

23.

THE DIQUIS PETROGLYPHS: DISTRIBUTION, ARCHAEOLOGICAL
CONTEXT AND ICONOGRAPHIC CONTENT

by

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RESUMEN

Una reciente prospección arqueológica en las porciones media y superior de la Cuenca Terraba-Coto Brus en el sureste de Costa Rica ha revelado nueva evidencia relacionada a la asociación de sitios de petroglifos con sitios de habitación y cementerios de los Periodos II (500 a.C. - 600 d.C.) y III (700 d.C. - 1520 d.C.). El presente artículo intenta evaluar los patrones distribucionales de esos sitios, demostrar asociaciones cronológicas y a través de un análisis estilístico de rasgos iconográficos, distinguir categorías de petroglifos. Este estudio desarrolla una base de información y marco de investigación que permita un análisis de los petroglifos en la relación a la aparición e intensificación de sociedades jerárquicas que dominaron este sector Pacífico para varios milenios.

INTRODUCTION

This paper evaluates the associations, distributions and iconographic variation of petrogllyphs within the social context of the evolving Diquís chiefdoms. The known distribution of petrogllyphs within the region is described with reference to archaeological features and sites. The archaeological associations allow dating of the petrogllyphs and suggest possible functions and meanings. An iconographic analysis based on the content and structure of the art form provides a base for comparative studies and for correlations between forms and associations. Ultimately, this data may provide insights into social organization and ideological practice.

Research perspectives and analytical techniques in petrogllyph studies are being constantly refined. Early studies were descriptive inventories with general hypotheses of function and symbolism. Later studies, specifically in Costa Rica, examined distribution, context and iconography in increasing detail. Information on petrogllyph distribution was collected in the Diquís area by Hammet (1967), Murillo (n.d.), and Nakao (1972). On the Costa Rican Atlantic Watershed, Kennedy (1970) focused on distribution and iconography, Snarskis et al. (1975) on iconography, Fonseca and Acuña (this volume) on context and iconography and Fallas, Acuña and Mendoza (1985) on

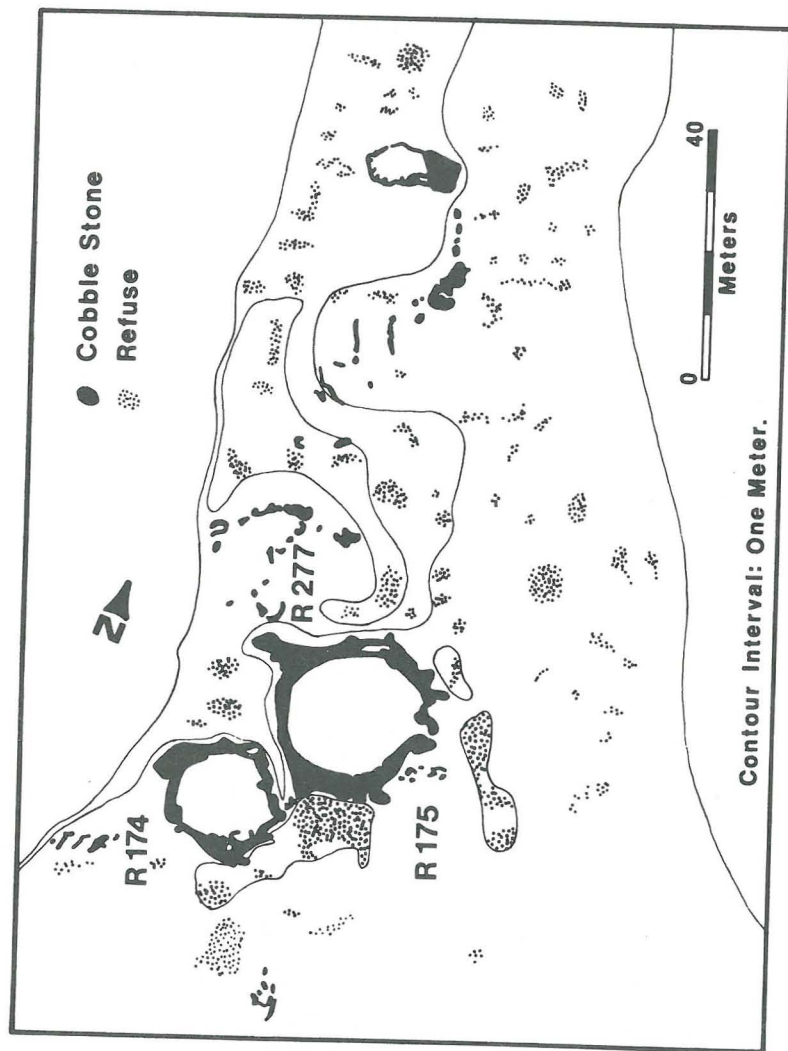


Figure 22.5
Detailed plan of
one house cluster,
Murciélago.

iconographic dating and content. Iconographic dating, content and social context have been developed by Acuña (1985a, 1985b, 1985c). Papers presented at Le XLII Congress International Des Americanistas in Paris in 1976 showed the need for standardized research frameworks and computer analysis (Colombel 1976; Dubelaar 1976; Lorandi 1976; Mills 1976; Sujo 1976).

The work presented here offers significant modifications of previously attempted analytical techniques and research perspectives. A stylistic analysis similar to a linguistic analysis is developed and arithmetical comparisons are used to demonstrate correlations between petroglyph categories and archeological features. The petroglyph iconography is evaluated from diachronic and regional perspectives.

Two archaeological sites peripheral to the study area provide comparative cultural frameworks within which the Diquís petroglyphs can be examined. Barilles in Western Panama (AD 200 - 600) (Linares and Sheets 1980) and Guayabo de Turrialba in Central Costa Rica (AD 1000 - 1500) (Fonseca and Acuña, this volume) are both socio-ceremonial centers with associated petroglyphs. Petroglyphs within these two sites are dated to early (Barilles) and late (Guayabo) periods, respectively. Thus, given the geographical location of the Diquís Valley, it is hypothesized that the Diquís Valley contains petroglyphs from both periods and that changes in petroglyph iconography and context over time reflect changes in social structure and/or ideology.

In the past, dynamics of this art form have been emphasized mostly from local perspectives. A larger cultural perspective should be considered to gain insight into the function and meaning of the Diquís petroglyphs. Indigenous Lower Central American populations were linguistically and culturally related to Northern South America rather than to Mesoamerica. Similarities in petroglyph iconography and religion (specifically myth and ritual) confirm this relationship (Aguilar 1965; Helms 1979; Kennedy 1970; Stone 1962; Bozzoli de Willie 1979, 1982). Hence, ethnographic data referring to petroglyphs in South America are considered as a useful interpretive tool.

Certain problems plague petroglyph research. The primary problem has been reliable dating and definition of the archaeological context. This work focuses specifically on this point, as does that of Fonseca and Acuña (this volume). Other research problems involved surveying inaccessible areas and accurate documentation due to glyph erosion. Iconographic interpretation is, above all, the most difficult. Although the interpretation of prehistoric symbolic systems, their contexts, functions and meanings, are at this point merely hypothetical possibilities, it is precisely their elusive meanings and "thick" possibilities that demand attention. Relevant ethnohistoric and ethnographic data, and careful cross cultural iconographic comparisons may allow insight and tentative interpretation (Zilberg n.d.). Petroglyph iconography provided a

remarkable data base for semiotic studies which could elicit the syntactic and semantic systems which operated in these heirarchical societies (Acuña 1985c). Iconographic material has proved to be of great value in exploring past cultural systems as shown by Lathrap (1977); Levi-Strauss (1963); Hunt (1977); Linares (1977), and more recently Schele and Miller (1986) among many others.

Traditionally petroglyphs have been regarded as interesting artifacts outside the realms of sound archaeological investigation because of their peculiarly problematic nature. This paper emphasizes that in spite of problems in establishing context and in interpretation, petroglyph studies are important components in local and regional archaeological studies, and that as ideofacts they provide invaluable information on ideology, religion and cultural identity.

SURVEY METHODOLOGY

The defined study area was the entire Diquís Region in southern Pacific Costa Rica (see Figure 1; see also, Figure 22.1). Distributional data were collected from the literature, museum reports and by field survey. Initially, a random quadrat survey methodology was used, but this proved to be inefficient for a regional survey. Purposive survey allowed for the collection of the greatest data base in the limited time available. Biases in the sample are due to the inaccessibility of certain areas. Nevertheless, the sample is considered to contain a substantial variation of petroglyphs from which a model may be developed to help describe and explain trends in distribution, style and context.

For this analysis, the Diquís region has been divided into three major river basins (ecological zones) in order to evaluate petroglyph distribution and relate it to settlement patterns (Figure 23.1). Each micro-region offers unique information on context, function and symbolism. These micro-regions are Section 1, the middle slopes of the Talamanca above the Terraba-Coto Brus Valley; Section 2, the Central Valley, both in the Province of Puntarenas; and Section 3, the General Valley in the Province of San José. No information exists for other parts of the valley, namely the Fila Costera, the Osa Peninsula and the Gulf of Panama Peninsula.

DISTRIBUTION OF PETROGLYPHS

Sixty petroglyphs have been documented in the region (Figure 23.1). They are scattered along the primary and secondary drainage systems at altitudes ranging from 175-1010m. Sixty five percent occur in clusters containing two to five petroglyphs. Stone (1966) reported a scattered distribution with two areas of concentration, one at Quizzará, documented in this report, and the other at Ujarras, which was not located during this survey. With further investigation, the overall density of petroglyphs may approach the high density which is documented for the

Reventazon Valley (Kennedy 1970).

Sector 1: The Middle Talamanca Slopes above the Terraba-Coto Brus Valley

Fifteen petroglyphs (25% of the sample) are located in this region, of which two (15%) are within the Coto-Brus Valley. Forty percent are found near primary drainages and sixty percent near secondary drainages. Only one cluster is documented, and it contains four petroglyphs.

Sector 2: The Central Valley

The Central Valley contains 43% of the sample, of which 27% occur above the valley floor. Over 6% are close to primary drainages and the remainder are close to secondary or tertiary drainages. They are evenly distributed within the valley and are found in clusters of two to five petroglyphs.

Sector 3: The General Valley

Almost 31% of the sample is found in the General Valley, concentrated between the Chiripo and Peñas Blancas rivers, and the San Pedro and Union rivers. Six petroglyphs are isolated and the remainder occur in three clusters.

ARCHAEOLOGICAL CONTEXT: SITE AND PERIOD ASSOCIATIONS

The prehistory of the Diquís Region is similar to that of western Panama which has been well defined (Linares and Ranere 1980). In both areas there are two broadly defined periods. For Diquís, the hunter-gatherer and early agricultural period (Period II, 500 BC - AD 600) is followed by a period of intensification of populations along the major drainages which culminates in a maize based, fully developed chiefdom by the time of the conquest (Period III, AD 700 - 1520). Drolet (1984a, 1984b, this volume) has described these phases in depth.

Ceramic complexes and architectural features allow for site dating. Period II habitation sites lack stone architecture and are indicated by a surface scatter of ceramics. Burials are suspected to be simple interments within habitations. Period III habitation sites have architectural features such as stone circles, paths and walls. Cemeteries are usually found on hilltops and are covered with flat, round river stones. The internal tomb structure and external architecture are described by Haberland (1961a, 1976) and Drolet (1984a, 1984b, this volume; see also, Figure 22.2).

The most securely dated petroglyph contexts are within socio-ceremonial centers such as Barilles (Linares 1977; Linares and Sheets 1980; Linares et al. 1975) and Guayabo (Gomez et al. 1985; Fonseca and Acuña, this volume). Acuña (1985b) has dated petroglyphs convincingly by iconographic similarities to gold and ceramic design motifs. Architectural and ceramic proximity are necessarily considered as reliable determinants for dating petroglyphs, though synchronicity is recognized as being problematic. Nearby architectural features such as tombs provide the

clearest cultural association. Hence, associations are assumed between petroglyphs and adjacent recognizable features, both architectural and natural, such as tombs, habitational zones and rivers among others. Rivers are considered to be an important association. Petroglyphs have commonly been found in or near rivers, and this association is thought to have cosmological significance (Reichel-Dolmatoff 1971; Toutouri 1978). This implies a certain functional relationship indicated by proximity (see the association of certain petroglyphs with paths and drainages at Guayabo in Fonseca and Acuña, this volume). The limit for a functional or sacred zone was set arbitrarily at 50m as a measure for comparison of archaeological associations within the sample. Indigenous cosmological considerations of time and space, however, would not necessarily limit spiritual power according to proximity.

THE CONTEXT OF PETROGLYPHS

Thirty petroglyphs were assigned period associations. If the surrounding archaeological context was dated to a single period, then the associated petroglyphs were assigned to that period. If the site in which the petroglyph was located was multicomponent, the petroglyph was dated to either/both periods. For many petroglyphs the immediate or local archaeological setting could not be adequately determined and, hence, many of the petroglyphs are not dated or given archeological associations. This is particularly the case with a large number of petroglyphs that are consistently situated by watercourses which were distant from other cultural remains; these are recorded as simply being associated with rivers. Petroglyphs with no apparent associations are termed independent. As Period II habitations and burials are inseparable, petroglyphs associated with Period II ceramic scatters are considered to be associated with both habitations and burials. In some cases, petroglyphs were situated close to both Period III cemeteries and habitations and so were recorded as being associated with both. Only two petroglyphs were found related with stone pathways, both dated to Period III. The dating of these petroglyphs and the determination of their contexts in a regional setting are somewhat general, but hopefully this initial study will provide a setting for increasingly sophisticated and specific studies. Table 23.1 shows the designated period and archaeological associations for each micro-region.

Sector 1

There are 12 petroglyphs assigned to periods in sector 1. Seven date to Period II, five to Period III and one related to either/both. Of these, one is associated with a cemetery, ten with habitations and another with both.

Sector 2

Ten of these petroglyphs have period contexts. Nine are from Period III and one is related to either/both. Three are associated with cemeteries, one with a residence, three with both and two with cemetery pathways.

Sector 3

There are eight examples, all dating to Period III. Two are related to cemeteries, one with a habitation and five with both.

The available evidence for the Diquís Region suggests these petroglyphs are associated mainly with later periods and reflect the hierarchical organization of chiefdoms and early states (Acuña 1985c; Fonseca and Acuña, this volume). In this study, petroglyphs are mainly Period III artifacts associated with cemeteries. Nevertheless some are Period II artifacts and interestingly, occur in Sectors 1 and 2, which are closer to the site of Barriles. These data suggest the role of monumental, public art within stratified societies as a means of ideological signification or control.

STYLISTIC ANALYSIS

In order to define iconographic content, function and meaning, it is necessary to consider elementary structures, their combinations and their arrangements. The definition of each design complex according to content and structure provides an accurate description and allows for regional and comparative studies. This methodology is based on previous work on petroglyph stylistic analysis (Kennedy 1970; Snarskis et al. 1975). In this study, structural elements are delimited and classified in order to categorize design types which may have conveyed particular messages within the Diquís culture. The attempt, therefore, is to correlate form and function by searching for associations between apparent petroglyph types and their archaeological contexts; a search for meaning in full awareness of the multivocal nature of symbols.

Symbolic elements were initially categorized into two groups: abstract and realistic. The abstract categories were then divided into basic forms, i.e., spirals and variations, circles with central points and variations, circular depressions and linear motifs (Figure 23.2a, b, c). Similarly, the realistic group is divided into anthropomorphic, zoomorphic and phytomorphic categories. Anthropomorphs are divided into bodies, heads, tracks and masks, whereas the zoomorphic elements are divided into mammals, birds, reptiles and their respective tracks (Figure 23.3).

The frequency of each element and other specific information such as the number of spirals in the design, their direction and any variations are included. Often this information is incomplete due to erosion, and is noted as such in Figure 23.4c (II). Tables showing elemental content facilitate detailed analysis and comparisons, and clearly show petroglyph variation within and between categories. The table's essential role is to provide an inventory of symbols, a list of lexicons; the units for the grammatology of an ancient cosmological system.

The composition and structure of the design elements determine the final categorization. The categories are

based on commonalities in elements, organization, style and size. This typology is generally discernable even if the list of elements is incomplete. Six categories (A through F) and various sub-categories have been created (Figure 23.4). The methodology used here follows the logic of that used by Fonseca and Acuña (this volume).

Category A glyphs are composed mainly of spirals and may incorporate other abstract elements. They are divided into three sub-categories: (A.1) simple, (A.2) modified and (A.3) complex.

Category B is composed of simple abstract elements such as curvilinear lines, circles and/or depressions, and is divided into (B.1) simple and (B.2) complex sub-categories.

Category C contains diverse abstract elements and is considered (C.1) simple if the elements are connected by curvilinear lines and (C.2) complex if united as a conglomeration of elements.

Category D petroglyphs are realistic or naturalistic representations. These can be considered as (D^S) portable (small) or (D^L) immovable (large).

Category E petroglyphs are characterized by their monumental nature, and consist of abstract and/or realistic elements. E.1 petroglyphs are structurally organized, unstylized and consist of zoomorphic and abstract elements. E.2 are also structurally organized, but contain anthropomorphic, stylized elements. E.3 examples are randomly organized, unstylized and composed of anthropomorphic, zoomorphic and abstract elements. Those in E.4 are similarly composed but organized and stylized.

Category F is reminiscent of E but unique in the unusual nature of its abstract elements. This last category may be (F.1) structurally organized or (F.2) unorganized.

Before integrating this petroglyph typology into the data on archaeological context it is worth anticipating a critique of the above categorizations. The primary criticism might be that the categories are arbitrary, imposed systems which do not so much recreate valid functional (real) categories as much as express our own (the author's) structural logic and criteria of composition. This issue is similarly problematic for structural analysis of single petroglyphs where etic units are delineated in search for the emic behind the representation. No doubt this presents a dilemma, but it is a surmountable one. Semioticians (and semiologists) have no choice but to seek patterns, carefully and critically. Anthropology's research logic lies in the possibility of understanding other cultures' representations -- other realities. With careful modal analysis, emic categories can be discerned (Lathrap 1983, Washburn 1983). Therefore in an "archaeology of knowledge" one has to believe that it is possible, ultimately, to decode another culture's logic.

AN INTEGRATED ANALYSIS

A model is presented here which seeks to describe and explain relationships among elements, categories and site associations (Figure 23.5). The relationships between the variables could indicate patterns of function and meaning. More explicitly, if a specific symbol or set of symbols (petroglyph categories) were to regularly occur in certain contexts, then it seems likely that a culturally encoded message is being conveyed, whether it be distinct, ambiguous or multiple. The plasticity of the form or presentation of a symbol complicates the analysis; but, if the repertoire of possible meanings and relevant contexts can be elucidated through ethnohistoric and ethnographic research and related to archaeological data, then it may be possible to make meaningful cultural interpretations of petroglyphs.

Certain categories lend themselves quite naturally to functional and symbolic interpretation, as approached by Snarskis et al. (1975), Richards and Bozzolli (1964) and Murillo (n.d.), and Zilberg (n.d.) among others, such as Colombel (1976) and Reichel-Dolmatoff (1971). However, this analysis has focused on presenting a detailed analysis of a complex set of data in order to elucidate some general trends, specifically the variation in category type over time and space. At this level there seems to be a trend, but no clear relationships between categories and their architectural associations emerged that would point to either function or meaning of these proposed symbol sets. At a regional, synchronic level it might be expected that multiple possibilities would obscure meaning rather than generate patterns, but clarify trends in function.

Figure 23.6 shows the quantitative inter-relationships between the variables by presenting the percentages of each category and sub-category in each micro-region, period and site type. Computerization and tabular representation of these data allow one to more clearly notice relationships between the variables (Figures 23.7 and 23.8). For example, Category A.1 is increasingly prevalent towards the northern part of the Diquís region, most frequently dates to Period III (AD 700 - 1520), and is found commonly in cemetery/habitation sites but also with cemeteries, cemetery paths, habitations and rivers as well as independent of cultural associations. C.1 is more common in the south, dates to both periods and is found independently or associated with drainages and habitations. Category E is principally found in the northernmost part of the region, is exclusively found in late contexts (within areas that are only dated Period III) and are always independent or by watercourses. No doubt, as more data accumulate, these relationships will become more clearly defined.

Variation of the temporal and regional distribution and stylistic differences may indicate changes and differences in symbolic and, thus, ideological systems. Petroglyphs in a sacred versus those in a secular area should represent variation in symbolic usage; early versus late contextual associations should illuminate concomitant social and

ideological changes.

Temporal and regional variation as well as constancy in iconography are represented in the different petroglyph design categories (Figure 23.8). For example, Category B has a uniform distribution with a slightly greater occurrence in the Central Valley (Sector 2). Categories D, E and F are found almost exclusively in the Upper General Valley (northernmost part of Sector 3), whereas Category C shows a dramatic increase from south to north. The temporal variation shown in Figure 23.8 is striking. Categories A, B and E are most frequent in late contexts, D and F equally in both contexts, and C tailing off from Period II to III. Overall, petroglyphs are clearly more prevalent in Period III (AD 700 - 1520).

SUMMARY AND CONCLUSIONS

Data collected on the design elements of Diquís petroglyphs are used here in conjunction with regional archaeological data to propose the relevance of petroglyph iconography in an evolving society. Increasing stratification of Diquís chiefdoms is reflected in the evolving petroglyph iconography. One might predict an increase in the use of symbol over time as a means and reflection of social control inherently necessary to a developing hierarchical society. The rising importance and use of this art form would entail the expansion of a specialized artisan class alongside the ruling elite and priesthood, all interdependent yet competing for power locally and regionally. Accordingly, one may expect a proliferation of petroglyph forms and their usage over time. The data seem to support this development. The petroglyph is an intriguing material and ideological focus which provides a context for the record of power plays and the transmission of ideologies through creative personae. It is an image of social process.

The archaeological framework shows increasing settlement densities along the major drainages as well as all the architectural correlates associated with the rise of chiefdoms from a less centralized, more dispersed, egalitarian society. The southern Sector 1 has a high relative density of Period II sites and is peripheral to Barilles, a large socio-ceremonial center from that period. The northern Sector 3 is apparently almost exclusively settled during Period III, while the Central Valley is occupied in both periods, possibly because it is the area of highest agricultural potential. The General Valley (Sector 3) seems to be an area where the higher ranking populations settled in contrast to those populations living in the large maize producing villages along the Terraba-Coto Brus River in the Central Valley (Sector 2) and the dispersed hamlets of the Talamancan region (Sector 1) (Drolet personal communication 1983). The iconographic profile as presented in this paper certainly seems to support this regional analysis.

Specifically, then, the proliferation of petroglyphs in Period III suggests an increasing use of this overt form of symbolism. The expansion of iconographic variation with time lends further weight to the argument. Finally, the increasingly monumental nature, as seen in petroglyphs in category E, mainly found in the region of presumed highest residence status, seems to rather convincingly state the case for the role of the petroglyph as a representation of power in a developing society, and its potential as a significant indicator of social complexity.

Petroglyphs have been frequently ignored in "serious" archaeological research, at least in lower Central America. It is hoped that the ideas presented here will in some way further legitimize their use as key artifacts which may encode the most esoteric knowledge of a past civilization that lingers still.

ACKNOWLEDGEMENTS

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TABLE 23.1

NUMBER () AND PERCENT OF PETROGLYPHS IN EACH SECTOR DATED TO PERIODS II, III, OR II/III AND ASSOCIATIONS WITH CEMETERY, HABITATION, PAVEMENT, CEMETERY/HABITATION AND CEMETERY/PAVEMENT.

	PERIOD			TOTALS	PETROGLYPH CONTEXT					TOTALS
	II	III	II/III		C	H	P	C/H	C/P	
SECTOR 1	(7) 27%	(1) 4%	-	(8) 31%	(1) 3%	(10) 35%	-	(1) 3%	-	(12) 41%
SECTOR 2	-	(9) 35%	(1) 4%	(10) 39%	(3) 11%	(1) 3%	-	(3) 11%	(2) 7%	(9) 32%
SECTOR 3	-	-	(8) 30%	(8) 30%	(2) 7%	(1) 3%	-	(5) 17%	-	(8) 27%
TOTALS	(7) 27%	(10) 39%	(9) 34%	(26) 100%	(6) 21%	(12) 41%	-	(9) 31%	(2) 7%	(29) 100%

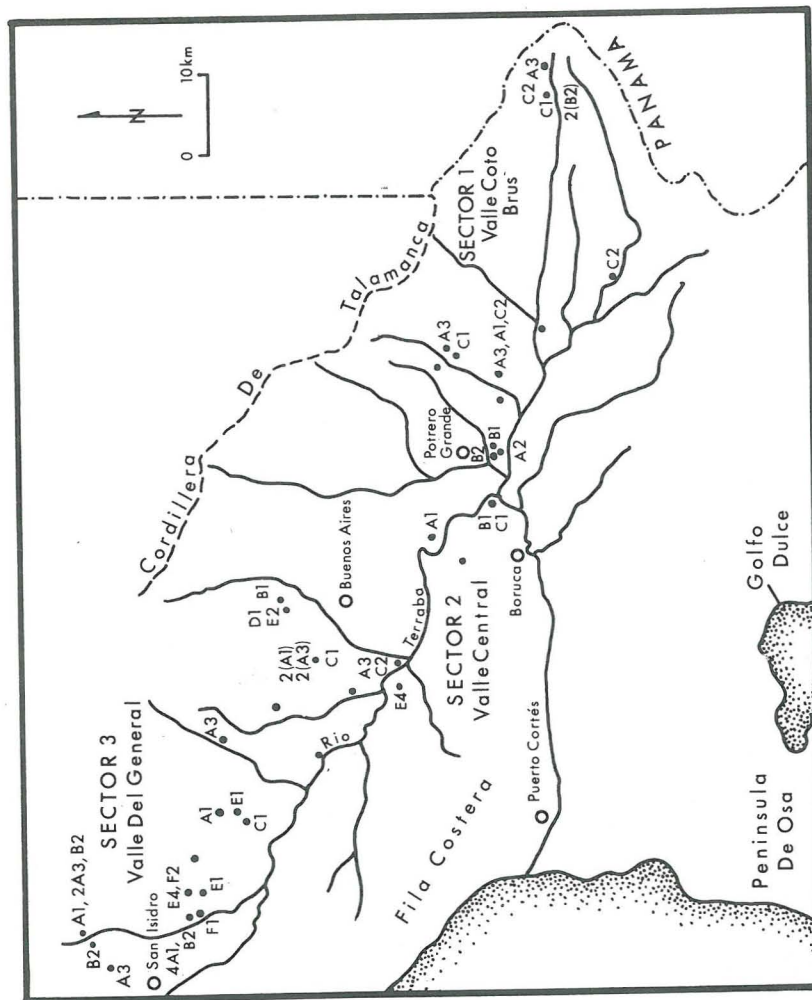


Figure 23.1
Distribution of
petroglyphs in the
Diquis region.

ANALYSIS OF ABSTRACT SYMBOLS							
SITE	CIRCLES WITH POINTS and VARIATIONS				POINTS	LINES	NOTES
P122 LA							II
P144 Cn							
P144 Cn b					2 1 2		
P144 Cn c							II
P144 Cn d					1 1 1		
P206 PP							II
P128 S					4		
P129 LA							
P189 PC a					6		
P189 PC b							II
P189 PC c							II
P189 PC d							
P174 PG							
P185 PG			1				
P178 PG						1	
P214 Mc a					1 2		
P214 Mc b					2 1		
P 64 CdP a							
P64 CdP b		1	1				
P64 CdP c							
P215 Ce							
P202 SC							
P203 SC a							
P203 SC b	6	1	6	1	4		
P207 LP a			3		2		II
P207 LP b							II
P207 LP c			4				II
P207 LP d							II
P207 LP e							II
P84 Cc a							II
P74 Cc b							
P204		1	1				II
P144 Cu a			5		2		II
P144 Cu b							II
SJ205 SP							II
SJ212 SP							II
SJ210 SF a					1		II
SJ210 SF b						4	II
SJ111 Qui							
SJ209 LH	1			1	1		
SJ208 LH a					1		II
SJ 208 LH b							II
SJ 208 LH c							
SJ208 LH d							
SJ208 LH e							
SJ200 Rua1							
SJ20C Rua2							
SJ200 Rub1							II
SJ200 Rub2			1				II
SJ201 Rv							
SJ211 Ob					4 5		

Figure 23.2c Analysis of Abstract Figures: Circles with Points and Variations, Points, and Lines. Numbers indicate the number of elements present.

ANALYSIS OF REALISTIC SYMBOLS											
ANTHROPOMORPHIC											
SITE	FIGURES				HEADS			MASKS PRINTS		NOTES	
											* VARIATIONS EXIST
P62Ce						1					
P64Cdp											
P203Sc1											
P203Sc11b				1				1	1		
P204Db				X	X		X	X	X		II
SJ205Sp	1		1		X		1		X	X	II
SJ210-1a				1							
SJ210-1b		1	1								
SJ111Qui											

ZOOMORPHIC											
SITE	MAMMALS			BIRD REPTILE	PRINTS				PHYTO-MORPHS	NOTES	
											* VARIATIONS EXIST
P62Ce											
P64Cdp							X				
P203Sc1	1										
P203Sc11b											
P204Db			X	X							
SJ205Sp							X				
SJ210-1a											
SJ210-1b								1			
SJ111Qui					1	3 ^s	8	1	1	1	1

Figure 23.3 Analysis of Realistic Symbols: Anthropomorphic and Zoomorphic. KEY: [X] = Presence of element; Numbers indicate the number of elements present.

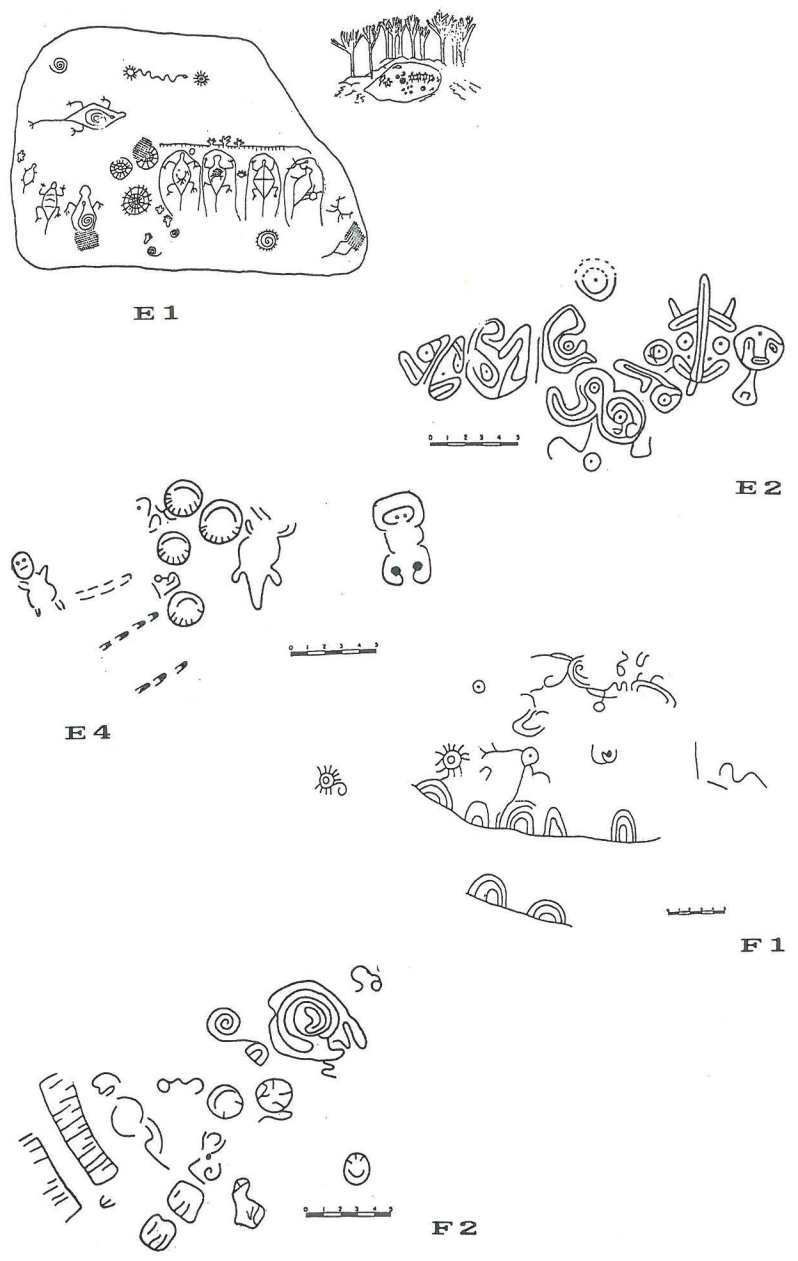
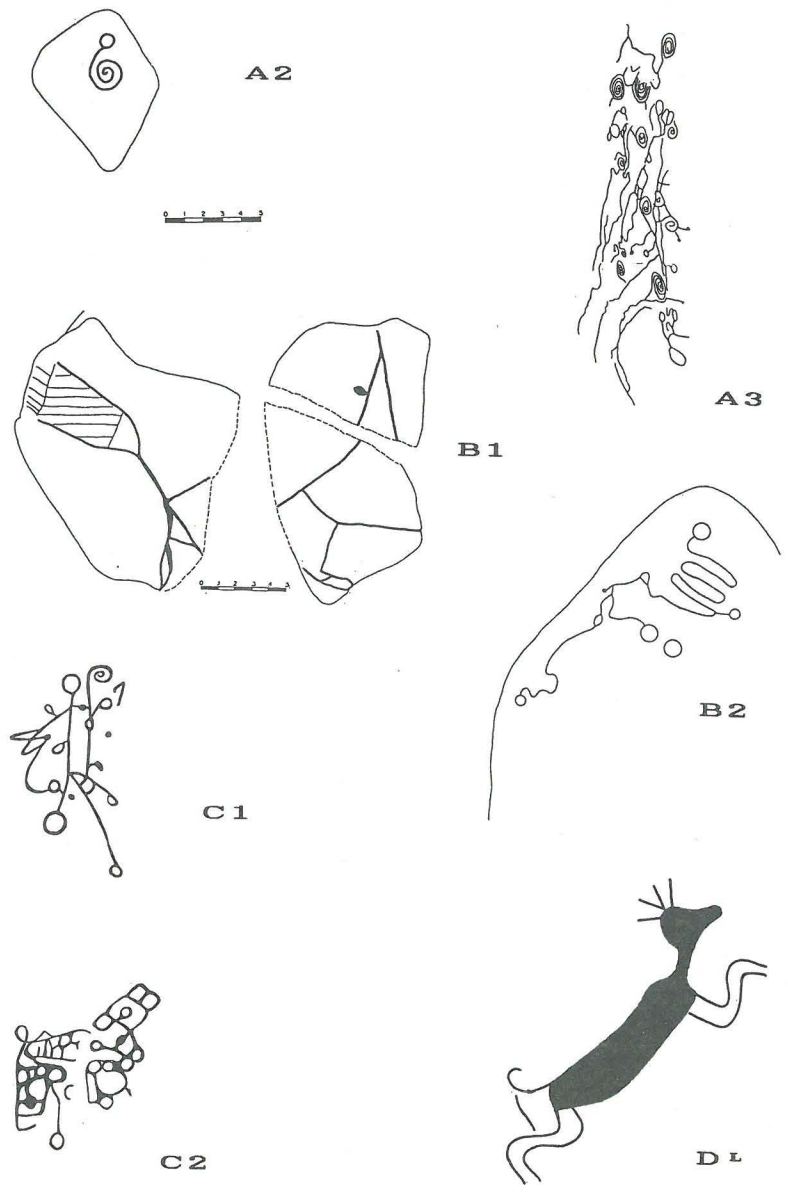
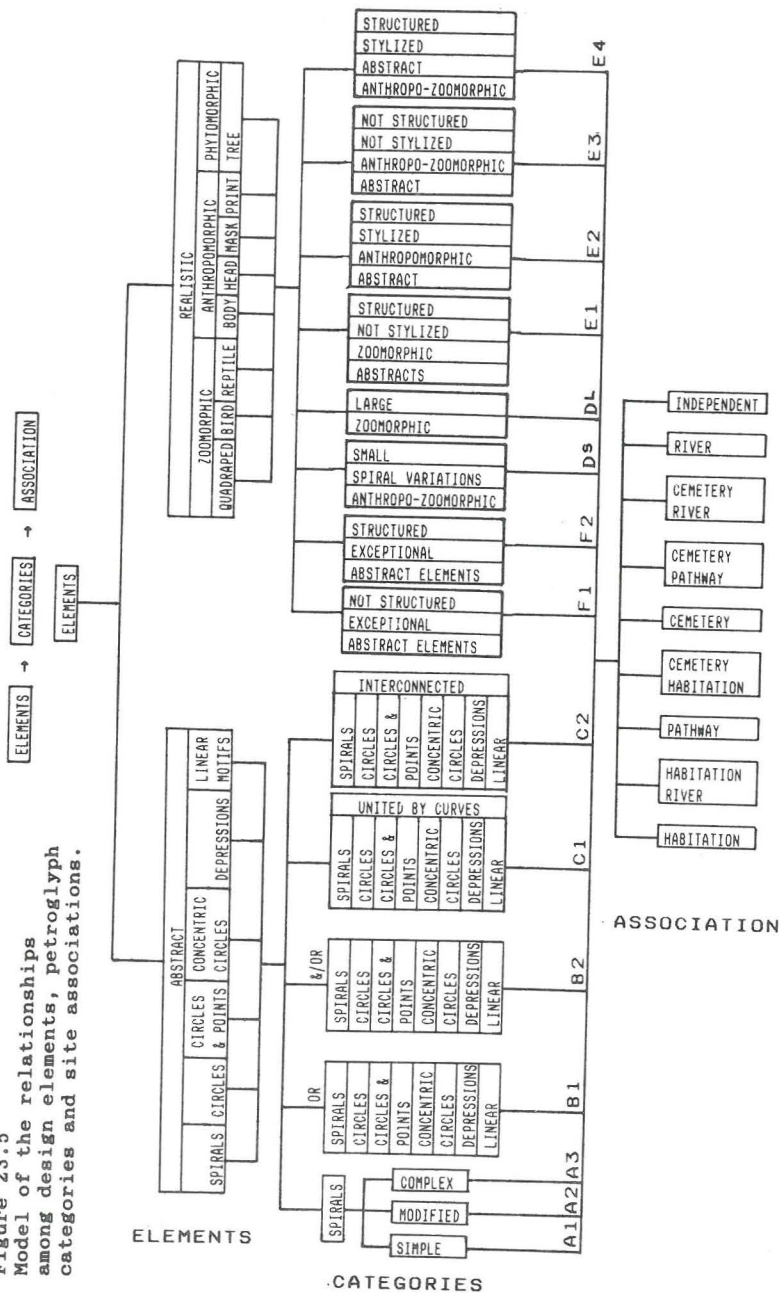


Figure 23.4 Examples of Petroglyph Categories.

Figure 23.5
Model of the relationships
among design elements, petroglyph
categories and site associations.



CATEGORY	TOTAL	SECTOR			PERIOD			PETROGLYPH CONTEXT										
		I	II	III	?	II	III	II/III	C	C/H	C/R	C/P	H	H/R	R	P	I	
A	43.1	5.8	19.6	17.6	21.5	2.0	19.6	-	2.0	7.8	2.0	3.9	5.9	-	7.8	2.0	1.8	
A1	19.6	2.0	5.9	11.7	3.9	2.0	11.7	-	2.0	7.8	-	2.0	2.0	-	2.0	-	3.9	
A2	3.9	-	3.9	-	2.0	-	2.0	-	-	-	-	2.0	2.0	-	2.0	-	-	
A3	19.6	3.9	9.8	5.9	15.7	-	5.9	-	-	-	2.0	-	3.9	-	3.9	2.0	7.8	
B	17.6	3.9	7.8	5.9	5.9	3.9	7.8	-	2.0	3.9	-	-	2.0	3.9	2.0	-	3.9	
B1	5.9	-	5.9	-	2.0	-	3.9	-	2.0	2.0	-	-	-	-	-	-	2.0	
B2	11.8	3.9	2.0	5.9	3.9	3.9	3.9	-	-	2.0	-	-	2.0	3.9	2.0	-	2.0	
C	19.6	11.7	1.9	2.0	3.9	7.8	7.8	-	2.0	2.0	2.0	-	7.8	2.0	-	-	3.9	
C1	11.7	5.9	3.9	2.0	3.9	3.9	3.9	-	-	-	-	-	5.9	-	-	-	3.9	
C2	7.8	5.9	2.0	-	-	3.9	3.9	-	2.0	2.0	2.0	-	2.0	2.0	-	-	-	
D	5.9	-	5.9	-	-	-	2.0	2.0	-	-	-	2.0	2.0	-	-	-	2.0	
E	9.0	-	3.9	5.9	9.8	-	-	-	-	-	-	-	-	-	-	3.9	5.9	
E1	2.0	-	-	2.0	2.0	-	-	-	-	-	-	-	-	-	-	-	2.0	
E2	2.0	-	2.0	-	2.0	-	-	-	-	-	-	-	-	-	-	2.0	-	
E3	2.0	-	-	2.0	2.0	-	-	-	-	-	-	-	-	-	-	-	2.0	
E4	3.9	-	2.0	2.0	3.9	-	-	-	-	-	-	-	-	-	2.0	-	2.0	
F	3.9	-	-	3.9	2.0	-	2.0	2.0	-	-	2.0	-	-	-	-	2.0	-	
F1	2.0	-	-	2.0	-	-	2.0	2.0	-	-	2.0	-	-	-	-	-	-	
F2	2.0	-	-	2.0	2.0	-	-	-	-	-	-	-	-	-	2.0	-	-	
TOTAL PERCENT:		100.0	21.6	43.1	35.3	46.0	13.7	39.2	2.0	5.9	13.7	5.9	5.9	17.6	5.9	15.6	2.0	27.4

Figure 23.6 Petroglyph Categories: Percentages by Sector, Period, and Context.

CONTEXT	PETROGLYPH CATEGORY				
	A.1	A.3	C.1	C.2	C.3
C	2	-	-	2	-
C/H	9	-	-	2	-
C/R	-	2	-	2	-
C/P	2	-	-	-	-
H	2	4	7	2	-
H/R	-	-	-	2	-
R	2	4	-	-	4
P	-	2	-	-	-
I	4	9	4	-	7

Figure 23.7 The association of some petroglyph categories with archaeological site contexts. C = Cemeteries, H = Habitations, R = Rivers, P = Pavements, I = Independent.

SECTOR 1	SECTOR 2	SECTOR 3
A1 00	A1 00000000	A1 0000000000000000
A2	A2 0000	A2
A3 0000	A3 000000000000	A3 00000000
B1	B1 00000000	B1
B2 0000	B2 00	B2 00000000
C1 00000000	C1 0000	C1 00
C2 00000000	C2 00	C2
D	D 00000000	D
E1	E1	E1 00
E2	E2 00	E2
E3	E3	E3 00
E4	E4 00	E4 00
F1	F1	F1 00
F2	F2	F2 00

PERIOD II	PERIOD III	PERIOD II/III
A1 00	A1 0000000000000000	A1
A2	A2 00	A2
A3	A3 00000000	A3
B1	B1 000000	B1
B2 0000	B2 0000	B2
C1	C1 0000	C1
C2	C2 0000	C2
D	D 00	D 00
E1	E1	E1
E2	E2	E2
E3	E3	E3
E4	E4	E4
F1	F1 00	F1 00
F2	F2	F2

Figure 23.8 Tabular representation of petroglyph categories by Sector and by Period.

SECTION VI. ACROSS THE BORDER AND THE HISTORIC PERIOD

INTRODUCTION

Taking the arbitrary boundaries of Costa Rica as the limits for the settlement pattern research summarized in this volume ignores the reality that in the Pacific north Greater Nicoya extends into Nicaragua (Healy 1980; Lange 1984b), while in the south Greater Chiriquí extends into Panama (Drolet 1980, 1983, 1984). On the Atlantic, cultural communalities seem to extend from Honduras to Panama or even Colombia (Healy 1984, Snarskis 1984, Bray 1984, Willey 1984).

As noted previously for Greater Nicoya, there is a sharp contrast between coastal settlement patterns in Costa Rica and Nicaragua. Nicaragua has lakes instead of a central cordillera, and there is a different pattern of development from Zoned Bichrome to Historic Period times. The islands in the middle of Lake Nicaragua appear to have been occupied from at least 1500 BC on, and the lacustrine shorelines appear to have been densely settled, while the Pacific coast was only lightly populated. We are delighted to be able to include a summary of Wolfgang Haberland's Ometepe Island research (Chapter 25).

One of the great gaps in our settlement data is still the lack of confirmed Contact Period sites, and Suzanne Abel-Vidor (Chapter 26) has provided an overview of the potential utility (and limits) of the documentary resources.