, and the ways in which these confrontations are negotiated (Moscovici 1976). This new 'religion' would however gradually change over time every generation and always try to maintain effective coping strategies within the community (Laughlin and d'Aquili 1979). To believe that Khoi social relations did not change as a result of contact with the Soaqua would be presumptuous: social relations are reciprocal and thus bilateral.

Because ritual is used to decrease strain/stress and anxiety, and because social change causes strain and anxiety, magico-religious activities must be related to social change (Beattie 1964). If it is then agreed that social change occurred after the arrival of Khoi pastoralists in the SW Cape and this resulted in an increase in stress and an increase in (changed) ritual behaviour; the next question to ask is for how long could a society under such stress last? That is, could stress last over many generations (with changes) and still be effective? Surely if social stress occurred in one generation, then the next generation would be slightly immunized to the stressors. Hence, following generations would become increasingly immunized to these stressors, and thus the need for ritual should decrease. The psychology literature suggests that people can/do become immune to such stressors (see M. Rutter 1985) and this would then put into question the post-1 800 BP social stress hypothesis. However, the literature also indicates that the social group and individual socialisation and coping strategies are some of the main factors in achieving the resilience of stress (Rutter 1985).

Another factor to take into account is if intergroup differences were continuously reinforced. That is, while desensitization/resilience to the conflict/stressor occurs, the transcending social system may reinforce these differences; one of the consequences of this is an increase in intergroup conflict and thus perpetuation of these stressors especially when it is of an unknown intensity, frequency and duration (discussed above). This would give rise to daily uncertainties that would be incorporated into the individual's cognitive processes. Thus, while desensitization /resilience to the nature of the conflict occurs; the root of the conflict still remains. A contemporary example is the incorporation of political differences by children in the townships of South Africa: here they do not play 'cowboys and Indians' or 'cops and robbers', rather 'Inkatha and ANC' and their toys are wooden AK-47 rifles and 'traditional' weapons such as spears. That is, stress is incorporated into game-play. Laughlin and d'Aquili (1979:300) stated: "Diaphysis may literally encompass entire generations... Adults would realize that what one does today may well effect ones chances of survival in 25 years. They realize that the children they provide for today will provide for them in old age (Thomas 1959)." Thus, ritual forms the testing grounds for group socialization, politics, etc. (Laughlin and d' Aquili 1979). Hence, a perpetuation of a means of coping strategies within a social system. "Sometimes the ritualization of social change has implied the rejection, or at least a very selective acceptance, of what the new...world has offered or imposed" (Beattie 1964:261). This can be seen in the art and material culture. The fact that sheep and horses are found in the art strengthens the notion of symbolic association/disassociation that is then reified onto the material culture.

What further affect would ecological stress have on the Soaqua, and how would it be seen? Parkington (1989a:15) analysed art in the SW Cape (without the use of ethnographies, and quite rightfully so):

> Among figures whose sex is clear males outnumbered females 5 or more to 1... This is surely not a literal depiction of a fatally skewed population ratio nor an indication of the contribution of females to the food supply, with the numbers of men to women proportional to their food contributions. Rather, there was a deliberate attempt to emphasize the male figure although the intentions behind such a selection may have included subconscious ones. In similar vein the record shows the male figures can be very large and visually dominating, whereas female figures are smaller.

This pattern is also seen in the subsistence base: animal motifs occur whereas the botanical foods do not (animals are related to male activities) (Parkington 1989a). Thus, the emphasis of males and their role of 'man the hunter' form part of a coherent pattern that inversely corresponds with econimic evidence of the post-1 700 BP archaeological record (Parkington 1989a). Thus, there is an inverse relationship between the evidence and the painting.

> The painted record may deliberately obscure the 'reality' of the economic relations between men and women and deflect attention from their unequal contributions to the overall diet. "Paintings may thus contribute to a general ideology-based exaggeration of the role of meat and meat providers (Parkington 1989a:15-16).

This is further emphasized in that while trance images are frequent, they occur rarely with females. While females do participate in the trance-dances, they are hardly ever shown experiencing the trance possession (Parkington 1989a).

Why would men invert the economic relations apart from to exaggerate the role of 'man the hunter'? As mentioned earlier being a member of a group is related to ones self-concept and feelings of self-worth. Thus, if males did not as actively contribute to the economy as females did, then group membership, and group utility, may have caused feelings of low-/ self-worth for males. Part of being a member in a group is in the participation of the group's activities. Thus, by an increase in ritual and male (symbolic) participation may have alleviated feelings of low self-worth or alienation from the groups social relations. When ritual fails the nett result is cultural strangulation. This can be seen in in the historical records (Lichtenstein 1928) that mention by the end of the 18^{th} century there were hardly any Soaqua on the west side of the Olifants River and those that they did meet in this area were destitute.

Does the Andriesgrond art show any of these 'inversions' or signs of trance ? While the frequency of figures are too small to be statistically significant, it appears that males tend to be larger than females and individuals of indeterminate sex. Large bovids do occur in two of the friezes (that dominate the cave wall), i.e. man the hunter. Trance is evident in at least 3 of the 4 friezes. These 3 paintings are also in relatively good states of preservation, and this may indicate that they are more recent. However, determining age of paintings by preservation is problematic, but the writer believes that these 3 paintings are post-1 700 BP. Recent attempts to date rock art by accelerator mass spectrometry may or may not support this hypothesis. For these articles see McDonald *et al.* (1990); Vallados *et al.* (1990); v.d. Merwe *et al* (1987); Lay *et al.* (1990); Hedges (1986); Hedges *et al.* (1989). However, so far any attempt to date the art systematically has been unsuccessful (Anderson 1991).

CONCLUSIONS:

"Paintings were ritual objects located in the domestic context;...they were part of a form of action to preserve threatened values and to maintain social cohesion" (Parkington *et al.* 1986:314). Kalahari ethnographies have shown that trance-experience and paintings are not necessarily related (Parkington *et al.* 1986) Then why paint? Soaqua painted because it was a reaffirmation of the "groups' spiritual and common values" (Parkingtongton *et al* 1986:326). This is a direct result of the incursion of khoi pastoralists (and later colonial farmers) who forced the Soaqua into marginal habitats, actively hunted and killed the Soaqua. They also directly or indirectly caused the Soauqua to widen the subsistence base, decreased the Soaqua's mobility, **and** the Soaqua's coping strategies in dealing with these conditions. These strategies involved an increase of ecological stress that was abated in the form of ritual and other symbolic activities. These social changes could only be dealt with effectively by attempts to revitalize traditional coping methods in a new/changing social system. This is seen in the incorporation of the outgroup's material culture (e.g. Khoi pottery, and burgher stoneware, Dutch clay pipes and European glass beads) into their own ideological and ritual constructs. The writer suggested that it was in the form of introjected symbolic domination. That the outgroup's material culture was used in a domestic context is not denied; however, its relation to the Soaqua's ideology is important and cannot be ignored. Ideologies affect the utilization of material culture in functional and symbolic means. Changes in the one will cause changes in the other. These changes will thus effect the social relations of that group.

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