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CONTESTED IMAGES OF PLACE IN A MULTICULTURAL CONTEXT

THE AHUPUA'A OF KANAIO AND A'UAHI, MAUI

A DISSERTATION SUBMITTED TO THE GRADUATE DIVISION OF THE UNIVERSITY OF HAWAII IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF

DOCTOR OF PHILOSOPHY

IN

GEOGRAPHY

MAY 1995

By
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The people of Hawaii were thus a lowly people, one serving another, giving gifts to each other in the old days. To be arrogant was a terrible thing. But at the coming in of American education the humble time passed and a period of arrogance began which has persisted until now. But as for us, we regret the loss of our former ways. (Kepelino 1856 in Beckwith 1931:150)

DEDICATION

to

All the people of Kanaio and A'uahi

for their efforts in making this work possible

and to

Krissie

who made it all seem worthwhile

ACKNOWLEDGEMENTS

Discovering and learning about Kanaio and A'uahi would have been impossible without the assistance of a number of people, all of whom assisted cheerfully despite constant impositions on their time. Here on O'ahu the assistance of certain agencies, in particular State Historic Sites and Forestry Divisions of the Department of Land and Natural Resources, the Geothermal Office of the Department of Business, Economic Development and Tourism, the State Archives, and the State Tax Office were of great assistance. A special thanks goes to Ms. Carol Silva, who was always willing to help in translating or explaining Hawaiian terms that eluded my comprehension. On Maui the various County agencies, especially Planning and Tax Offices were of assistance. Two non-profit groups were major sources of research material, interest, and assistance, specifically the Bernice P. Bishop Museum Ethnology staff, in particular Mrs. Patricia Bacon and Ms. Elaine Jourdane, and the staff of the Maui Historical Society (Bailey House), particularly Elizabeth Anderson and most particularly Keali'i Reischel.

To Marvin and Ann Miura family in Keokea, my warmest thanks for opening your house and ears to my various travails in the field. Ms. E. Shimakawa has my thanks for her support during the drawn-out process of writing up the drafts of the dissertation. Without all of your assistance, interest, and support this would have never reached conclusion.

This research reflects the time and interest of all the residents of Kanaio and the 'Ulupalakua Ranch *'ohana*, without whom there would be no dissertation. While any mistakes are my failings, any and all value to this document is due entirely to their effort. I am positive that I will be leaving people out of this list but be assured it is not intentional. A special *aroha* to those members of the community who have been willing to suffer through the drafts of this tome and provide criticisms and support: the Francis Santiago family, Yolanda and Margaret Uwekoolani, Jeff Munoz, Stuart Rice, Pardee and Sumner Erdman. Thank you for providing suggestions that could only improve the product. To others in Kanaio and A'uahi, particularly Everett and Adeline Mendez, Richard and Marina Brush, Fred Horvath, Russell Poaipuni, Bob Palm, Ben Mendez Sr., Bully DePonte, Marvin and Patty Smith, Stan and Prima, Ed Valletta, and Edward Uwekoolani, all my thanks. I hope you find the work interesting and useful in the future as a tool in discussions with various outside groups seeking to change Kanaio and A'uahi. All of you were always gracious with your time, interest and assistance, even when I was pounding around and asking inane questions during Christmas holidays and your rare days off. The concept of *aroha* is still alive and well in Kanaio. Thank you.

To the *'ohana* which I am fortunate to be linked to, my thanks. Especially to my parents,

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Finally, I must acknowledge the efforts of a very patient committee which has suffered through years of wondering where I had disappeared to, especially to Dr. M. Chapman, who was able to disentangle me from the various bureaucratic snags I invariably created for myself. Though unusual, it also seems appropriate to thank the place, especially A'uahi, for first having brought to it and then educating a *haole* about its *mana*. Places like A'uahi have their own existence, and the invitation made for the most troublefree fieldwork possible.

Any mistakes and all interpretations are entirely the responsibility of the author.

NOTES ON CONVENTIONS

Orthography

The orthography used in this thesis follows that of Pukui and Elbert (1964). However this has not been employed on field information from the Chapman archives (1965-75) or direct quotations, which are left in their original form. As definition or provenance is unknown for most specific Kanaio-A'uahi place names they have also been left unmodified.

ABSTRACT

This study attempts to address an issue for long central to the geographic examination of the cultural landscape--the need for flexible theoretical constructs to incorporate the richness and diversity typical of cultural landscapes; and the inability of much of contemporary theory through its apparent mutual exclusivity, to meet these intellectual demands. This suggests the value of multidisciplinary projects to provide such scholarly diversity, but in most research situations this is not considered feasible by geographers or by social scientists in general.

An alternative is to alter the process under which theoretical constructs operate. The theory of grounded process (more usually, 'grounded theory') became an organizing structure under which conceptual constructs of diverse theoretical origin were deployed to understand a particular place. Grounded process and a series of intellectual constructs were assessed for how well they could apprehend both continuity and change in cultural landscapes over time. In particular, this research focussed on two traditional and adjacent land units (*ahupua'a*) of Kanaio and A'uahi on the island of Maui in Hawai'i, from 1400 A.D. until the present.

Primary enquiries were conducted intermittently over a three year period, 1991-1993, and information collected from numerous sources, especially several rich and unpublished archival ones. An archaeological inventory was undertaken of surface materials, contemporary land use recorded, and indepth interviews conducted with residents and other knowledgable persons. A personal diary was kept throughout the field work in Kanaio-A'uahi. The analysis of such a corpus of detailed material through the intellectual prisms of various theoretical constructs was the focus of the third and fourth chapters.

In prehistoric Hawai'i, land units (*ahupua'a*) such as Kanaio and A'uahi were viewed as separate and unique areas that over generations, each evolved into distinct cultural landscapes as distillations of resident world view. These cultural landscapes incorporated human modifications, the geomantic placement of religious structures, the location and underlying image of named places and, central to the process of ongoing integration and incorporation, a series of stories that linked all these attributes into a cohesive cultural image of a particular place (or land unit). As in other communities, dramatic shifts in the cultural landscapes of Kanaio and A'uahi occurred with the impacts of european contact and rapid socioeconomic change.

For different reasons, by the 1960s, permanent residents had abandoned these two land units for the first time in over 400 years. By the 1990s, there existed in these land units a complex interaction among several interested groups of residents, each of whom had their own clear and unique image of that particular place--in other words, a series of cultural

landscapes of Kanaio and A'uahi operating simultaneously and within a single cultural setting.

All too frequently, past discussions of cultural landscape in human geography have been generalizations that imply a commonality of purpose and shared imagery. These reflected a stereotypic view of culture as a monolithic construct, all members of whom share a common world view, beliefs, values, and collective goals. Increasingly, geographers have become dissatisfied with the simplicity of this cultural model and its inability to apprehend the complexity of real-world problems. This study has applied a multiconceptual approach to interpreting complex, and competitive, cultural landscapes held by various groups for Kanaio and A'uahi. The success of an analytical procedure based on the theory of grounded process demonstrates that a scholarly alternative exists to multidisciplinary research--a strategy that may achieve many of the same goals, but only with significantly greater costs in time and professional personnel.

TABLE OF CONTENTS

ACKNOWLEDGEMENTS v
ORTHOGRAPHY vii
ABSTRACT viii
LIST OF TABLES xiv
LIST OF FIGURES xv
LIST OF MAPS xvi
LIST OF PLATES xvii

CHAPTER 1
INTRODUCTION TO AN ARGUMENT 1
Techniques of Learning 6
The Place 11
Physical Environments of Kanaio and A'uahi 16
The Human-Environment Dialog 20
Forest, Mist, and Rainfall 23

CHAPTER 2
APPROACHES TO CULTURAL GEOGRAPHY 34
Theory of Grounded Process 39
The Research Dialog in Kanaio-A'uahi 44
Initial Research 46
First Concept: Human-Environment Relationships 50
Second Concept: Cognitive Maps 55
Third Concept: Conceptual Landscapes 56
Fourth Concept: Landscape as Signifier 59
Intermediate Phases of Field Research 60
Fifth Concept: Experiential Landscapes 61
Sixth Concept: Time-Space Allocation 65
Final Phases of Field Research 66

CHAPTER 3
PAST CULTURAL LANDSCAPES IN KANAIO-AUAHI 70
The Development of Religious Centers 72
Archaeological Survey 73
Elevation-Specific Comparisons 78
From the Coast to 900 Foot Elevation 79
900 to 1200 Foot Elevation 82
1200 to 1500 Foot Elevation 83
1500 to 1800 Foot Elevation 83
1800 to 2100 Foot Elevation 84
2100 to 4000 Foot Elevation 85
Above 4000 Feet 86
General Comparative Summary 86
Early Use of Kanaio and A'uahi 88
Oral Tradition 89
Summary: 1300 A.D. 90
Kanaio and A'uahi In 1750 A.D. 91
Oral Tradition 93
The Nineteenth Century and Change 94
Kanaio in 1900. 105
Non-Documentary Evidence 107

CHAPTER 4
THE ELEPHANT'S PARTS: CONTEMPORARY CULTURAL
LANDSCAPES OF KANAIO-AUAHI SINCE 1940 110
Contemporary Images of Place. 111
Lower Kanaio and the Hawaiian Cultural Landscape. 118
Kanaio as Home 119
Kanaio as Spiritual Center 123
Kanaio as Ritual Place 124
Kanaio as Frontier 125
The Upper Kanaio Community 125
The Ranching Community and Kanaio-A'uahi 131
Ranches and Kanaio 135
The Outsiders: the Bureaucracies and the Empty Quarter 137

Tourism in Southeast Maui 137
Tourist Imagery and Kanaio-A'uahi 143
The State of Hawaii and the Empty Quarter 152
The Uwekoolani's and the Homestead Issue 153
The Implications of the Geothermal Powerline 156
Competing Images in the Near Future 165
Internal Pressures of Land Access 171
Concluding Views of the Cultural Landscapes of Kanaio-A'uahi . . 173
Fallacy of the Concept of Shared Use 173
Physical Landscapes as Passive Force 174
Loss of the Empty Quarter 175
Impact of the *moku* on the Cultural Landscape 176

CHAPTER 5
GROUNDED PROCESS AND CULTURAL LANDSCAPES 177
Genres de Vie 178
First Concept: Human-Environment Relationships 179
Second Concept: Cognitive Maps 181
Third Concept: Conceptual Landscapes 182
Fourth Concept: Landscape as Signifier 183
Fifth Concept: Experiential Landscapes 184
Sixth Concept: Time-Space Allocation 185
Grounded Process 186
Future Examination of the Elephant 188

APPENDIX I
THE CULTURAL LANDSCAPES OF THE PAST IN
KANAIO-AUAHI 191
The Physical Evidence 191
Location Code 192
Religious Sites 192
Habitation Sites 207
Agricultural Sites 226
General Legendary Cites 228
Legendary Sites 228
Burial Sites 233

Other Sites 235
Boundary Walls 241

APPENDIX II
EXPERIENTIAL FIELD NOTES 262
Initial Field Session, Summer 1990 262
Second Field Session, Summer 1991 264
Third Field Session, Winter 1991-1992 270
Fourth Field Session, Summer 1992 275

APPENDIX III
THE NEW AGE BELIEF SYSTEM 277
The Development of the Black Hat Temple 281
Ho'omanamana in Kanaio 282
The Bock Saga and Kanaio 290

APPENDIX IV
PLACE NAMES FOR KANAIO-AUAHI 294

GLOSSARY 331

REFERENCES 333

LIST OF TABLES

2.1: Fieldwork Schedule 48
3.1: Archaeological Sites by *Ahupua'a* and Elevation 80
4.1: Real Estate Values for Maui as of 7/31/94 139

LIST OF FIGURES

2.1: Process of Grounded Theory. 40
2.2: Conceptual Summary 52
2.3: Grounded Theory Development 62
3.1: Chronology from 1750-1790 95
3.2: Land Commission Awards in Kanaio 98
3.3: Place Names, Owners and Witnesses from
L.C.A. Testimony 101
3.4: Stated Use of L.C.A. Lands in Kanaio, 1849 102
4.1: Images of Kanaio-A'uahi 112
4.2: Advertising Image of Hawai'i as Paradise 150

LIST OF MAPS

1.1: Area of Study 2
1.2: Lower A'uahi-Kanaio Vegetation Patterns 24
1.3: Upper Kanaio Vegetation Patterns 25
1.4: Lower Kanaio Vegetation Patterns 26
1.5: Upper Kanaio-Kalo'i Vegetation Patterns 27
1.6: Lower Kanaio-Kalo'i Vegetation Patterns 28
3.1: A'uahi in 1750 A.D. 74
3.2: Kanaio in 1750 A.D. 75
3.3: Kanaio-Kalo'i in 1750 A.D. 76
4.1: Contemporary A'uahi-Kanaio 117
(In Appendix)
A.I.1: A'uahi Archaeological Sites 193
A.I.2: Lower Kanaio Archaeological Sites 194
A.I.3: Upper Kanaio Archaeological Sites 195
A.I.4: Lower Kanaio-Kalo'i Archaeological Sites 196
A.I.5: Site Map I: Sites 217, 123, 216, 127 and 233 245
A.I.6: Site Map II: Sites 121, 628, 249, 250 and 242 246
A.I.7: Site Map III: Sites 220, 221 and 224 247
A.I.8: Site Map IV: Sites 107, 125, 257 and 263 248
A.I.9: Site Map V: Sites 208, 226, 228, 623 and 626 249
A.I.10: Site Map VI: Sites 126 and 324 250
A.I.11: Site Map VII: Sites 252 and 266 251
A.I.12: Site Map VIII: Sites 239, 240, 241, 246 and 247 252
A.I.13: Site Map IX: Site 238 253
A.I.14: Site Map X: Site 225 254
A.I.15: Site Map XI: Site 122 255
A.I.16: Site Map XII: Site 204 mauka 256
A.I.17: Site Map XIII: Sites 236, 237, 320 and 627 257
A.I.18: Site Map XIV: Sites 103 and 251 258
A.I.19: Site Map XV: Site 204 makai 259
A.I.20: Site Map XVI: Site 229 mauka 260
A.I.21: Site Map XVII: Site 229 makai 261

LIST OF PLATES

1.1: Kanaio Panorama from Pu'u Mahoe 4
1.2: A'uahi Panorama from Kanaio 5
1.3: Lower A'uahi 9
1.4: Small *wiliwili kipuka* in Kanaio 10
1.5: Central A'uahi 12
1.6: *Kipuka* in east Kanaio 13
1.7: Lower Kanaio town 14
1.8: The coastal pattern 17
1.9: Upper Kanaio 18
4.1: The Specific 141
4.2: Contested Land 142
4.3: The Images of Tourism 145
4.4: Tourist Images of southeast Maui 146
4.5: Contrasts of Tourism and Kanaio 147

CHAPTER 1

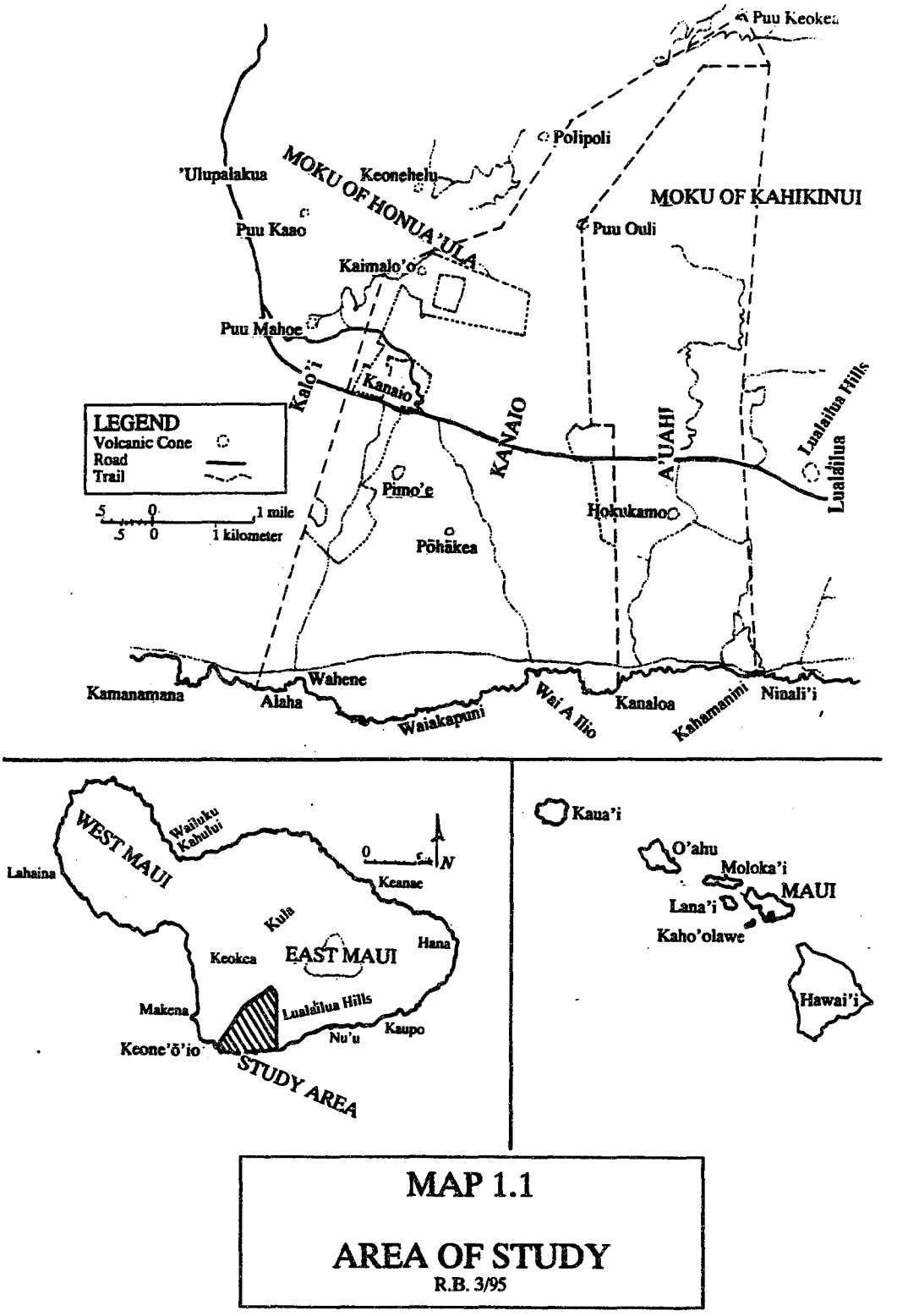
INTRODUCTION TO AN ARGUMENT

The basic premise of this study is that a multidisciplinary research project is possible without involving specialists drawn from various disciplines. With sufficient background, it is possible to apply key concepts from a number of theoretical approaches to a specific regional question in cultural geography and obtain a more comprehensive analysis of the cultural landscapes over time than could be obtained from within a single theoretical framework.

The key to integrating the concepts from these diverse theoretical approaches is the use of grounded process. As this process depends on the fieldwork portion of the research it lacks the rigid preconditions which frequently cripple more traditional projects based on the scientific method. Grounded process encourages a diversity of concepts and methodologies, based on an ability to build on a rich, comprehensive and integrated description of field enquiries and experiences.

The area chosen for study is on the southern slope of Haleakalā, the mountain which makes up East Maui in the Hawaiian Island chain (map 1.1). Specifically, the area is the two adjoining *ahupua'a* (traditional land units) of Kanaio and A'uahi, bounded land divisions which have existed from as early as the 15th century. These units were selected as they are located on either side of the boundary between two of the *moku* (the largest traditional land unit), each of which would contain many *ahupua'a* that defined polities in late precontact Hawai'i. Kanaio is the eastern-most *ahupua'a* in the *moku* of Honua'ula, while A'uahi is usually seen as the *ahupua'a* on the western boundary of the *moku* of Kahikinui. These two *ahupua'a* share many physiographic features, yet even upon initial examination show distinctive differences in terms of vegetation, landforms, moisture regimes, number and size of recent lava flows.

Most pertinent to a cultural landscape analysis is the difference in historic human habitation. There are no extant records from the 1840s and later indicating any permanent human occupation of A'uahi, and even at present, apart from one rental household, the *ahupua'a* is unoccupied except for cattle and goats. In contrast, Kanaio was continually occupied through the historic period, with Land Commission Award claims during the Great Māhele and subsequent land acquisitions. Permanent occupation continued in Kanaio town



MAP 1.1

AREA OF STUDY

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until the early 1960's. However, with demands for wage jobs and the difficulty of transportation, as this is the most isolated area of Maui, the last occupants moved away and until the mid1970s Kanaio town became largely a ghost town of part-time occupants. At that time several individuals moved back to Kanaio and by 1993 a diverse community had been reestablished, containing a mix of traditional land-holding families in the *makai* (lower slope, towards the ocean) section of the town, and recent *haole* (middle-class Anglo) migrants in the *mauka* (upper slope, towards the heights) section.

This research has two goals. The first is to test the validity of applying a variety of concepts taken from diverse theoretical approaches to a research question focussed on a specific place. In this case, it was changes in cultural landscapes over the last 400 years in the *ahupua'a* of Kanaio and A'uahi. By holding as a constant both the research focus and a particular place, the utility of concepts often seen as competitive could be evaluated for their ability to help develop an adequate description of the changing place that is Kanaio- A'uahi.

The second goal is more explicitly regional: to develop a detailed analysis of changes in the cultural landscapes of Kanaio- A'uahi and examine the varied cultural landscapes that exist today. In Hawai'i in general, and Maui in particular, land has always meant power (Cooper and Daws 1985). In contemporary Hawai'i various movements, especially those demanding some form of sovereignty relationship with the United States, are focused on the issue of land control.

Kanaio and A'uahi are at the center of one of these controversies, with competing interests including but not limited to:

The two major landowners, the State of Hawaii and 'Ulupalakua Ranch;

Other external interest groups, such as the Nature Conservancy;

Small scale ranching interests, specifically the LLL Ranch;

Local residents who claim genealogical and land claims back to the Kamehamehas;

Haole residents who claim spiritual interest in the land;

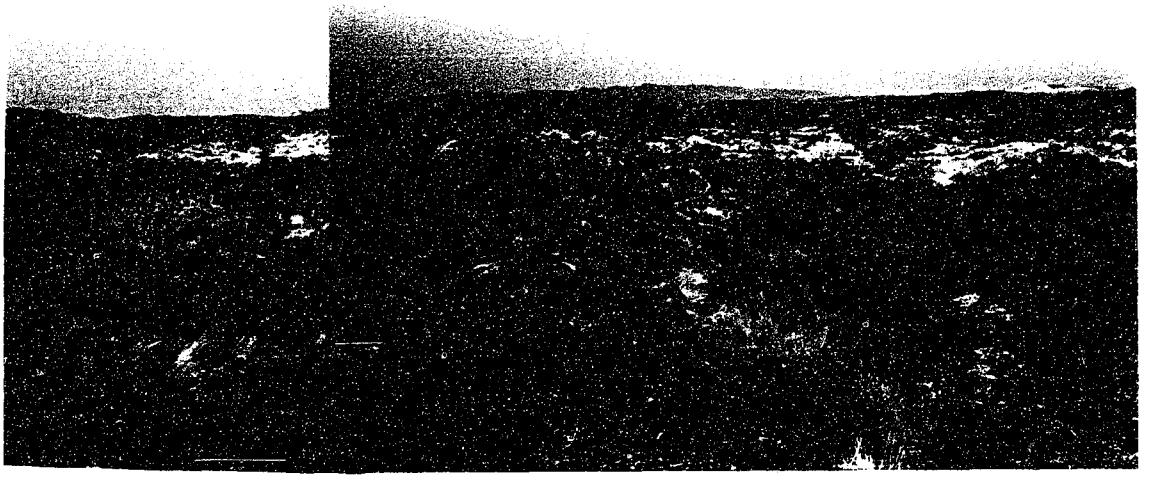
Recent *haole* from New Age religious groups, based in other sections of Maui but who value and use this area for rituals; and

Tourists passing through the area from east to west on the road from Hāna to Kula.

The second major goal, then, is to examine how the beliefs, values, and perceptions of these diverse groups have led to the complex cultural landscapes that make up contemporary Kanaio and A'uahi.

Panorama of west central Kanaio from Pu'u Mahoe.
The vegetation line in the center is the edge of the recent flow.

1.1. Continuation of panorama of lower west Kanaio from Pu'u Mahoe.
Pu'u Pōhākea is obscured behind Pu'u Pimo'e.



Lower Kanaio Homestead property in foreground.
Ahupua'a boundary with A'uahi is the ridge at center, A'uahi to left.

1.2 Lower A'uahi from the Kanaio *ahupua'a* boundary.
Taken from the same location as above.

Techniques of Learning

Several factors constrained this field research. The major one was the inability to spend extended periods of time in the field (6-12 months) due to both cost and professional commitments. This meant that, from the outset, the more conventional sequence of archival-field-archival research had to be divided into a number of shorter phases (table 2.1). In many ways this turned out to be an advantage, especially when tied to the method of grounded process, which is very flexible in the sequence of information to be collected. It also facilitated short-term investigation of archival resources when questions arose during field enquiries, a situation that occurred several times during both the archaeological survey and interview phases.

An advantage to such a fragmented field schedule was that it allowed for written drafts to be brought back to Kanaio residents at the next phase of primary investigations. Consequently, immediate feedback from interested residents was possible--a key component of the project, since it showed good faith and a willingness to share information on the part of the researcher and addressed frequent criticism about outside investigators, a situation frequently lacking in the past. This triggered more interest in the project among members of the Kanaio- A'uahi community which in turn made further fieldwork, especially interviews, less difficult and more efficient.

The second constraint, in contrast, was relatively minor, considering that the research required persistent travel between the islands of O'ahu and Maui. Pertinent archival materials are divided fairly evenly between repositories on the two islands, with much critical material located on O'ahu. One of the few frustrations to such a commuter approach to a major research project was the inability to track down some rare archival material, especially early church records rumored to contain early census data for Kanaio.

Initial interest in Maui developed out of a sequence of positive and negative events, which by Kanaio standards would not be considered accidental, but designed. Initially, this research on changing cultural landscapes was planned for the Balade region of New Caledonia, but the collapse of funding possibilities placed the project in jeopardy. As a result, an alternative site was sought, one that had a good archival record or depth of oral tradition as well as a relatively untouched landscape able to reflect preEuropean patterns of use. In addition, the existing population should include descendants of preEuropean times to allow changing patterns of cultural landscapes to be examined with some prospect of continuity.

Earlier, during the summer of 1990, while conducting a field school for Chaminade University at Keone'ō'io Historic Site, to map a scatter of residential sites on the shore at Keone'ō'io (also called La Perouse), interest in the relationship of this village complex with

surrounding areas led to a short trip *mauka* to Kanaio. In casual conversation with several residents and roadside observations, it became apparent that the area offered significant possibilities for a detailed and long-term archaeological study. This was shelved, to pursue field study in New Caledonia, but with problems of funding interest in Kanaio increased. In addition, several close contacts on Maui had expressed concern about a plan by the State of Hawaii to install a geothermal powerline over this section of the island without conducting research on possible impacts. Fear that a pristine area might be destroyed due to the needs of people on other islands in the State led to several requests for me to continue research in the area between Keone'ō'io (to the west) and Nu'u (to the east).

As a result, a short reconnaissance of the area was conducted to both determine the feasibility of field research in an area roughly five times greater than was planned in New Caledonia and examine the availability of archival materials. Having previously conducted research in southeast Maui, at Mākena, initial archival collection was fairly effortless and field reconnaissance reaffirmed the richness and largely undisturbed nature of much of both *ahupua'a*. But the major breakthrough came with the assistance of Mrs. Patricia Bacon and Ms. Elaine Jourdane of the department of ethnology at the Bishop Museum, who brought to my attention the field enquirires of Peter Chapman conducted in the 1960s. Though this work is occasionally cited in the archaeological literature, only a few short excavation reports have been published. This work was reputed to refer to areas considerably to the east of Kanaio-A'uahi but in fact a review of manuscript materials made it clear that here was an incredibly rich source of oral material directly linked to Kanaio.

The existence of Peter Chapman's research, in particular his interviews with Sam Po, combined with an unpublished manuscript by Elspeth Sterling of sites on Maui, led to the realization that perhaps the depth and quality of historical documentation for Kanaio-A'uahi was far superior to that for almost any other location on Maui if not for Hawai'i in total. Access to these rich and unpublished resources allowed the implementation of a more commuter approach to research. They, along with the great amount of archaeological research done at nearby Mākena-WaiLea, permitted field enquiries to be based on a rich foundation of prior work.

In general, initial field investigations in 1990 were to determine the accuracy of prior work and identify key areas of missing information (table 2.1). In particular, a description of the contemporary Kanaio community became a key goal of this project since existing materials provided superb details of life in the 1910-50 period, some idea of lifestyles around 1700, and little idea of Kanaio in the 1990s.

Before engaging in detailed interviews, increased familiarity with the place was critical. This also provided a convenient way of conducting an archaeological inventory. By becoming familiar with the area from walking all sections, and over the weeks being seen by community members when tramping around and engaging in casual conversation, more familiarity was gained with both the unique features of Kanaio-A'uahi landscapes and the contemporary community. A growing familiarity with the landscape was significant for two reasons. First, individuals tended to vary widely in their knowledge of Kanaio surroundings, but all were greatly interested. By trading stories of what had been seen during the survey, a comfortable dialog was established that simplified drawing out people's views of the place. Second was the fact of conducting tiring field surveys showed a serious commitment to understanding their place, rather than "just driving up and asking us what's here"--a charge leveled by several residents against some researchers who had visited the area in the past.

After completing the first phase of field investigations, a draft of preliminary findings was handed to various interested families when returning for the second phase of research (table 2.1). The ability to get residents' feedback on interim material, especially for errors or shortcomings while still in the field, was an unexpected advantage of commuter research that cannot be over emphasized. It also made a significant difference in interviews as both parties were able to discuss previous research projects, ask questions that arose from past work, and comment on changes since Sam Po's views of Kanaio during the 1930-50 period.

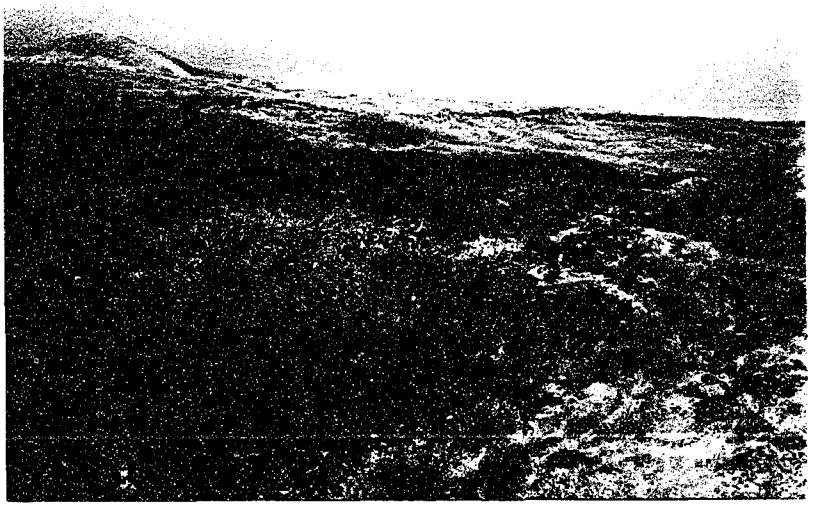
Several unanticipated astronomical events were also of value, in particular the famous partial eclipse of 1991 that cloud covered, as well as a subsequent lunar eclipse. These led to several large and highly visible ceremonies by New Age devotees in Kanaio at site 121 (appendices I, III). In turn, they highlighted the importance of Kanaio for the New Age community of Maui, a significance that otherwise might have been overlooked or at least downplayed. Attendance and celebrations surrounding these two eclipses helped to clarify distinctive variations between Upper Kanaio residents, many of whom described themselves as members of the New Age belief system, and New Age followers elsewhere on Maui (appendix III). This is an obvious distinction, once noted, but in hindsight only became obvious with the large ceremonies conducted in Kanaio by outsiders, and subsequent comments by residents.

As before, drafts of all sections of the research were sent to selected residents for comment and critique--at least those willing to suffer through innumerable versions. One result has been a continuing dialog with the community, rather than the more common pattern in field research of "here today and gone forever". It has allowed the community some ability to say how information might be included in the dissertation and, for example, has led to some intentional distortion of site locations to protect archaeological sites, which

Cloud-mist patterns on a typical afternoon. This is in central A'uahi looking *mauka* towards Kahikinui.

1.3 Lower A'uahi, in the new flow material at the 600 foot elevation.

Pu'u Pimo'e from the main highway. The National Guard firing range can be seen at the base of the cone.



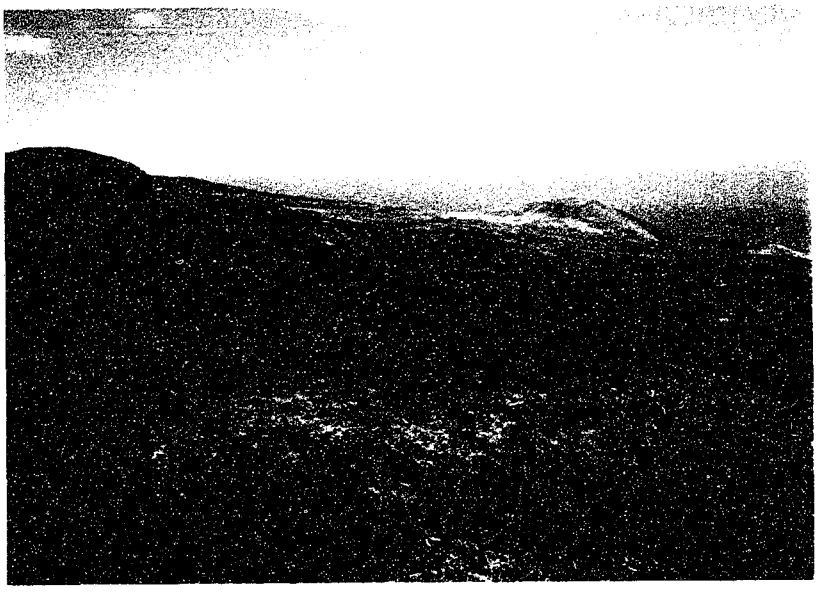
1.4 Small *wiliwili kīpuka* in east Kanaio at 1500 foot elevation, looking towards Hokukamo and lower A'uahi.

residents feared might be destroyed if too accurately described. This small attempt at making more even the exchange of information also has allowed residents to use it, to deal with local issues of land control and access, with both each other and external agencies.

The Place

Kanaio and A'uahi convey a set of strong visual and emotional images, in large part notable for their clarity. Nothing seems small, except people out here. The area stands as a compelling statement of the various forces of creation and destruction that define Hawai'i. Driving east from Kula, on the main highway, one passes 'Ulupalakua and the bucolic green slopes that frequently look like the world's largest golf course. Then there is a descent through an area of low visibility and thick brush, the road narrows down to one and a half lanes, and the number of potholes increases dramatically. Suddenly a small rise is topped and the view opens up, and you are astride of what appears to be a recent *'a'ā* flow, with large twisted boulders of black lava, but most striking is the view to the horizon. On the left suddenly can be seen the whole line of cinder cones (from Pu'u Mahoe proceeding *mauka*: map 1.1) marching up the side of Haleakalā and often, depending on the time and season, the summit of Haleakalā (plates 1.1, 1.2). Due east the horizon curves along the side of Haleakalā to the cinder cones of Lualailua Hills and to the right are the closer cones of Hokukamo and Pōhākea (plates 1.3, 1.5). But dominant on the lower slopes, standing like a monument on the slope, is Pu'u Pimoe (plate 1.4). Just over the top of Pu'u Pimoe you can see the Big Island, Hawai'i, and the ocean being squeezed through the narrow channel.

On closer inspection several features become apparent. One is the continuation of the bucolic, golf-course green, which is now *mauka* and continues into A'uahi (plate 1.6). A second is the presence of scattered houses and clumps of trees in an area that looks significantly greener, and somewhat downslope a highly visible little white building (the Honua'ula Church) (plate 1.1). To the right, the flow on which you are standing, relatively narrow at the highway, fans out downslope so much that the entire coastline is covered in recent lava, with no trees or greenery to interrupt the view of waves battering the shore (plates 1.2, 1.8). But most striking is the combination of visibility and speed. The exceptional clarity of the sky means that even small details can be some distance away. Almost constant winds move clouds and mist at a rapid pace. The result can leave one hypnotized, as cloud and mist formations twist, turn, wrap around cinder cones, break up, and reform in an instant (plate 1.3). Squalls come marching down the channel and disappear, seemingly in minutes. Cloud and mist build up at Lualailua Hills, touch your face, and vanish almost before it is possible to react. The whole impression is of what Europeans would



Central A'uahi and Hokukamo from the Kanaio *ahupua'a* boundary at the highway.

1.5 Central A'uahi looking *mauka* with Pu'u Ouli on the horizon. Taken from the Lualailua *ahupua'a* boundary wall near the highway.

Vegetation pattern in central A'uahi. Note change to open terrain at higher elevations.

1.6 *Kīpuka* in east Kanaio-west A'uahi. Note native vegetation in the low. This is the pattern noted by Resnick (1977) common to the area.

Upper Kanaio at 2500 foot elevation in Resnick's (1977) Native Scrub vegetation zone.

1.7 Lower Kanaio town from the east.

consider the distinctions between people and nature, but that seems totally inappropriate. It is better seen as forces in dialog and contest, playing out over the landscape, with resident humans no more substantial than the goats, cattle, or *wiliwili*. It is a place where *akua* are still active, and the present is limited to airplanes flying overhead and cars in transit from Kula to Hāna.

Driving further a series of shifting landscapes, almost strobe-like, meet the eye-- from lava to sparse pasture; then corrals, cattle and houses (plate 1.4); then suddenly even more twisted, recent black lava; with equal suddenness, A'uahi and clumps of *wiliwili*, seeming to stand patiently in family groups alongside the road waiting for something (plate 1.2). In gulches are clusters of vegetation that, upon close inspection, are confusing because much is unfamiliar (plate 1.6). Stunted trees with leaves oddly shaped or colored, bushes that turn into vines.

It is at this point that the basic visual contradiction of Kanaio-A'uahi becomes clear, the factor that makes it such as fascinating yet private place. While there are the striking vistas stretching in almost any direction into the distance, there is also another place. This one consists of small, nearly invisible places--a small clump to three trees and bushes with several goats standing motionless nearby; a boulder of recent *'a'ā* the size of a small house, black when looked at quickly, but more closely is seen to contain red, yellow and white, in shapes and colors twisting across its surface. This vast landscape becomes a world of small details and small things, a world of quiet where cows can be heard several kilometers away and at1800 feet the surf at night a whole kilometer distant.

It is a world celebrating the small and the subtle. Big is found elsewhere, in the distance or where the traffic of busy tourists goes. Kanaio-A'uahi is a private place, prone to introspection and escape. It is a place which allows people, but does not welcome them. As commonly noted by residents, if you are supposed to stay, you will; it is a place that decides if a person should remain; if you should go, nightmares will persist till you leave (Chapter 4). People are present in Kanaio, but they do not control this place and recent flows are reminders of its power. It is stark compared to almost any other section of Maui, yet it has its own beauty--invisible from a car, requiring patience and effort to witness. One has to work hard to be in and of Kanaio and A'uahi. It is a place that appears easy to describe, yet defies feeble academic exercises such as momentary dissertations generated by short-term academic experts. Most people passing through will never notice the place, except for the bleak, long vistas. For those who do notice and show interest, the place leaves a mark. All residents in Kanaio-A'uahi, past and present, share this. It is a different place, a unique place. It is a place where the cultural landscapes were generated in dialog with other elements and forces, spiritual and natural.

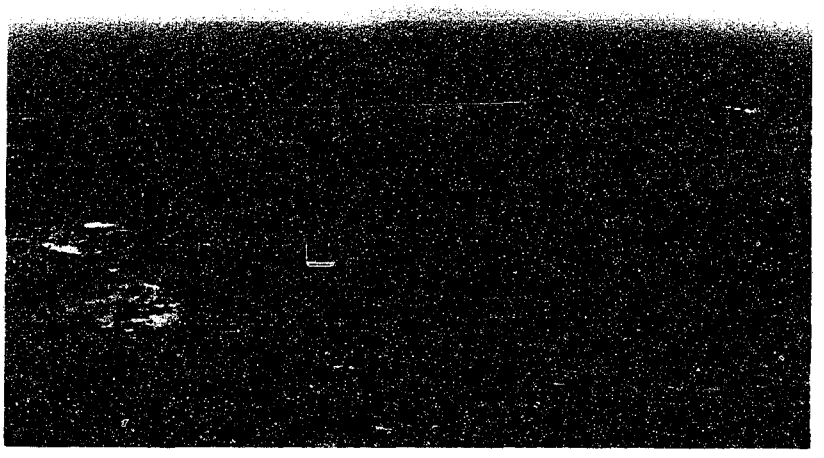
The Physical Environments of Kanaio and A'uahi

Travelling past 'Ulupalakua Ranch and reaching the open barren slopes of Haleakalä, Kanaio and A'uahi are first two complete *ahupua'a* encountered. The distinctively strong and persistent winds, so much a feature of the area, are a determining factor for many of it's physical attributes. An ever-changing pattern of cloud and wind conceals the fact that this section of Maui is located in the rain shadow of Haleakalā and thus does not enjoy most of the rain dropped only fifteen miles away. Upon closer observation, it becomes clear that much of this cloud actually brushes over the slopes at higher elevations (plate 1.3) to provide a pattern of mist that, as discussed later, was so critical to the early agricultural success of Kanaio and A'uahi.

The initial impression of striking vistas and limited vegetation also is accurate, for both water and suitable soils are in short supply. As Sahara et al. (1967:3) have noted, this area consists largely of lithosols with occasional pockets *(kīpuka)* of red desert soils:

> The East Maui lands, on the leeward slopes of Haleakala from Kaupo to Ulupalakua, are geologically young in comparison with the rest of Maui. The dominant soils in this section are in the Lithosol Group, including the lava lands with little or no soil development... However, there are small islands of deep, well-developed, stony and non-stony soils of the Low Humic Latosol and Red Desert Groups. The lack of an adequate supply of moisture, natural or applied, precludes the use of these soil areas for cultivation. Slopes are mostly gentle to strongly sloping and deeply eroded; gulches are few. Climate approaches that of a tropical locale, being warm and sunny. Median annual rainfall ranges between 20 and 40 inches but is seasonal in its annual distribution. The principal land use is low intensity grazing. Water for livestock must be pumped from adjacent areas.

The contrast between the green upper slopes, in the mist zone, and the very dry lower slopes is one of the region's most striking aspects (plates 1.1 and 1.2). What little rainfall comes for Kanaio and A'uahi is experienced during the Kona season, when weakened tradewinds mean that rain is borne by winds from the west or southwest. Even with this seasonal rainfall, sections of the two *ahupua'a* lying at less than 2000 feet receive on average less than thirty inches a year, compared with forty inches on the upper slopes (excluding cloud-mist precipitation). This lack of heavy rain and associated erosion is responsible for the absence of deep dissection seen on this portion of Haleakalā's slopes--in part the origin of the



Makai to the coast. This view is from Pōhākea. Note the impact of the recent flows on coastal vegetation.

1.8 The coastal pattern. This is 50 meters from the shore near the Pi'ilani Trail at Makee (site 207) looking back to the west.

Upper A'uahi at 3200 foot elevation.

1.9 Upper Kanaio at 5800 foot elevation.

feeling of distance as slopes curve smoothly as far as the eye can see (Kyselka and Lanterman 1980, Macdonald et al 1970).

Features that dominate immediate vistas are numerous and recent cinder cones on the flanks of Haleakalā (plates 1.4 and 1.5). Landforms that make up Kanaio and A'uahi result from the Hāna Volcanic Series, the last major period of volcanic activity on Haleakalā. The line of cinder cones, stretching like a fence up the side of Haleakalā (map 1.1) and separate Kanaio from the more verdant *ahupua'a* of Kalo'i to the west, are the visible portions of the Southwest Rift Zone of Haleakalā (Kyselka and Lanterman 1980, Macdonald et al 1970). This last area of volcanic activity for Haleakalā resulted in burying the material of the Kula Series underneath a thick layer of Hāna lavas. As Stearns (1942:96) notes:

> The Hana lavas are predominantly aa, but a few pahoehoe flows are found here and there, especially near the vents, where thin, very vesicular lava is common... Many of the flows extend nine miles from the top of the summit depression to the coast and then for an unknown distance under the sea. Features common to all fresh aa flows are found such as long winding channels through which the rivers of molten lava flowed and balls of wrapped clinger called "bombes de roulement."

The near-perfect symmetry of the cinder cones reflects both the recent nature of these events and the lack of heavy rainfall. Equally important to residents is the high permeability of these lavas which, as Stearns (1942) notes, results in very little surface water since rainfall disappears almost immediately into the underlying lava. This is true even in those sections of Haleakalā, at Hāna, exposed to rainfall as heavy as 200 inches a year. Highly permeable lavas in Kanaio and A'uahi this explains both the lack of erosional patterns from visible streams and the large number of springs at various locations, especially on the coast, where water absorbed upslope reappears.

The first image of recent volcanic activity is accurate, much of the visible lava resulting from the last active phase of Haleakalā. The fresh and very rugged flow of *'a'ā* that separates Kanaio from A'uahi may date from as recently as the eighteenth century (Stearns 1942, Stokes 1936). In fact, material from the two most recent flows defines much of the surface area of Kanaio, as the western boundary with Kalo'i, along the line of cinder cones (the Southwest Rift), as well as much of the Kanaio coastline (plate 1.8), is covered with material from the 1790 flow that inundated Keone'ō'io (La Perouse Bay)(Stokes 1936). One of the most subtle differences between the two *ahupua'a* is that A'uahi is relatively older than Kanaio (compare plates 1.1 and 1.2), except for a recent flow emanating from Hokukamo and possibly a sympathetic eruption of the early 1700s just as in eastern Kanaio.

Patterns of simultaneous eruptions are typical of Hawaiian volcanic activity and perhaps were responsible for the series of flows from Pu'u Pimoe and Pu'u Pōhākea (Stearns 1942; also plate 1.8).

At lower elevations in Kanaio and A'uahi, a distinctive visual image is provided by the *kīpuka* of small oases of vegetation that relieve the monotony of black and red *'a'ā*. In some cases, they are remnant patches of high ground uncovered by the most recent events, while in other cases they appear to be low pockets of ash loess, possibly from the Hokukamo eruption, which seems to have generated considerable amounts of red ash. The location of many *kīpuka,* both in terms of elevation and downwind of the main Hokukamo vent, support this interpretation.

The 1790s flow, the western boundary of Kanaio, consists of material from a vent on the *makai* face of Keonehunehune, substantially *mauka* of Pu'u Mahoe which Stearns (1942) misinterpreted as having started at Pu'u Mahoe. This flow poured between the cones of Pu'u Mahoe and Kaimalo'o, covering the western portion of Kanaio (and adjoining Kalo'i) from 3000 feet to sea level and to a depth of twenty to thirty feet in the upper sections, perhaps even more at lower elevations. Possibly simultaneously, possibly earlier, the vent on the *makai* side of Pu'u Pimoe erupted and another major flow completely inundated the coastal area of Kanaio (plate 1.8). Perhaps concurrent with the Pu'u Pimoe eruption was the one from the vent at Hokukamo, which covered most of the coastal zone to the eastern edge of A'uahi. This series of closely-spaced, eruptive phases mean that lower elevations, especially in Kanaio, are significantly younger geologically than the upper slopes and consequently have much less erosion or soil development. As most of this volcanic activity appears to have occurred in the past 400 years, it occurred after the initial occupation of East Maui by Hawaiians and must have left a powerful impression on them.

The Human-Environment Dialog

The area encompassed by the *ahupua'a* of Kanaio and A'uahi follows the traditional logic behind such Hawaiian land divisions: stretching from the immediate offshore area to the highest immediate area, most frequently in the form of a pie slice from shore (*makai*) to uplands (*mauka*). In most cases, this *mauka-makai* orientation was followed as the most equitable way for the population of each *ahupua'a* to exploit all available resources. As each *ahupua'a* was seen to be largely self-sufficient, in terms of basic survival, their size and orientation tended to reflect resource availability. Less common is the visible boundary between Kanaio and A'uahi, since recent lava flows define each *ahupua'a*.

Kanaio and A'uahi are distinctive in a less visible fashion, being allocated to different districts (*moku*) of the island of Maui, with Kanaio the easternmost *ahupua'a* of the *moku* of Honua'ula and A'uahi the westernmost *ahupua'a* of the *moku* of Kahikinui. There is no clear documentation that describes the conditions for defining *moku* boundaries but, since frequently they were separate political entities, presumably boundaries would have some physical definition. This is not the case for the upper slopes of Kanaio and A'uahi, though it would be true of Kanaio compared to Kalo'i to the west, or A'uahi to the east when contrasted with major changes in landform in Lualailua Hills.

Along with the separation to two *moku,* the upper boundaries of Kanaio and A'uahi are conspicuously different (map 1.1). The upper boundary of A'uahi ends at the 6400 foot level on the south slope of Haleakalā, whereas the *ahupua'a* of Kanaio continues beyond the lip of Haleakalā and into the crater proper at Pohaku Palaha, on the eastern rim. *Ahupua'a* to the west of Kanaio in Honua'ula do not extend this far north, and end at roughly the same elevation as A'uahi. No explanation was found for this unusual northward extension of Kanaio beyond the rim of Haleakalā.

One of the assumptions upon which this study was based was that visible variations in land use and occupation might exist, between the two *ahupua'a*, being located in different *moku* and consequently before 1800 falling within different administrative control. However, it should be noted that the oral tradition is somewhat contradictory on the designation of *moku*, as at least two sources consider A'uahi to be within Honua'ula (along with Kanaio) and thus the eastern boundary of A'uahi with Lualailua Hills the *moku* boundary with Kahikinui (Sterling 1966-71). Yet most sources and older maps all indicate the *moku* boundary, at least from the 1870s, to be between Kanaio and A'uahi (Sterling 1966-71).

The area is one of sun, *'a'ā* lava and strong winds tempered by areas of excellent soil and groves of *wiliwili*, *kukui* and *'ōhia*. Recent flows access limits access to the shoreline, with few beaches and all exposed to dramatic surf from the near-constant currents of the 'Alenuihāhā Channel. There is access to deep water at the shoreline, which drops off rapidly, so that people are lured by the excellent fishing into very dangerous and at times fatal conditions of high surf and strong currents.

Although the two *ahupua'a* have many aspects in common, not surprising given their shared boundary and similar location on Haleakalā, there are distinct but subtle physiographic differences:

a. Kanaio has a more consistent and gentle slope to the ocean, while that of A'uahi is more abrupt;

b. At middle and upper elevations, A'uahi has less material from recent *'a'a* and thus presents a more verdant appearance than much of Kanaio at the same elevation;

c. Casual observation suggests that A'uahi gets significantly more precipitation from tradewind showers than Kanaio, whose rainfall occurs in the upper sections of the Southwest Rift Zone which does not extend into A'uahi;

d. Forest and bush cover give the two *ahupua'a* a distinctively different look, for A'uahi has significantly more of the dry forest groves and its middle elevations are dominated by *wiliwili*;

e. With the exception of one family, recent human activity and most residents are located in middle and upper Kanaio.

The feeling of uniqueness which, like the constant wind, seems to permeate this area is not illusory. Since Rock's (1913) survey of indigenous trees and shrubs, it has been acknowledged that A'uahi contains one of the highest proportions of indigenous dryland forest left in the Hawaiian islands (Lamb 1981). The survival of such a large number appears mainly to reflect the recency of the lava flows, which must have been so destructive of the very forest they now preserve. Small *kīpuka*, isolated in fields of bare lava, are thus protected from much of the wanton grazing by goats and cattle which destroyed the former expanse of dry forest. Of the uniqueness of the Kanaio-A'uahi dry forest, Cuddihy and Stone (1990:15-16) write:

> Forests are the primary natural vegetation of the leeward montane zone. Dry forests are found on leeward East Maui and Hawai'i and are dominated by one or more of the following tree species: *koa* (Acacia koa), *mamane* (Sophora chrysophylla), the ubiquitous *'ohi'a* (Metrosideros polymorpha), and the much more rarely, *'akoko* (Chamasesyce olowaluana, C. celastroides). Particularly rich examples of montane dry forests occur at Auwahi on Maui and Pu'uwa'awa'a on the slopes of Hualalai, Hawai'i... More mesic sections of these rare forests have *olopua* (Nestegis sandwicensis) as an important component. While changes (particularly the invasion of alien grasses) have occurred in the 75 years since Rock's work in these areas and may have resulted in drier conditions, both sites remain notable for great tree species diversity and the presence of rare plants. Based on the current and historical distribution of tree species characteristic of the

Auwahi forest, Medeiros et al speculated that a rich dry forest once had a much greater distribution on the south slope of Haleakala.

As the dry forest was a key factor in the successful Hawaiian exploitation of Kanaio and A'uahi, it is fortunate that Jane Resnick (1977) did some very detailed work on the dry forests of the Honua'ula section of Maui, inclusive of Kanaio. Her analysis of the composition and extent of forest precontact, the implications for water collection and agricultural use, and the impact of uncontrolled grazing animals in the early nineteenth century are critical to this research.

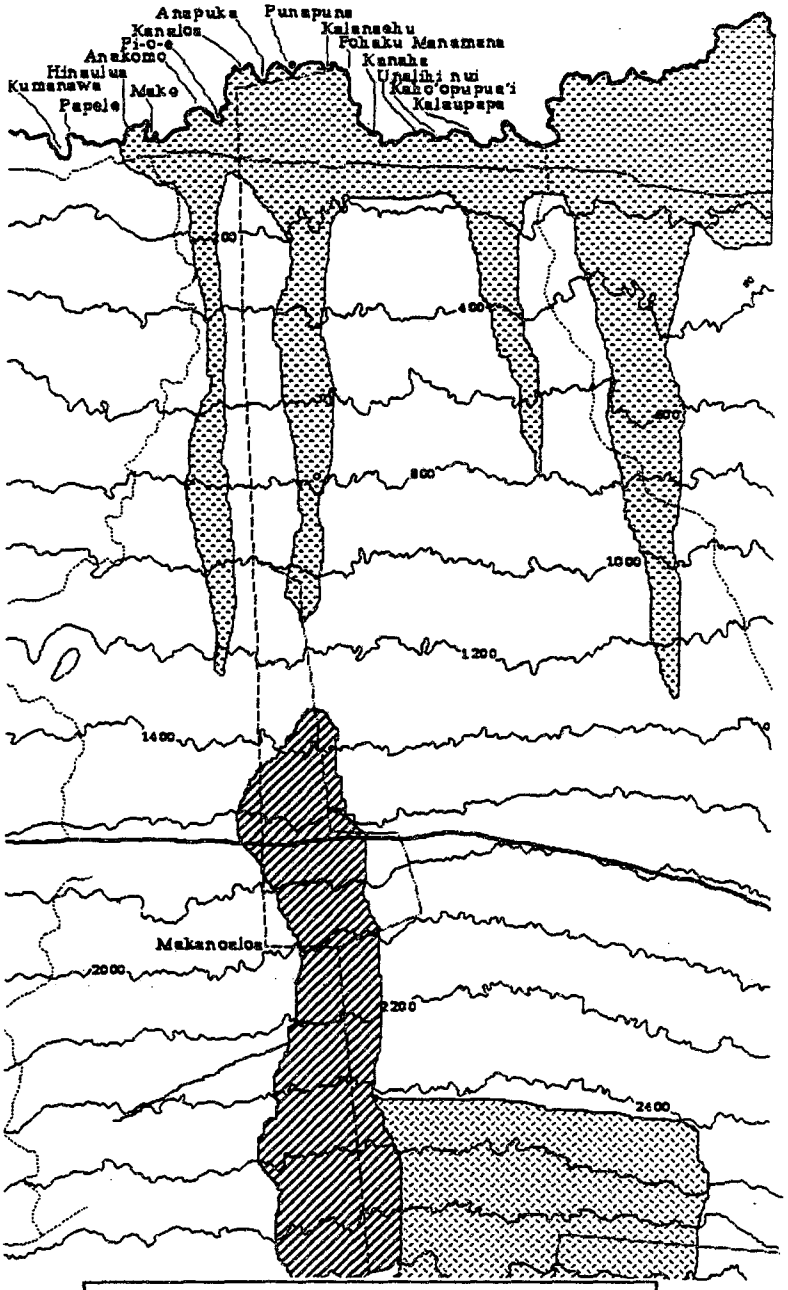
Forest, Mist, and Rainfall

Resnick divided the forest into components, lower (less than 2600 feet) and upper (2600 - 4000 feet) elevations (plates 1.6, 1.7, 1.9). The dominant individuals in the lower forest were identified as the *wiliwili* (Erythrina sandwicensis). Until the midnineteenth century the *naio* (Myoporum sandwicense) probably responsible for the naming of Kanaio (*ka-naio*), was a major component of the forest, but is now rare.

At least in wet gulches, the only species which appears to be extending its range under patterns of modern grazing, is the *kukui* (Nototrichium sp.). Other species noted by Resnick include the *lama* (Diospyros ferrea), *alahee* (Canthium odoratum), *akoko* (Euphorbia celastroides), *ohe makai* (Reynoldsia sandwicensis), *hao* (Rauvolfia sp.), *aiea* (Nothocestrum latifolium), *'ala'a* (Planchonella sp.), and *kolea* (Myrsine sp.). Resnick noted several native vines, *huehue* (Cocculus Ferrandianus) and Bonamia Menziesii along with the native poppy (Argemone glauca) as being very common. Today, these have been overwhelmed in almost all of Kanaio and A'uahi by a variety of introduced exotics, with which they have been unable to compete, largely due to herds of goats and cattle (plates 1.2, 1.4, 1.5, 1.6).

The impact of grazing animals is especially noticeable in lower areas where water is more scarce and fodder is more limited, so that it is impossible to underestimate the pressures on these plant populations of large goat herds (estimated in 1992 at upwards of 100-200 animals). Botanists have suggested that curtailing grazing activities might revitalize the forest sections and that the endemic species might recover some of their former vitality by fencing forest sections or eradicating goats and cattle (R. Silva interview 1992).

The upper forest includes most of the species noted above, apart from *wiliwili*, but includes several others that are unique, such as *'ōhia lehua* (Metrosideros collina) and *halapepe* (Pleomele aurea)(plate 1.9), both of which are dominant species in the remnant forests. *Halapepe* has been heavily affected by goats, who butt against the trunk to knock it over, and

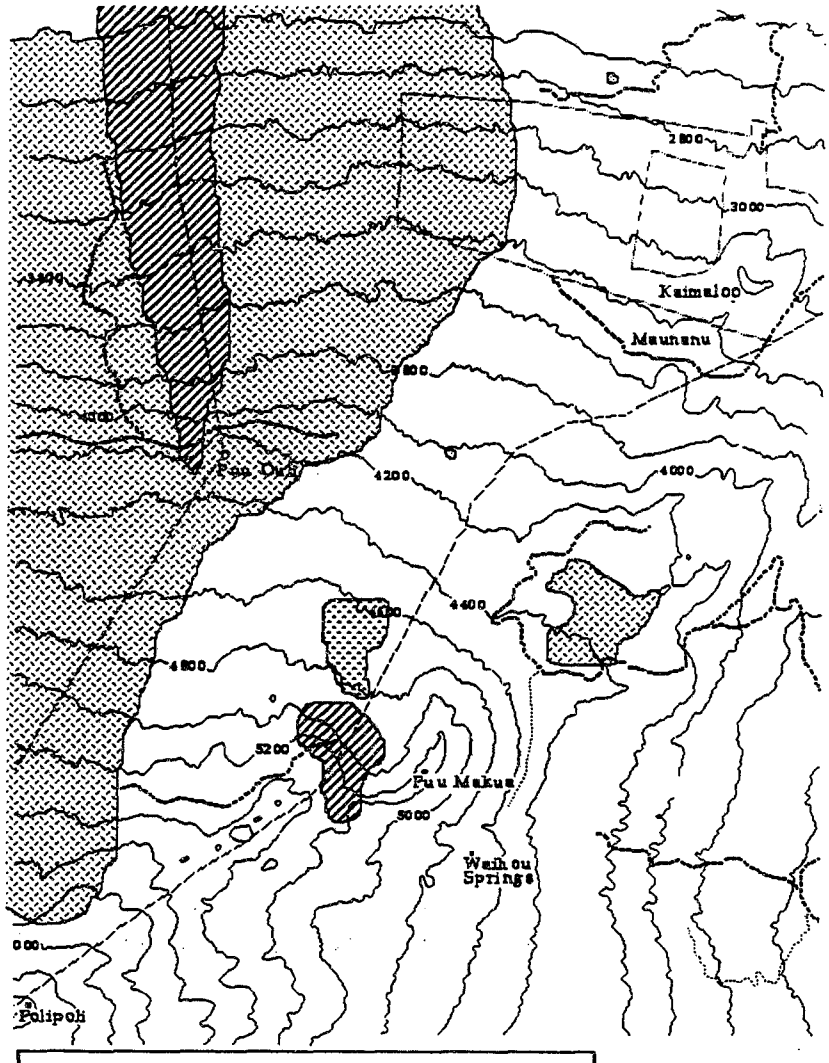


MAP 1.2

Lower A'uahi- Kanaio Vegetation Patterns

Recent Lava
Native Dry Scrub
Native Dry Forest

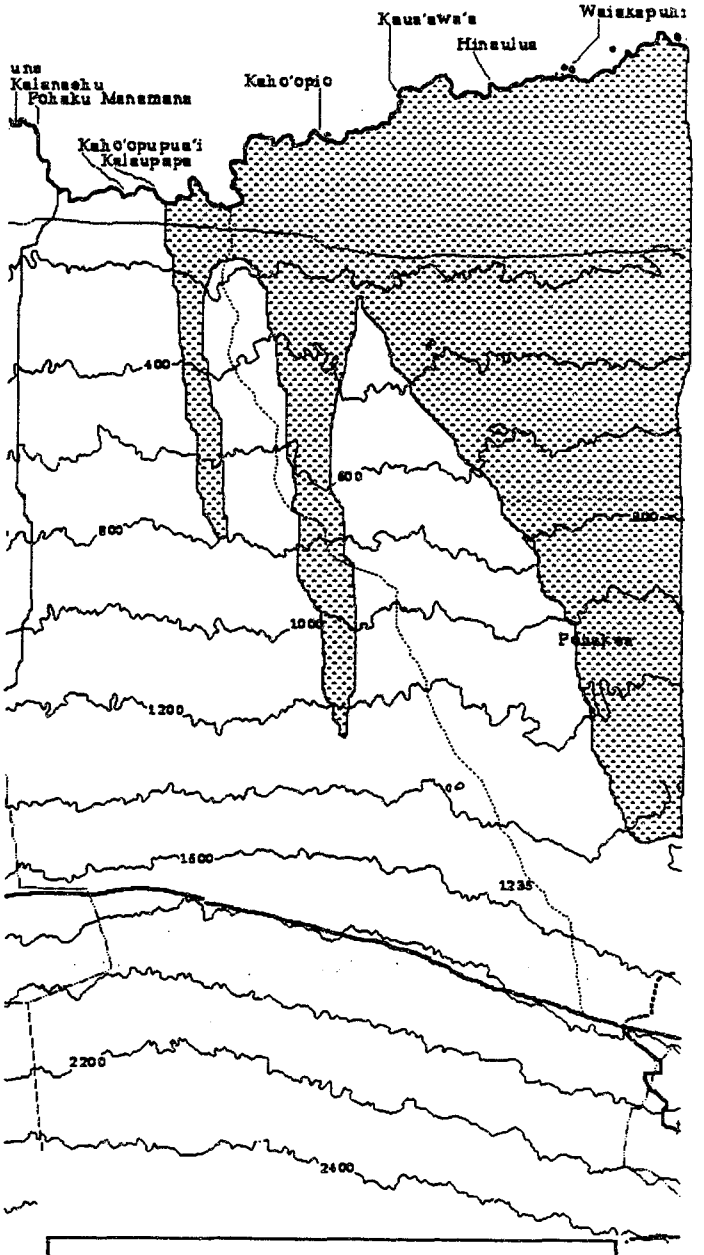
R.B. 9/94



MAP 1.3

Upper Kanaio Vegetation Patterns

Recent Lava
Native Dry Scrub
Native Dry Forest
R.B. 9/94

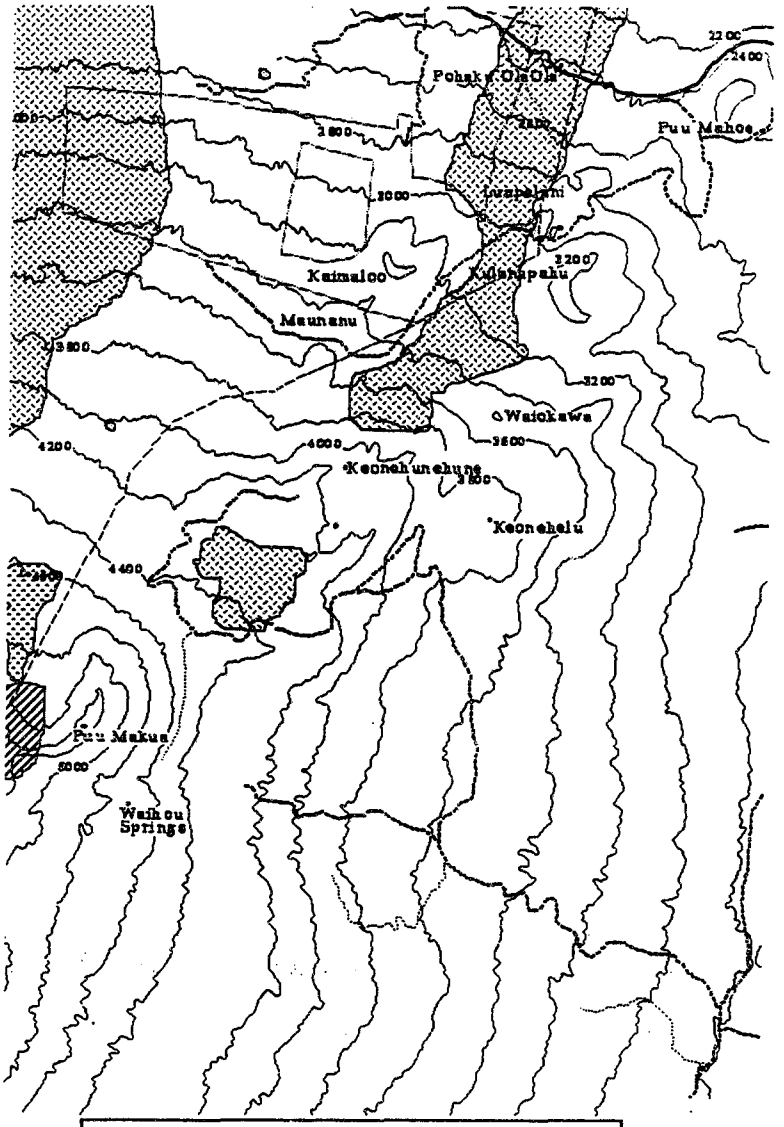


MAP 1.4

Lower Kanaio Vegetation Patterns

Recent Lava
Native Dry Scrub
Native Dry Forest

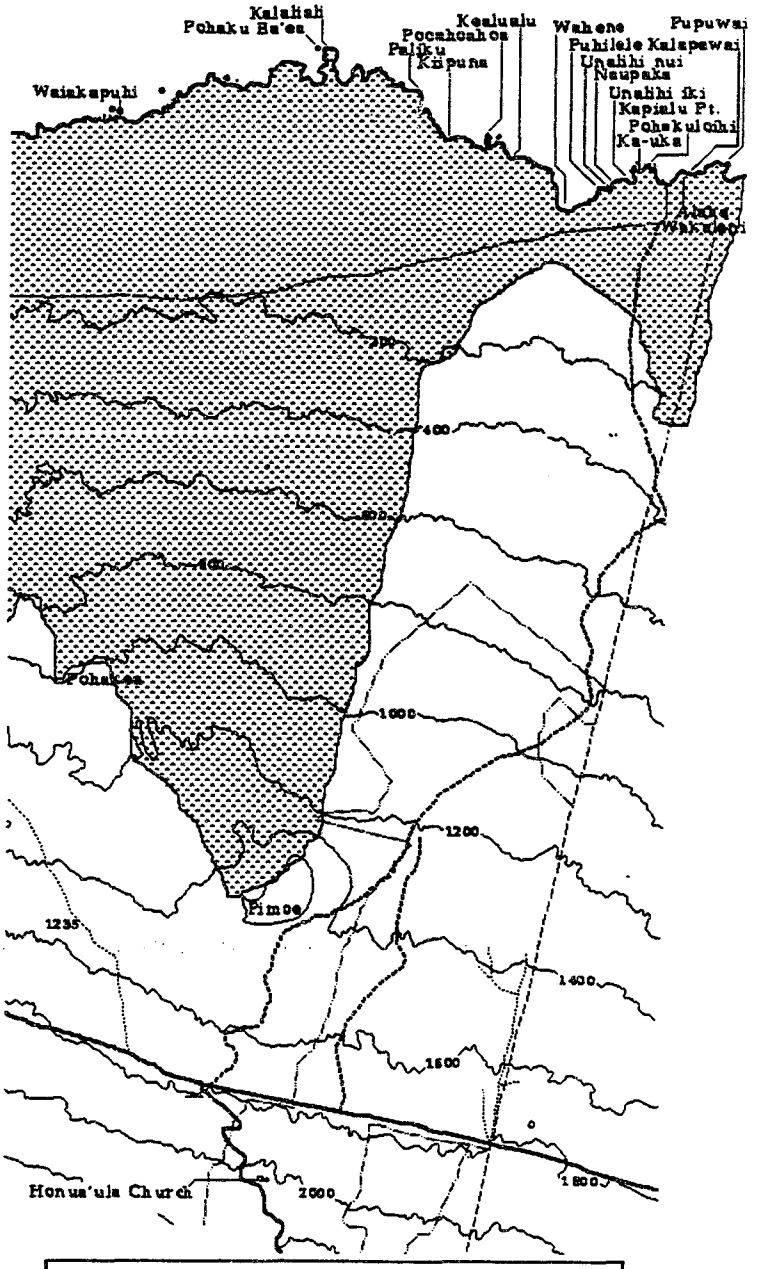
R.B. 9/94



MAP 1.5

Upper Kanaio-Kalo'i Vegetation Patterns

Recent Lava
Native Dry Scrub
Native Dry Forest
R.B. 9/94



MAP 1.6

Lower Kanaio-Kalo'i Vegetation Patterns

Recent Lava
Native Dry Scrub
Native Dry Forest

R.B. 9/94

in summer 1992 fully one quarter of *halapepe* were thus affected, most in the few weeks prior to being surveyed.

Other tree species at upper elevations include *iliahi* (Santalum sp.), now small in number after the great sandalwood harvesting of the early nineteenth century, the *olupua* (Osmanthus sandwicensis), *maua* (Xylosma hawaiiense), *kauila* (Alphitonia ponderosa), and *heau* (Exocarpus sp.; plate 1.9). Above 3000 feet, *mamani* (Sophora chrysophylla) becomes a dominant species while understory growth includes *'ulei* (Osteomeles anthyllidifolia), *pukiawe* (Styphelia tameiameiae), *maile* (Alyxia olivaeformis), Wikstroemia, Sicyos and Korthalsella species.

Even in A'uahi, these species are located only in areas of relative isolation, either within the small *kīpuka* on the *'a'a* flows or on the flows themselves (plates 1.6, 1.9). Such locations are less attractive to both goats and cattle, for easier and more plentiful grazing usually is available elsewhere. However, in drought conditions experienced during the past ten years, these relatively protected areas have become havens for goat herds, which have severely decimated remnant forest far beyond Resnick's pessimistic predictions in 1977.

Gauged rainfall at various stations in this section of Honua'ula indicate that yearly rainfall is extremely variable, from a low of 14.6 inches in 1957 to a high of 73.8 inches during 1931 at 'Ulupalakua Ranch. A more significant factor, emphasized throughout Resnick's (1977:14) analysis of the dry forest, is the almost daily development of cloud on the slopes (plate 1.3):

> ...the cover of convectional clouds which forms over the rift zone, often extending in a band above the line of cinder cones, from high up on the slopes of Haleakala down to the coast at Puu Olai and Cape Kinau. Clouds also form on the upper slopes of the mountain, and commonly descend to become afternoon fog about 2500' elevation. Such clouds and fog not only slow down the rate of evapotranspiration, but may also supply considerable moisture by fog drip, the direct interception of cloud moisture by the vegetation. Fog drip under trees can have a favorable influence on the surrounding herbaceous vegetation...

Resnick notes that research in areas with similar patterns of cloud or fog indicates that upwards of forty to sixty per cent of collected moisture may be from fog drip. A key factor in her discussion was that elevation was a key factor, with relatively minor increases in altitude resulting in significant increases in the collection of moisture. This led Resnick (1977:16) to suggest that changes in vegetation pattern, especially loss of tree cover, might result in

significant losses in water collection--perhaps as high as forty per cent of available water in Kanaio:

> ...as early as 1859...one source mentioned that sugar cane grew well at Ulupalakua without irrigation, 'although it rarely rains in that neighborhood.' the writer commented that 'heavy dews' were the source of the moistures. The effects of fog drip are most pronounced over the rift zone, where the clouds are centered, and at higher elevations, where fog is common.
>
> ...Trees, with their greater height and larger surface area for intercepting droplets, are able to catch substantially more moisture than shrubs and herbs. The vegetation, then, may have a significant effect on water availability, and it is possible that the removal of the native forest, which had taken place around Ulupalakua by about the 1850's, may have had a detrimental effect on the moisture regime.

If Resnick's premise is correct, then the major limiting factor for forest growth in middle and upper Kanaio-A'uahi may have been less surface water and more lack of soil and suitable areas for tree growth and introduced plantings. In the lower slopes toward the coast any major changes in vegetation pattern would be unlikely, as any increase in water volume would be on site rather than transported downslope. Thus the area at an elevation below 900 feet, where most indicators of prior dry forest are absent, has received roughly the same levels of precipitation for most of the period of human occupation. The only possible variation in water supply would be from underground sources at the coast in the form of springs. In upland areas, major springs either have been intentionally destroyed during a range war of the 1800s according to one informant, or already tapped for ranching activities and thus without their traditional volume.

In the coastal area according to interviews with Sam Po (Chapman and Sterling 1968, 1966, Pukui and Williamson 1966, Sterling 1968, 1967a, 1967b, Newman and Sterling 1971), there are a significant number of springs or upwellings of freshwater near the shore which during the period immediately before contact supported relatively dense coastal populations with an associated agricultural system.

Resnick's work suggests that logging in the nineteenth century, initially for sandalwood and later for firewood and lumber, though widely blamed for loss of forest habitat (Handy and Handy 1972), was in reality only partly responsible. More decisive was the impact of large grazing animals:

> The livestock probably affected the forests not so much by eating seedlings, although that was important, as by trampling. The original dry forest probably had two main layers: an understory of ferns and shrubs, and a tree layer. Initially, the animals would have destroyed the undergrowth by grazing and trampling. This would have altered the moisture regime at ground level, and have exposed the soil to erosive forces. The soil in Honua'ula becomes very loose and powdery in dry weather, and it is easy to see how the shallow roots of the native trees could have been damaged (Resnick 1977:25-6).

The implications for any contemporary preservation or reintroduction of the dry forest are obvious. The definition of the new Kanaio Natural Area Reserve is problematic until it has been fenced to keep out grazing animals, but this had not occurred by 1994 (Chapter 4). Any goal to return Kanaio and A'uahi to vegetation regime similar to that of the nineteenth century, before the loss of forest species became established, would involve a number of economic and social decisions. Today, large-scale ranching accounts for the only formal economic enterprise in both *ahupua'a*.

From scattered sources, Resnick has been able to reconstruct the dry forest cover of Kanaio-A'uahi prior to the impact of major grazing. An 1853 account noted "grass and other herbs growing everywhere" on the slope between 'Ulupalakua and Mäkena, a settlement on the coast (Resnick 1977:56). This lower slope was probably covered with the indigenous *pili* grass, which was common as late as the beginning of this century (Sterling 1966-71), whereas at present imported grasses, weeds, koa haole, and kiawe dominate.

The middle elevations, between about 2000 feet and 5000 feet in elevation, were the main area of food cultivation through the eighteenth century. Even into the middle of the next century, despite heavy use the forest apparently was to some extent intact, as Resnick (1977:22) notes:

> In some places, at least, the forest was well developed. Mrs H.P. Baldwin, daughter of the missionary W.P. Alexander, lived at Ulupalakua as a child in about 1856. In the 1920's, Mrs. Baldwin, then in her 90's, told Mrs. Inez Ashdown that when she was a child the forest around Puu Makua was "as thick as the forest at Hana" [Pu'u Makua is in Kaloi and its lower slopes define the west ahupua'a boundary of Kanaio]...

And again:

> Another clue may come from the name of Puu Mahoe, a large cinder cone near Ulupalakua. The name may refer to the *mahoe* tree (Alectryon macrococcum), which is now very rare. These species, with the possible exception of the *kopiku*, are still present in the small remaining stand of native dry forest to the east, in Kanaio and Auwahi, along with a great variety of other species. Even now, this forest, located on aa lava, is thick and well-developed in a few protected areas. It seems likely that most parts of the district at comparable elevations (over about 1700') could have been at least equally well-forested... (Resnick 1977:23).

It should be remembered that the term "dry forest" does not imply a dense canopy of trees covering the slopes. In all likelihood, in the past, the forest on the middle slopes of Kanaio-A'uahi was simply a much expanded form of remnants left today--groves of mixed tree species, with a constituent understory interspersed by open areas covered lightly in grasses and occasional bare rock. This clumping pattern would have been less evident above an elevation of 1800 feet where the forest was continuous, as in the rest of Kahikinui. Below this level decreases in mist along with less good soil would mean that groves would be more dispersed, likely disappearing altogether around 900 feet. Major groves would have existed about the cinder cones of Pu'u Pimoe, Pu'u Pöhäkea and Pu'u Hokukamo, for such features provide protective windbreaks and sources for springs. That the Kanaio-A'uahi region was never the verdant green forest of the Häna area is obvious from a line in an Hawaiian chant, describing places in Honua'ula:

> *'O Auwahi wela i ka la'i.*
> Auwahi hot in the sun (Pukui et al. 1974:276).

The vista presented to a traveler in 1750 would have been strikingly different from that today. The upper slopes which nowdays are coated in a thick layer of kudzu grass, would have been covered more than 200 years ago in a sparse, but constant tree cover. The intermediate slopes would have had clusters of trees, interrupted by more extensive areas of open grasses and bare *'a'a*. The lower slopes, perhaps captured in the above chant, would have been closest to their contemporary appearance; bare *'a'a* except for dense groves around the bases of cinder cones and in scattered *kïpuka*. Changing patterns of control by Hawaiians of Kanaio-A'uahi are mirrored in a sequence of previous landscapes: the precontact, that the Hawaiian so manipulated to their collective advantage into the nineteenth century, as well as the striking changes between eighteenth century and contemporary, late twentieth century landscapes.

A series of explanatory tools are required in a place as physically and culturally complex to understand changing patterns of land use, the cultural belief and community attitudes underlying such use, and how all these manifest themselves on the physical landscape as contemporary Kanaio-A'uahi. The need to preserve complexity while providing coherent explanation demands a different way of interpreting cultural landscapes.

CHAPTER 2

APPROACHES TO CULTURAL GEOGRAPHY

The *ahupua'a* of Kanaio and A'uahi present a complex pattern of past use and contemporary contest among interested parties. Rather than a simple, monopolistic cultural landscape reflecting cohesive and continuous cultural patterns over time, the area under examination represents a complex tangle of many cultural landscapes that are not only visible on the physical landscape but also carried as images by the various resident groups. Traditionally, a single theoretical approach would be applied to analyze the multifarious cultural landscapes of Kanaio and A'uahi, yet the various approaches applied by cultural geographers do not seem adequate to the task. A major discussion has arisen within cultural geography that the complexity of its subject matter has not been apprehended adequately by any particular theoretical approach, nor appears to be in the near future (Gregory et al 1994, Duncan and Ley 1993, Cloke, Philo and Sadler 1991, Johnson 1990, Kobayashi and Mackenzie 1989, Bird 1989, Norton 1989a, Driver 1988).

Part of the problem lies with the assumption that theoretical approaches and their more general, contextual logical paradigms are mutually antagonistic or contradictory. Some cultural geographers agree, as Johnston (1990:102) states:

> The philosophies of realism, humanistic social science, and empiricism/positivism are incompatible, therefore; they make different assumptions about what we can know, and how we can know it. Thus an integration of the three (or two of the three) is not possible. Many believe that it is because they confuse philosophy (and its associated epistemology and ontology) with methodology...neither quantification nor textual interpretation is allied to a single philosophy, and as ways of exploring data they have wide usage. But a science is defined by its goals, by its definition of knowledge and the uses associated with it, not by its procedures. So we must choose between the sciences, and then select the relevant procedures for the work which we undertake in that context.

The alternative, and gradually more acceptable position, is based on two premises. The first, represented by Duncan and Ley (1993), is that Johnston's argument is too narrow and

exclusive. The second is that a multiplicity of theoretical approaches or concepts are needed to deal adequately with the complex patterns found in any cultural landscape:

> One of the most pronounced features of contemporary cultural geography...has been the way in which dominant notions of truth have been challenged and disrupted. There is a growing recognition that knowledge is multiple and positional, that there are many ways of seeing and reading the landscape. One of the foci of contemporary cultural geography, therefore, is the investigation of multiple discourses about place and identity, uncovering previously ignored senses of place and visions of the landscape constructed by the powerless rather than the powerful (McDowell 1994:163)

> The modernist ambiance of the subject has been severely punctured, and we have entered an era of epistemological relativism and methodological pluralism. The question of whether some coherence can or should be imposed upon this intellectual fragmentation is itself a central issue of contention (Gregory et al 1994:5)

The difficulty of studying a process as complex as cultural landscape is compounded further by a persistent lack of agreement about what constitutes the cultural landscape, much less how to go about examining it (McDowell 1994, Duncan and Ley 1993, Bird 1989). Complicating this intellectual Gordian Knot is the increasing interest displayed by related disciplines in spatial patterns and cultural landscapes--especially in anthropology (Rodman 1993), archaeology (Renfrew 1984), and architecture through semiotics of the built environment--which on the one hand has encouraged many new ways of viewing the cultural landscape but on the other seen a major loss of theoretical coherency in its analyses. In this regard, the cultural landscape can be viewed as a modern example of the fable of the blind men and the elephant. The elephant, the cultural landscape, has been the subject of study from a variety of disciplines, primarily geography. Despite considerable effort, the result has been a surprising lack of theoretical or intellectual consensus on what even constitutes the cultural landscape. In turn, this suggests that research in this area has become overly constrained by too much theoretical and methodological parochialism. The result is that while we have excellent descriptions and analyses of various appendages of the elephant (legs, trunk, tail), we have yet to achieve a coherent description or explanation of the whole elephant.

A common refrain among the recent theoretical critique occurring within both geography in general, and cultural geography in particular is the need for diverse approaches to a given subject rather than merely a single view (Ellen 1988, Wagstaff 1987, Hodder

1987, Grossman 1977) . However, this encouragement of interdisciplinary research as a means to develop a more comprehensive view of the elephant becomes embedded in yet another set of practical and philosophical constraints. The costs of retaining multiple specialists for a single project, whether from within cultural geography (as multitheoretical) or from several disciplines (as interdisciplinary) is unrealistic when related to the practicalities of primary field research. In addition, the strategy of a single researcher simultaneously using several theoretical approaches has been criticized as an intellectual contradiction (Johnston 1990). This points to a paradox that especially bedevils the anglophone tradition of theoretical specificity, when the object of study cannot be apprehended within the limitations inherent of a single approach.

At least implicitly, the anglophone tradition within geography strives for scientific objectivity and impartial rationality. In espousing reductionism, it emphasizes specificity at the cost of holistic analysis (Ley 1989, Driver 1988). A major source of intellectual dialog in many disciplines, not least anglophone geography, is the paradox between rigorous and specific training and holistic analysis, especially when the latter is seen to be the defining uniqueness of a geographical approach. From the standpoint of the concept of cultural landscape, this same vigorous and complex debate is evident in how cultural geography should approach its subject matter, both theoretically and methodologically (Gregory et al 1994, Duncan and Ley 1993, Cloke, Philo and Sadler 1991, Johnson 1990, Bird 1989).

Much of the current fascination in geography with existentialist and postmodernist approaches and knowledge is in reaction to limitations of theoretical specificity, especially when combined with the narrow quantitative methodologies of geography during the 1960s and 1970s (Gregory 1994, McDowell 1994). The result, however, has been further conceptual fragmentation rather than the emergence of a theoretical focus around which the discipline could develop a consensus (Gregory et al 1994, Cloke, Philo and Sadler 1991, Bird 1989, Norton 1989). Some geographers like Johnston (1990) feel that such a conceptual coherence or convergence is not feasible, given the philosophical underpinnings of different theoretical approaches. Others (Duncan and Ley 1993) consider diversity possible, while remaining silent about how this could be achieved other than by borrowing concepts from different theoretical approaches and consequently ignoring Johnston's concerns. Perhaps the critical issue is more in the process by which analysis and explanation proceeds rather than the choice of a particular theoretical approach. Some of this same reasoning is evident among those, like the Cambridge sociologist, Anthony Giddens (Bird 1989, Giddens 1983, 1979), who have suggested that structuration theory may provide one answer.

Within the francophone tradition of geography an entirely different discussion has taken place, based on an intellectual premise that does not assume or emphasize specificity.

Amongst the French, geographic enquiry is not wedded to the search for general laws, so that complex theoretical statement and analysis is able to flourish within a regional context (Bonnemaison 1985, 1981, Doumenge 1966, Huetz de Lemps 1989, 1977). The concept of *genres de vie*, as articulated by Vidal de la Blache around the turn of the century, is consistent with Geertz's (1973) more recent call for 'thick description' and the various arguments in favor of structuration theory (Bird 1989, Norton 1989). This is especially true when comparing the anglophone and francophone traditions of geographical enquiry in the Pacific.

In emphasizing regionality, the francophone tradition has reduced the role of theoretical and methodological considerations to the supportive one of generating data and analysis within a regional context frequently termed the *milieux* (Claval 1988). By focusing on the diverse nature of the place, thus making theory and methodology subordinate to spatial interests, some of the intellectual pitfalls of the anglophone tradition have been avoided. However, as has been noted by Claval (1988), the francophone tradition itself has become entangled with a different set of problems, notably a lack of theoretical or interpretive rigor.

The origins of the French geographical tradition are the works of Lucien Febvre, Paul Vidal de la Blache, and Jean Brunhes. Febvre's possibilism, as adapted by Vidal de la Blache, emphasized the options and possibilities that human populations could apply to the environment. Unlike much writing in the anglophone tradition, it largely avoided incipient forms of environmental determinism and consequently had a tremendous impact on French work in the Pacific. A second theme, the emphasis on compiling regional descriptions, is exemplified by the work of Jean Brunhes, another student of Vidal de la Blache. To separate these two distinct threads within Vidalian thinking, in this study the more descriptive regional compilations typical of Jean Brunhes will be included within the *milieux* concept, while the *genres de vie* concept will be limited to more synthetic and interpretive work that derived from possibilism (as in Lucien Febvre). Note the common philosophical and intellectual basis for these two distinct manners of thinking, which in turn was the basis for shared information and collaborative enquiry--a situation less frequently encountered amongst scholars within the anglophone tradition (Brookfield 1984).

While the francophone tradition has been a major force in geographical research in the study of Pacific island societies, few anglophone researchers saw the theoretical possibilities or options. Throughout the Pacific, the *milieux* school is linked partly to a much older intellectual fascination with compilations and more contemporary French geographies have been influenced heavily by the monumental amount of work by such individuals as Jacques Barrau, Francois Doumenge (1966), and Alain Huetz de Lemps (1966, 1957). Despite first impressions, none of these are simple compilations of numbers and descriptions, but rather creative syntheses of extant material. This attribute reflects a major concern of the Vidalian

tradition, that interpretation was central even within descriptive compilations.

From the 1960s, the atlas replaced the *encyclopedie* as the format favored by the *milieux* school. This fostered a descriptive orientation, in many ways closer to the anglophone tradition in Australia with its emphasis on quantitative elements, especially in a demographic or economic context, than to the more interpretive stance of the Vidalian school. Regional atlases were seen most strongly in the work of Jean-François Dupon on New Caledonia (1981); Jean Fages' work on tourism and migration in French Polynesia and New Caledonia (1975a, 1975b, 1974, 1972, 1970); the last of the summary compilations on the Pacific, by Alain Huetz de Lemps (1966); Christian Huetz de Lemps works, some on ethnic groups but in the main dealing with tourism in Hawai'i (1989, 1980, 1977, 1972, 1964); and Jean-Claude Roux's studies on migration and ethnic identity in New Caledonia (1985, 1974). These studies reflect the impact of the "quantitative revolution" on the *milieux* school an attempt to achieve synthetic analysis within a descriptive frame of numerical reference.

Research on Hawai'i within the *milieux* school has been limited, but significant, notably in the research of the Bordeaux geographer, Christian Huetz de Lemps. While some of his work has dealt with ethnicity and acculturation in Hawai'i, on Chinese immigrants (1972), his main focus has been on the changing impacts of tourism (1989, 1980, 1977, 1964). While firmly based in the *milieux* approach the flexibility of his treatment when discussing impacts of tourism could be interpreted as fitting more within the *genres de vie* school--except that these two main strands of Vidalian thought are not nearly as intellectually exclusive from one another as suggested by anglophone commentators (Berdoulay 1989, Buttimer 1982, 1976) as typifies anglophone work.

Genres de vie, the other major branch of Vidalian thinking, has been defined as that theoretical order based on:

> ...the products and reflections of a civilisation, represented the integrated result of physical, historical, and social influences surrounding man's relation to milieu in particular places...originally defined as that unified, functionally organized pattern of living which characterized certain livelihood groups. Livelihood provided the label, the core around which a whole network of physical, social and psychological bonds evolved... A notion which echoed the integration of place, livelihood, and social organization in a group's daily life (Buttimer 1971:53)

At the same time, during the past forty years that the *milieux* approach became somewhat more parochial (Claval 1985, 1984b), so the *genres de vie* approach has provided a great deal of theoretical freedom, whether pursued, within a regional context or the dynamic

of human-environment interrelationships. A large body of research has been generated on cultural landscapes in the Pacific, especially Melanesia, by French geographers, anthropologists, and sociologists, among whom the amount of dialog and cooperation leads to highly sophisticated views about the interactions between people and place. Notable were the studies of Vanuatu, especially Tanna, by the humanist Joel Bonnemaison (1985a, 1985b, 1984, 1981, 1980, 1979, 1977), complemented by equally influential work on rural cultural landscapes and perception in New Caledonia by the geographer Jean-Pierre Doumenge (1982, 1975), the seminal works in the Pacific on perception of land and ritual landscapes in Melanesia by the anthropologist Maurice Leenhardt (1970, 1947, 1930), and a number of studies of ethnic identity, empowerment and land control by the sociologist Alain Saussol (1988, 1986, 1984, 1979). The success of French practitioners of *genres de vie* in the Pacific provides excellent examples of the advantages of this approach notably the great innovativeness and flexibility in scholarly approach and practical implementation for research topics. Research on Hawai'i in this tradition has not been adopted by anglophone practitioners, nor have French geographers explicitly in the tradition extended their area of examination to include Hawai'i.

A key advantage of the *genre de vie* approach is how the region under study is emphasized, instead of theoretical validation and methodological issues so dominant in most research undertaken within the anglophone tradition. This allows geographers the flexibility to apply various methods and incorporate information across disciplines with less overt criticism than often occurs among anglophone practitioners. Conversely, a common complaint of the Vidalian tradition, and of French regional geographic work in general (Claval 1984a), is that such flexibility tends to constrain material within the regional context and thus to discourage broader synthetic work. On balance, and given its emphasis on the regional nature of geographical enquiry, the *genres de vie* approach provides a logical point of departure for research on Kanaio-A'uahi. A theoretical compass was a necessary precondition for the process of grounded theory to be followed and collection of field data to proceed.

Theory of Grounded Process

The present lack of clarity and unity in either the theoretical goals or levels of analysis prevalent with cultural geography and the study of cultural landscapes requires new applications of processual concepts. One alternative is grounded theory, originally developed in sociology by Glaser and Strauss (1967). The term 'theory' has been used already to summarize different modes of explanation. As a result in this study, and to limit semantic confusion, 'grounded theory' will be termed 'the theory of grounded process'.

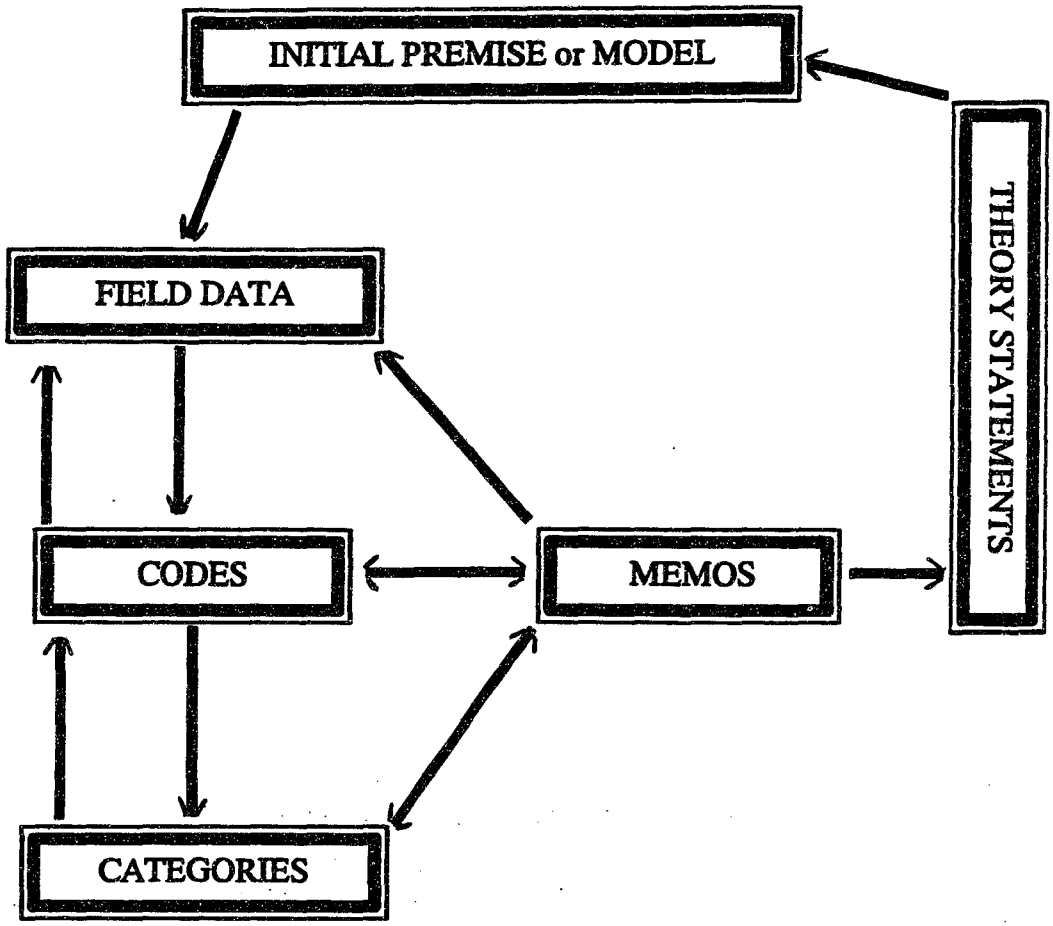


FIGURE 2.1

THE PROCESS OF GROUNDED THEORY

R.B. 3/95

At its most basic, the theory of grounded process argues that much of the contemporary impasse in intellectual development is the uncritical use and implicit premises (Zelinsky 1975). As Charmaz (1983) observes, grounded process is intended to replace the scientific method as the scholarly strategy by which research is conducted. The key conceptual benefit follows the premise that from data, should derive theoretical articulation and validation, rather than the reverse--as in logical positivism. The result is a very different structure to the research process. According to Charmaz (1983:110-113):

> First, data collection and analysis move forward simultaneously. Since grounded theory theorists develop theory from within the data directly, they need to work with solid, rich data that can be used to elicit thorough development of analytic issues... Additionally, they check and fill out emerging ideas by collecting further data. These strategies serve to strengthen both the quality of data and the ideas developed from it.
>
> Second, both the processes and products of research are shaped from the data rather than from preconceived logically deduced theoretical frameworks. Grounded theorists rely heavily on studying their data and reading in other fields during the initial stages of research... From the grounded theory perspective, researchers who pour their data into someone else's theoretical framework or substantive analysis add little innovation and also may perpetuate ideas that could be further refined, transcended, or discarded.
>
> Third, grounded theorists do not follow the traditional quantitative canons of verification. They do, however, check their developing ideas with further specific observations, make systematic comparisons between observations, and, often, take their research beyond the confines of one topic, setting, or issue... From the grounded theory perspective, the method does not preclude verification by other types of researchers; it merely indicates a division of labor.
>
> Fourth, not only do grounded theorists study process, they assume that making theoretical sense of social life is itself a process... In keeping with their foundations in pragmatism, then, grounded theorists aim to develop fresh theoretical interpretations of the data rather than explicitly aim for any final or complete interpretation of it.

The grounded process involves a series of interwoven stages, which operate in a feedback cycle (Figure 2.1):

The Initial Premise or Model: A major criticism of grounded theorists is that, at the most extreme, they ignore the presuppositions to any research and tend to view field data as empirically pristine. In reality, as noted by existentialists among others, all research is biased

by the preconceptions of researcher, informant, and participant (Duncan and Ley 1993, Emerson 1983). The excesses of the grounded process can be avoided by making explicit at the outset the initial focus of research, which include the goal, and questions defining the field research. This constrains, at least in the first stages, both the forms of field data collected and the structure of the subsequent analysis.

Field Data: As Charmaz (1983:110) noted, the goal is for 'solid, rich data'. Being crucial in deriving future theoretical constructs, the variety and amount of data collected are critical. It is at this stage that introducing a variety of methods and strategies has value, in that it produces a wide range of information for reflection and manipulation.

Codes: Ordered patterns of data through various codes, is the third and key stage of grounded process. These codes are initial and frequently discarded, but serve to provide flexible models, within which information can be organized. To be effective, the researcher must order field data from as many viewpoints as possible, which in turn emphasizes the great utility of considering concepts embedded within various theoretical approaches. Each concept requires that data be ordered in a different manner, which in turn requires the researcher to approach the data from unanticipated directions and consequently reduce, if not entirely eliminate individual bias. When coding appears to provide some plausible patterns of order, initial memos are generated.

Memos: Charmaz (1983:120) comments that the fourth phase:

> Memos are written elaborations of ideas about the data and the coded categories. Memos represent the development of codes from which they are derived... By making memos systematically while coding, the researcher fills out and builds the categories...
>
> Through memo writing the questions developed in coding are put into analytic context. The memo tells what the code is about; it raises the code to a category to be treated analytically.

The key step in the production of memos as the initial phase of explicating field data, is the manipulation of codes into topics. Each memo should describe both the prediction and the likely parameters. It may also include predictions on how other, uncollected data, may relate to that already part of the memo. As memos are generated, so different ways of acquiring more field data become evident. New data are incorporated into new or existing codes and thus assess the validity of memos. These more focused codes are called categories.

Categories: The intellectual dialog between data, early coding, and preliminary attempts at organizing data into memos yield categories. Memos are an attempt at interim explanations of initial codes based on available data, which in turn suggests directions for further collection in the field. As this process continues, new information is introduced, and codes become more refined and focused, these categories represent an intermediate stage in the dialog between data and conceptual organization (codes and memos). As categories are finely tuned, so memos are refined into more specific and detailed notes of explanation and organization, preparatory to the final stage of theoretical statement.

Theory Statements: The ultimate goal of the grounded process, these constitute a formal amalgam of memos that have been assessed for their ability to explain some or all of the field data. Theoretical statements, of which there may be several, provide not only the conceptual model both for collected information but also a predictive model for future enquiry. In this sense they represent a more detailed return to the initial model of research to suggest future avenues of primary investigation.

In summary, the key to the grounded process is flexibility of theoretical development. The scientific method requires that data be used to test a theoretical statement explicitly framed within a series of testable hypotheses, so that field data or its collection are structured entirely within that initial framework. This makes almost impossible the incorporation into the research design either alternate methods or theoretical concepts, in that the rigor of the scientific process is sacrificed or challenged by any attempt to introduce uncontrolled or ill-defined exogamous factors. In the grounded process, divergent methods and alternative theoretical constructs are seen as complementary, encourage a more diverse, and thus richer collection of field data to proceed, and facilitates a more rounded theoretical explication of the research interest.

Despite an initial development within sociology during the late 1960s, there has been only limited application of grounded process following initial interest. Most texts about sociological theory consider it either as an extension of hypothesis verification and thus part of conventional research procedure (Singleton et al 1988) or as a form of theoretical validation (Franfort-Nachimas and Nachimas 1992). That this latter work, a recent text on research methods in the social sciences, has only two paragraphs devoted to the grounded process indicates the lack of scholarly interest, even though no major criticisms are presented. More interesting, the applicability of grounded process is found within anthropology as a way of dealing with the diverse data generated by participant observation (Emerson 1983). As in sociology, however, the logic of grounded process has been subsumed within the means of

generating theory from field data rather than as an intellectual alternative to the scientific method, as originally intended by Glaser (1978), Strauss (Glaser and Strauss 1967) and Charmaz (1983).

The grounded process offers several attractive features to cultural geography. The theoretical impulse that initiates the collection of field data continues to be applied only if it displays an ability to organize and explain information being generated. Within cultural geography, this means that concepts from various theoretical approaches can be deployed simultaneously for ordering *categories* and *memos* and thus provide a richer range of options for viewing and collecting data about cultural landscapes. As *categories* and *memos* are continuously validated by subsequent information, concepts must be robust in their capacity to understand or explain, instead of becoming scholarly centerpieces anchored to ideology. The process of grounded theory similarly has great ability to integrate crossdisciplinary approaches, since it begins with directions of research focus rather than with an explicit theoretical justification. In this way, the strengths and weaknesses of different disciplines, their diverse intellectual interests and various modes of explanation can be brought directly to bear on the research at hand. It is this approach that underpins the present study of changes in the patterning of cultural landscapes in the two neighboring *ahupua'a* of Kanaio and A'uahi, southeast Maui.

The Research Dialog in Kanaio-A'uahi

From the outset, several assumptions were made to act both as guidelines for primary investigation and a set of definable criteria, by which to assess the success or failure of implementing grounded process with concepts from varied theoretical approaches. Therefore four assumptions:

The complexity of the cultural landscape, especially when viewed as a dynamic system over time, defeats the ability one theoretical approach in cultural geography to provide a complete and integrated analysis;

The complexity of the cultural landscape is further exacerbated by problems of scale, of both the physical landscape and the social groups whose cultural patterns are under examination, and also of time, since human occupance stretches into centuries rather than generations;

A logical approach, given the above assumptions, would be to utilize concepts from a number of theoretical approaches; and

Kanaio-A'uahi has a set of attributes that make it uniquely qualified rich fieldsite to examine the third assumption. First, it is separated in both physical landforms from the rest of central and east Maui, history and contains today a complex, partially isolated residential community composed of descendents of the earliest inhabitants of Hawai'i plus some recent immigrants; and while the historical record is poor, a wealth of oral information exists in both archival repositories and in the heads of contemporary residents.

Within each theoretical approach reside a number of assumptions, concepts, or modes of explanation that define what makes it unique. While both applications of and modifications to a particular approach may vary considerably, always there will remain a core of identifying concepts. From an existentialist perspective these also could be seen as the particular viewpoints or biases inherent to that approach. To test the above assumptions of this study, it was necessary both to select various concepts from different theoretical approaches in cultural geography and be able to reinsert them into the growing body of data during the research sequence. Thus concepts introduced early in the study design are evaluated repeatedly against field data, as new concepts and data rearrange the codes and memos generated by this ongoing process. Such concepts also become the various wise men by which the elephant of the cultural landscape will be comprehended.

A major weakness in the structure of grounded process lies in the lack of theoretical direction at the first phase of enquiry. It is unrealistic to expect that initial field data will induce preliminary definition of categories, codes, and memos. All primary enquiry will have some intellectual impulse, if only at the level of selecting a study area and techniques for data collection. Given this limitation, coupled with the desire for the most efficient use of limited field time, it was decided that the initial phase of research would proceed within the theoretical structures of the *genres de vie* approach. An obvious choice for an area as diverse and as historically complex as Kanaio-A'uahi, the preliminary requirements for this first phase concerned a basic examination of the physical landscape and its constraints on human occupance. During this phase the focus was on changed in historical experience and in cultural images of land.

Initial Research Phases

Initial research began with archaeological mapping conducted in 1990 at Keone'ō'io, near Mākena (map 1.1). At this stage, a cursory examination of the density and form of visible archaeological features, combined with short discussions with residents, suggested the appropriateness of a *genres de vie* approach (table 2.1 item I). Two facts quickly became clear. The first was the great historical depth available in the study area, due to the excellent preservation of archaeological features, the second that residents viewed Kanaio as composed of a number of different and competing groups. This combination of historical depth and cultural complexity reinforced the original impetus to choose the *genres de vie* approach as a way of organizing preliminary field and archival activity.

At least on Maui, the first phase of fieldwork was intertwined with that of the second of archival research (table 2.1 item II). Preliminary archival enquiries at various offices in Honolulu, the State Historic Sites Division and State Archives, provided needed information about past and present land ownership, descriptions of land use at the time of the Māhele (1846-49), and what limited archaeological work had been conducted more recently. The next step was to return to Maui, conducting further archival research in the County offices and the archives of the Maui Historical Society as well as some initial fieldwork in the two *ahupua'a* of Kanaio and A'uahi (table 2.1 item III).

The archival sources on Maui, especially the rich collection at Maui Historical Society, greatly expanded the range of available data. This was especially so for archaeological sites and legendary sites material, and personal reminiscences about the area by early settlers like Inez Ashdown. A key resources was the comprehensive file of archaeological and legendary sites for the island of Maui collected by Elspeth Sterling, which she had been working into a book to be titled Sites of Maui (1966-71), of the same format as her Sites of O'ahu (1978) before her untimely demise halted the project at the initial stage. Informal contacts provided further suggestions of knowledgeable persons to contact for interviews and some initial insights into the complex settlement patterns present in the contemporary community of Kanaio.

At this point, the available data were sufficient to introduce an initial series of concepts needed to order an evolving collection of codes and memos. These codes provided guidelines for the third phase of field investigations (table 2.1 item III), which were aimed largely at clarifying various physical features of the landscape, defining vegetation zones, and observing general patterns of human use. The *genres de vie* approach and the first concept (human-environment relationships) were key to clarifying code within and from this initial

data (table 2.1 items I-III).

Upon return to O'ahu further archival research was needed to clarify many initial puzzles, notably current patterns of vegetation and areas of past use in Kanaio-A'uahi, all of which had been highlighted through trying to validate codes and memos generated in the field. At the Bernice P. Bishop Museum, attention focused on the unpublished material by Peter Chapman and especially his interviews with Sam Po. Another key source, as already noted in chapter one, was Jane Resnick's (1977) examination of the dry forest system in Honua'ula. These and other materials, especially the geomantic texts of Waialeale (1834) and Haleole (1863, 1862), greatly increased the quantity and quality of pertinent historical data and, in turn, suggested the application of concept two (cognitive mapping), concept three (conceptual landscapes), and concept four (landscape as signifier)(table 2.1).

The second concept, cognitive mapping, was suggested specifically by the Sam Po material (Newman and Sterling 1971, Chapman and Sterling 1968, 1966, Sterling 1967a, 1967b, 1966, Pukui and Williamson 1966), which discusses at length named places and affiliation, supported by the detailed reporting in Sterling (1966-71) and Ashdown (1977a, 1977b, 1970)(table 2.1, items II, III). A number of codes were generated from this new information, many of which were to require further verification, notably during interviews with residents. Conceptual landscapes, the third concept, was triggered by the same source material. Concept four, landscape as signifier, was brought into the analysis from reading not only the Sterling manuscripts (1966-71) but also the older Waialeale (1834) and Haleole (1863, 1862) accounts of geomantic rules in traditional Hawai'i (table 2.1 items II, III).

At this stage of research, the goal was to define probable lines of enquiry and test the efficacy of grounded process. It involves a steep learning curve on the part of the investigator, given the persistent need to reexamine evidence previously analyzed. The almost daily processing of new data into codes and memos must become a standard procedure. So different is this from the conventional and more linear sequence of research when following the scientific method that it takes time to organize an appropriate and effective field schedule. In addition, the ongoing possibility of introducing concepts requires constant reevaluation of all existing codes and memos to determine if data can be organized into new patterns. As a result, research enquiries follow a cyclic rather than a linear process of data collection, then the analysis and introduction of new codes and memos, followed by yet further collection of field data--an interactive process that continues throughout the lifetime of a particular project.

TABLE 2.1

FIELDWORK SCHEDULE

I. Initial Research Development [1990]
   A. Theoretical development and conceptual selection. *Grounded Process, Genres de Vie.*
   B. Keone'ō'io Summer Field School mapping project [6/90-7/90].
      1. relationships with *mauka* components and Pi'ilani Trail.
   C. Initial Kanaio-A'uahi field investigations [9/90]. *Genres de Vie.*

II. Initial Archival Research [1990-91]
   A. Māhele records. *Concept I: Human-Environment Relationships.*
   B. Prior research (Farrell, Handy, Huetz de Lemps). *Genres de Vie; Concept I: Human-Environment Relationships.*
   C. State Historic Sites records. *Concept I: Human-Environment Relationships.*
   D. Kanaio-specific research (Chapman, Resnick). *Genres de Vie; Concept I: Human-Environment Relationships.*
   E. Maui County records. *Concept I: Human-Environment Relationships.*

III. Initial Field Investigations [1991]
   A. Field Reconnaissance [7/91-8/91]
      1. Examination of physical landscape patterns. *Concept I: Human-Environment Relationships.*
      2. Develop parameters for archaeological survey. *Genres de Vie; Human-Environment Relationships.*
      3. Initial observations of contemporary settlement/use patterns. *Genres de Vie; Human-Environment Relationships.*
      4. Begin experiential diaries. *Concept V: Experiential Landscapes.*
   B. Maui Archival Research [7/91]
      1. Maui Historical Society (Sterling, Ashdown). *Genres de Vie; Concept I: Human-Environment Relationships.*
      2. County Records. *Human-Environment Relationships.*

TABLE 2.1 (cont.)

IV. Intensive Field Investigations: Phase 1 [1991-92]
  A. Archaeological Site Inventory [12/91-1/92]
    1. Identity and inventory archaeological sites. *Concept I: Human-Environment Relationships; Concept III: Conceptual Landscapes; Concept IV: Landscape as Signifier.*
    2. Initial observations on historical/contemporary use (hunting, fishing, New Age sites). *Concept I: Human-Environment Relationships; Concept III: Conceptual Landscapes; Concept IV: Landscape as Signifier.*
    3. Relationship of archaeological sites to botanical zones. *Concept I: Human-Environment Relationships.*
  B. Initial Field Interviews [1/92]
    1. Knowledge of past landscapes. *Concept II: Cognitive Maps; Concept III: Conceptual Landscapes; Concept IV: Landscape as Signifier.*
    2. Perception and value of contemporary places. *Concept III: Conceptual Landscapes; Concept IV: Landscape as Signifier.*
  C. 'Ulupalakua Ranch Records [12/91]
    1. Archival material. *Concept I: Human-Environment Relationships; Concept III: Conceptual Landscapes.*
    2. Interviews. *Concept II: Cognitive Maps; Concept III: Conceptual Landscapes; Concept IV: Landscape as Signifier.*

V. Intensive Field Investigations: Phase 2 [1992]
  A. Archaeological Site Inventory [6/92]
    1. Resolve mapping/archival anomalies. *Concept IV: Landscape as Signifier.*
  B. Contemporary Community [6/92-8/92]
    1. Interviews: beliefs/attitudes of Kanaio-A'uahi. *Concept II: Cognitive Maps; Concept III: Conceptual Landscapes; Concept IV: Landscape as Signifier; Concept VI: Time-Space Allocation.*
    2. Relationship of archaeological sites to contemporary use. *Concept III: Conceptual Landscapes; Concept IV: Landscape as Signifier.*
    3. Mapping of residential and use patterns. *Concept I: Human-Environment Relationships; Concept III: Conceptual Landscapes; Concept IV: Landscape as Signifier; Concept VI: Time-Space Allocation.*

Table 2.1 (cont.)

4. Examination of surrounding regions
   a. Tourism: Mākena-WaiLea. *Concept I: Human-Environment Relationships; Concept III: Conceptual Landscapes; Concept IV: Landscape as Signifier.*
   b. New Age: Pā'ia-Makawao. *Concept III: Conceptual Landscapes; Concept IV: Landscape as Signifier.*

VI. Archival Research [1993-94]
   A. Bureaucratic Views of Kanaio-A'uahi [1993-94]
      1. DBEDT archives: Geothermal projects. *Concept I: Human-Environment Relationships; Concept III: Conceptual Landscapes; Concept IV: Landscape as Signifier.*
      2. DLNR Forestry archives: Kanaio Natural Area Reserve. *Concept I: Human-Environment Relationships; Concept III: Conceptual Landscapes.*

First Concept: Human-Environment Relationships

This concept assumes that the cultural landscape will reflect the dynamic relationships between the physical environment and behavioral aspects (the beliefs, values, and attitudes), of human populations. Among communities residing in or exploiting Kanaio-A'uahi, various cultural demands come into conflict both nowdays and in the past. Through various patterns of social behavior, both individuals and groups either will modify these physical parameters or adjust to them. In extreme cases where habitation or use of particular landscapes can be life-threatening, as on the upper slopes of active volcanoes, the group may downplay or ignore such an environmental hazard if it conflicts too severely with the prevailing definition of what constitutes the cultural landscape. As cultural landscapes evolve and are modified by group behavior, so patterns of residential activity within Kanaio-A'uahi can be compared with that for other areas in Hawai'i, where similar physical characteristics are or were perceived as being within similar cultural landscapes. This allows for comparative discussion and analysis of differing areas and regions throughout Hawai'i (figure 2.2).

The human-environment tradition has been the dominant intellectual force for anglophone geography in the Pacific, in part regional geographies of the Pacific were derived from this tradition, in part because the concept of 'islands as controlled laboratories' made a

oceanic realm attractive for scientific enquiry. The diversity and dominance of the approach can be range of interests of some of the major practitioners: Tim Bayliss-Smith (1988), whose interests focus mainly of cultural ecology, rural agricultural systems and development in the central Pacific; Richard Bedford (1987, 1980, 1977) with main efforts in economic and social development issues in Melanesia; Harold Brookfield (1984, 1975, 1964) who in some ways is so eclectic as to define any central focus, but who has studied social impacts of rural development in Melanesia, but also extends out of the human-environment tradition to examine theory and method in human geography; R. Chandra (1983) with major research in rural development in Fiji; W.C. Clarke's (1994, 1990, 1987) research in a number of areas, but most emphasis on human ecology, rural and regional development issues in Melanesia.

A common spatial pattern is the emphasis on research in Melanesia and central Polynesia, a pattern followed by one of the more eclectic members, John Connell (1991, 1988, 1987) who has moved between ethnic identity and political structure, regional development and economic systems, and human ecology, again mainly within Melanesia; P.H. Curson (1979) who has focused on economic development and human ecology in central Polynesia; Larry Grossman (1984, 1977) with research into human ecology and rural development in Melanesia; Harley Manner (1984, 1977), who is one of the few to conduct intensive research in Micronesia, though he has also examined human ecology issues in Melanesia; Randy Thaman (1994, Thaman and Clarke 1983) who also focuses mainly on rural regional development and human ecology issues as does Nigel Wace (1980), both in the central Pacific, while Peter Pirie (1972a) and R. Gerard Ward (1986, 1980) tend to have emphasized human ecological issues within the context of population geography in the central Pacific. While the geographical area under examination is restricted and common themes of interest persist throughout, the dominance of development-based issues underlies the majority of the research. This is likely responsible for the fact that the human-environment approach has become diffuse in terms of shared concepts since the late 1970s. Yet all who work within this genre share the concept of cultural landscape as reflecting the close interaction between social behaviors and environmental attributes in a form susceptible to rational analysis and scientifically-structured enquiry.

This particular school includes Bryan Farrell, the only geographer operating within the anglophone tradition to conduct contemporary research on Hawai'i. His particular interest has been tourism and development, with a theoretical concern for the structural components imbedded with the human-environment domain. An emphasis on changes over long swings of time and their social impacts are typical of this orientation, as can be seen in both his book, Hawaii, the Legend that Sells (1982), and previous studies of Pacific tourism (Farrell 1979, 1977).

Approach	Positive Aspects	Criticisms
Genres de Vie	Avoids positivist/non-positivist dilemma	Often becomes very localized/parochial
	Holistic orientation	Can often be emic in analysis
	Regional orientation	Strong regionality makes comparison/ contrast difficult
		Lack of general synthetic statements
Human-Environment Relationship	Adds historical dimension and dynamic	Traditionally not explicitly theoretical
	Structured positivist approach	With science orientation comes inclination to use positivist/biological science logic
	"Scientific"	Tendency to focus on detail and shift to the static at the cost of the dynamics of the cultural landscape
	Generates information that can be compared with other places/ people-other cultural landscapes	Tendency to downplay/ ignore non-rational actions and aspects of cultural landscapes if not observable
	Basic premises of holistic dynamic though often not reflected in studies	

FIGURE 2.2

CONCEPTUAL SUMMARY

Approach	Positive Aspects	Criticisms
Cognitive Maps	Attempt to acquire quantitative measures of cognitive patterns of individuals	Inappropriate methodology
		Shift from individual to group not justified
	Inherently spatial	
Conceptual **Landscapes**	Useful analysis of built environment	De-emphasis on physical landscapes
	General concepts allow synthetic, comparative statements of different cultural landscapes	No complex man-land dialectic
		Change as vignettes-no emphasis on process
	Close links to archaeological and historical approaches	Logic of analysis not always clear
Landscape as Signifier	If valid can be applied to past cultural landscapes	landscape is explicit communication form not proven
	Allows integration of visible and conceptual patterns of landscape	Methodologies borrowed from other disciplines
		Effective only with
	Deals with physical evidence	built environment

FIGURE 2.2 (cont.)

Approach	Positive Aspects	Criticisms
Experiential		
Landscapes	Good at illuminating non-rational aspects of cultural landscapes	Individually focused Lack of theoretical logic between individual and group
	Provides a good theoretical and methodological balance to overly positivist-etic-functional concepts	Very emic Not possible to compare cultural landscapes
	Dependence on modernist participant observation	Has become key to post dialog
Time-Space		
Allocation	Integrates space and time	Presumption that individual actions reflect group values
	Very effective quantitative methodologies	Can be overly functional/positivistic
	Provides a strong conceptual logic encompassing both latent and explicit aspects of cultural landscape	Lack of research in non-western settings

FIGURE 2.2 (cont.)

As with the biological sciences, from which many of the basic assumptions that structure the human-environment approach were taken, in the last thirty years major paradigm shifts from simplistic modeling to analyses of complex systems have radically modified the approach (figure 2.2). In an attempt to deal in more detail with multivariate structures a number of practitioners have turned to concepts borrowed from rational economics (Norton 1989) or behavioral psychology (Aitken 1991, Ericksen 1980, Golledge and Stimson 1987, Norton 1987).

For several reasons, the concept of human-environment relationships became part of the Kanaio-A'uahi research:

It has been the dominant intellectual approach taken in studying cultural geography in the Pacific and has been applied successfully in a number of island situations;

It derives from a theoretical tradition which espouses comparative study, exemplifying a basic premise of the scientific-rational school of investigation that data and explanation developed for a particular set of physical and cultural attributes can be compared to similar situations elsewhere; and it fits logically with the dominance of certain physical characteristics throughout Kanaio-A'uahi, especially water, and with the inherent risk presented by recent lava flows, high winds, and dangerous near-shore conditions that are such a visible part of the physical landscape.

The ability of such an integrative concept to organize diverse material, much of it about the physical environment (soil surveys, vegetation studies, geological analyses) and to link these to deriving a clearer picture of past landscapes of Kanaio-A'uahi was became crucial to the success of field enquiries. Similarly, an ability to suggest explanatory codes during the archaeological survey also was instrumental in advancing discussion about changing patterns of land use in the Kanaio-A'uahi community.

Second Concept: Cognitive Maps

The conceptual assumption of the cognitive map is that images and labels of a landscape mainly reflect the social values of the viewer, observer, or participant (figure 2.2). For Kanaio-A'uahi, it was expected that places with a shared identity, along with their opposite, locations that carried no such identity or label. Similarly, linguistic and cultural affiliations to the land. Both divergent and shared views of a landscape are reflected in cognitive maps that can be elicited from acceptance by a group involved, in this case Kanaio residents. An extension of this reasoning is that the common location's names reflects not only its empowerment but also cultural validation of having control over that location.

The formal naming of the Kanaio-A'uahi area is relatively simple. At present there are few, commonly accepted names, partly as a result of limited interaction with the rest of the island of Maui and partly because archival records indicate many names have disappeared from the contemporary landscape. On the one hand the divergent groups making up Kanaio share a number of named places as residents, but on the other many other names are shared only by members of a particular group. These locations, both those simply named, and those which have become labeled by a story or situation as naming device, have become a kind of

boundary marker or summary of territorial control. Details such as these can provide a number of key codes and memos for examining shared and competing cultural landscapes throughout Kanaio-A'uahi.

As already noted, a key concept in mental mapping is that the spatial patterns generated in the minds of individuals can reflect both personal and group views of a cultural landscape (Gould 1966). A major difficulty with applying this approach, and a major factor in its near demise, has been the difficulty of an appropriate methodology to elicit such 'internalized maps'. As with natural hazards research undertaken within the compass of the human-environment school, many of the theoretical premises and methodology for mental mapping borrowed from social psychology. In turn, questions about the applicability of psychological premises to the spatial concerns of cultural geographers, along with a lack of theoretical rigor sometimes characteristic of uncritical borrowing from cognate fields, seriously challenged the validity of this approach (Goodey and Gold 1985)(figure 2.2).

In common with most of the human-environment tradition, the application of mental mapping to parts of Hawai'i has been limited. The only direct examples were part of a summer field school in human ecology conducted in the early 1970s, mainly by anthropologists and geographers from the University of Hawaii at Manoa (Armstrong and Lewis 1972, Bostwick and Murton 1976). Other isolated instances of mental mapping are found in graduate research (Morgan 1978) but, as with natural hazards research, no attempt was made either to build on and expand this field experience or develop a more comprehensive theoretical position (Bostwick and Piianaia 1972).

Third Concept: Conceptual Landscapes

Conceptual landscapes reflect an assumption that group values and attitudes will be manifest in both the built environment and aspects of material culture. The material appurtances, decisions on how to use the land, and built structures of an area as much as the communications between individuals and groups are based on a functional rationality (figure 2.2). In Kanaio-A'uahi this implies that material structures of present and past places, modified by human residence and areas by choice left pristine, reflect the values and attitudes of their occupiers. Locations of social importance, usually ritual significance, will be carefully inserted into the landscape to make a complex set of statements about control and vested ownership. By extension, as both members of groups and groups themselves change, so the construction, location, and nature of material remains will also change over time.

The concept of conceptual landscape derives from the tradition of landscape as signifier. It has been one of the most durable of humanist schools within cultural geography and

includes, among others, the seminal works of both J.B. Jackson (1984, 1970) and D.W. Meinig (1979, 1965) on vernacular landscapes and landscapes as social icons. Despite a range of research topics, common to all was the concern with human-modified landscapes, and it is within this conceptual literature that much of the debate has occurred on how to define and apprehend cultural landscapes with the work of Duncan and Ley (1993) on images of place and place as icon; Wilson's (1992) examination of culture and the built environment; Eyles (1990) geomantic logic and vernacular ritual place; Agnew and Duncan's (1989) edited volume examining cross-disciplinary research, specific linked to perception and ritual place, Vale and Vale's (1989) key study that links images of place and the built environment; Goss' (1988) examination of the social aspects of the built environment, Cosgrove (1984) on symbolic landscapes as an artifact of social patterns, Rapoport's (1980, 1976) work on built environments, landscape as communication, and geomancy; and, Duncan (1976) on how landscape enhances verbal communication. An example of this view of the cultural landscape can be found in Jackson (1984):

> ...landscape is not a natural feature of the environment but a SYNTHETIC space, a man-made system of spaces superimposed on the face of the land, functioning and evolving not according to natural laws but to serve a community for the collective character of the landscape is one thing that all generations and all points of view have agreed upon. A landscape is thus a space deliberately created to speed up or slow down the process of time...
>
> Landscape: a composition of man-made or man-modified spaces to serve as infrastructure or background for our collective existence...

To consider landscapes as conceptual statements has been popular in historical geography represents an outgrowth of the human-environment theme initiated by Carl Sauer (1952, 1925). A common criticism, given the focus on the sequential and dynamic nature of cultural landscapes, was the lack of interest in physical processes--what Jackson refers to as natural features--as an active agent. Thus while the human population is seen as a dynamic force, within the notion of conceptual landscape there is not the underlying premise of rationality incorporated within more scientific approaches to the links between people and their environment such as is found in cultural ecology (figure 2.2). On the other hand, some limited attempts have been made to impose a more rigorous semiotic structure on the inherent flexibility of conceptual landscapes (Duncan and Ley 1993, Smith 1988).

Major efforts within geography has focussed on the built environment as signifier--a key interdisciplinary area of landscape research, undertaken by geographers including Chapman's

(1990, 1987) on local knowledge, perception and migration in Melanesia; work by Powell (1977) on the role of perception on large-scale migration in North America; and a discussion of ethnic identity and empowerment for Maori in New Zealand by Stokes (1987) and Murton (1987). There are also a number of more theoretical works such as that by Chapman (1991) on perception and migration; Murton (1972) on perception and cognition; work by Goss (1988) that links discussion of the built environment to semiotic structure; other theoretical discussions on perceptions and values of place by Duncan (1985, 1976, Duncan and Ley 1993), and similar conceptual developments by King (1984, 1980).

Work in related disciplines includes that by a series of omnibus studies of residential house forms by anthropologists such as Duly (1979) and residential settlement patterns by Fraser (1968) along with major conceptual contributions by Rapoport (1980, 1977, 1976) to cultural aspects of specifically the built environment and perception of place in general. Sociologists such as Griffith (1992) have examined the ritual built environment in the American southwest; more general, conceptual work of Agnew (Agnew and Duncan 1989); a seminal work within this school is that of a group of architects examining built environment as social communication in Las Vegas (Venturi et al 1977); while social psychologists such as Altman and Werner (1985) focussed on perceptions of home.

Despite varied theoretical lineage, all these studies share the basic premise that humans are the active agent and the natural environment the receptive or passive voice in the evolution of the cultural landscape. The expansive nature of this subject area also means that, not surprisingly, the idea of conceptual landscape among anglophone geographers in some respects resembles the *genres de vie* approach among the francophone. Within the Pacific, major attraction is the ability to discuss perceptual landscapes within varied cultural contexts, as has been used widely to consider cultural territories outside the euroamerican situations with the work of Chapman (1990, 1987), Murton (1987, 1972), and Stokes (1987) noted above.

Architectural historians have extended the conceptual landscape approach by applying semiotic principles to the built environment as if it were a formal linguistic system. With this premise the human-modified landscape becomes a symbolic text to be decoded and read, in what Preziosi (1979a, 1979b) labels architectonic analysis. Heavily reliant on semiotic theory, in fact the underlying assumptions of this genre are anchored in research on proxemics (Hall 1966) and in environmental psychology and anthropology during the 1960s and 1970s. Although a major focus of research in the field of communications, proxemic studies have not been pursued much in either anthropology or geography, apart from those anthropologists interested in spatial aspects of culture (King 1976). A major criticism of architectonic analysis is how applicable to the cultural landscape are concepts and

assumptions imbedded in systems of structural linguistics, without any research showing theoretical coincidence or correlation between the two. The broader issue is the danger of borrowing theoretical concepts without concern for their intellectual integrity (figure 2.2).

Fourth Concept: Landscape as Signifier

That the placement of structures in the built environment, especially those of communal significance, will be located within the symbolic and ritual worldview of the group is the basic assumption of this concept (figure 2.2). Such structures then serve as symbols to both validate and legitimize a group's control of the land. This is a key issue in Kanaio, where the location and density of sites of traditional ritual (*heiau*) is unusual compared to other locations on Maui. From the past into the present, various groups have competed for land access and control, so that the placement of Honua'ula Church in an area of numerous *heiau* can be seen as a statement of either ritual continuity or power groups in competition. Contemporary struggles for land control, usually defined by the location of material structures like temples, shrines, boundary fences and gates, continue to be so significant to those involved that much of the cultural landscape of Kanaio and A'uahi was defined in these terms.

Within cultural geography, as implied in the previous section, the concept of landscape as signifier has been considered as an extension of that of conceptual landscape and rarely examined separately. Often, in both archaeology and architecture, the idea of placement is seen as separate from form and consequently analyzed as the geomantic component of cultural worldview (Kent 1987, Cherry and Renfrew 1986), while the signifying role of large ritual structures in the built environment always has been a major component of archaeological analysis. More explicitly spatial analysis has been triggered by field research in several areas, notably Central and South America, where both historical records and ethnoarchaeological enquiries have indicated the prevalence of geomantic procedures in selecting sites for settlement, holy places, or statements of political dominance (Griffith 1992, Hyslop 1990, Vogt 1969). Despite the difference in disciplinary labels, cultural idealism and contextual archaeology are synonymous in having the major goal of eliciting symbolic and cognitive information from the material remains of a culture. Such logic and has been applied increasingly by archaeologists, although a common criticism is the absence of complete theoretical proof in many studies and the frequent reliance on reasoning by analogy (Kent 1987).

Intermediate Phases of Field Research

This phase of field research in Kanaio-A'uahi, the third and fourth periods (table 2.1), contained most of the primary survey of archaeological features and contemporary landscape, supplemented by archival work at 'Ulupalakua Ranch, limited onsite interviews, and the initiation of a field diary.

By itself, the third phase was so diversified, because a major goal was to enhance the initial data in areas where previous reconnaissance had indicated major gaps. The first need was to complete a map of past and present patterns of land use, specifically of residence compared to ranching and of which usages were versus limited and which restricted--like for the national guard firing range at Pimoe (map 4.1). Also, it was time to begin entering field impressions in a daily diary, since a substantial amount of archival material had been analyzed and Kanaio-A'uahi had been visited several times. The sixth concept, time-space allocation, was added once a preliminary map of land use had been completed, since the constant flow of residents and visitors into and out of Kanaio-A'uahi was now far more evident. Appreciating this ongoing flow reflected a significant improvement in efficiency of observations, mainly due to camping onsite rather than transiting from beyond the region.

The addition of the concept of experiential landscapes, the fifth, occurred as field enquiries became more tightly tied to the land and people and, in turn, simplified the recording of perceptual aspects. Most primary enquiries during this phase, however, focused on issues identified in the earlier two phases. Similarly, the need for more detailed data meant that most effort was spent in elaborating and modifying codes and memos defined from considering the first four concepts (human-environment relationships, cognitive maps, conceptual landscapes and landscape as signifier; table 2.1).

The fourth field phase, in contrast, consisted largely of archaeological field surveys, designed to establish past cultural landscapes but in the end contributed a mass of data in several areas. A major expansion of the field diary, was mirrored in the elaboration of concept five, experiential landscape, which in turn reflected continual exposure to all sections of the *ahupua'a*. As the study area had to be covered on foot, data were collected on not only surface archaeological features but also vegetation profiles, geologic indicators (especially patterning of lava flow and underground tube systems), and contemporary patterns of land use. Examining the 'Ulupalakua Ranch archives added historical depth to much of this material, especially in terms of land control and use during historic times. This constant enlargement of the matrix of field information meant continued reworking of the first concepts on human-environment relationships and the third about conceptual landscapes,

especially as details obtained through archaeological mapping began to integrate with those in the Sterling manuscripts (Sterling 1966-71) and with the interviews Chapman and others did with Sam Po (Newman and Sterling 1971, Chapman and Sterling 1968, 1966, Sterling 1968, 1967a, 1967b, Pukui and Williamson 1966). Attempts also were made, through the concept of landscape as signifier, to integrate newly acquired field data with archival material on geomancy, but with less success.

Several interviews conducted during field surveys not only provided pertinent data to the concept of landscape as signifier but also stimulated further interest in contemporary geomantic patterns among the New Age community of Upper Kanaio (chapter 4), an important topic for ongoing assessment of codes and memos. The major impetus from interviews was to examine again and reorganize data in terms of concepts two and three, cognitive maps and conceptual landscapes. It became clearer, during this period of field activity, that what initially had been noted as rational decisions of land use, especially for ranching, in fact were far more influenced by social patterns and deeply held values among early settlers. Intellectually, during this phase, a shift in emphasis similarly became clear, as interview and other detailed information suggested more humanistic concepts, compared to more rational ones that dominated early enquiries when most data was observational. This intellectual shift was stimulated by the sequence of grounded process, as information obtained from interviews and detailed field observation could only be organized in codes and memos that, in turn, derived from several concepts of landscape (conceptual landscapes, landscape as signifier, experiential landscapes).

Fifth Concept: Experiential Landscapes

This concept reflects the assumption that all perception, and thus the collection of all field data, is filtered by the individual through an emotional-perceptual framework (figure 2.2). As a result, personal biases when actually acquiring primary information,on the part of both collector and giver, largely defines the strengths and weaknesses of field data and field research. Direct acknowledgement of this social dialectic and the appropriate methodologies can lead to an introspective analysis of an individual's relationship with particular cultural landscapes.

1 (6/10/90): Specialized knowledge held by residents

2 (6/10/90): Military destroying sites at Pimoe- Government. impact/disinterest.

3 (6/10/90): Water shortage/hidden water sources. *Human-Environment Relationships*

4 (9/21/90): Mist/rain/vegetation relationship. *Human-Environment Relationship*

3a (9/21/90): Water/soil/planting patterns. *Human-Environment Relationships*

5 (9/21/90): Kukui in Lanikaula grove- imported/planted trees, not just visible human constructs but also vegetation patterns. *Conceptual Landscapes, Landscape as Signifier*

6 (9/21/90): Visible vegetation/landform variations between Kanaio-A'uahi-- not visible aspects but emotional. *Experiential Landscape*

7 (9/26/90): Kanaio-Kalo'i boundary and landform variations. *Landscape as Signifier*

8 (9/26/90): Presence/importance/dominance of *wiliwili* in lower sections. *Human-Environment Relationships*

9 (9/26/90): Quality and livability (or lack of) in East Homesteads area.

10 (7/4/91): Concept of Kahikinui

11 (7/9/91): Concept of emptiness/space. *Experiential Landscape*

6a (7/10/91): Kanaio-A'uahi variations

4a (7/13/91): Mist/rain/vegetation patterns. *Human-Environment Relationships*

8a (7/15/91): Relationship of *wiliwili* groves and built sites. *Human-Environment Relationships*

6b (7/15/91): Presence of *pukiawe* (Kanaio) and absence (A'uahi), vegetation patterns/trees

12 (7/15/91): Emotional links to A'uahi. *Experiential Landscape*

13 (7/15/91): Dry forest patterns/locations/composition

14 (7/19/91): Vegetation and built environment relationships. *Human-Environment Relationships, Conceptual Landscapes, Landscape as Signifier*

15 (7/29/91): Vegetation change and site change with elevation- the empty zone. *Human-Environment Relationships*

11a (7/21/91): Empty/visibility range

FIGURE 2.3

GROUNDED THEORY DEVELOPMENT FROM FIELD DIARIES

Italics indicates concept that organizes the Code

* indicates Memo development

Category indicates Category development

16 (7/21/91): Stark nature of coastal habitations. *Human-Environment Relationships*

*8b (7/22/91): *wiliwili* and built sites

17 (7/24/91): *Category* Development of historic land use reflected on landscape. *Human-Environment Relationships, Conceptual Landscapes*

*4b (7/24/91): Mist/vegetation and agricultural use

18 (7/24/91): Minimal pattern of built environment modifications to physical landscape. *Human-Environment Relationships, Conceptual Landcapes*

19 (7/24/91): Lack of evidence for *mauka-makai* food trade- suspicion that coastal area less important than usually thought. *Human-Environment Relationships*

20 (7/24/91): *Category* Importance of Honua'ula Church in 19th c. *Conceptual Landscapes, Human-Environment Relationships*

12a (7/25/91): A'uahi as emotional link. *Experiential Landscape*

21 (7/25/91): Emotional links to Kanaio. *Experiential Landscape*

*12b (12/19/91): Emotional links to A'uahi. *Experiential Landscape*

*12c (12/23/91): *Category* Emotional links to A'uahi

22 (12/23/91): Ritual links between *akua* and landforms. *Conceptual Landscapes, Landscape as Signifier*

15a (12/24/91): Lower empty zone

23 (12/25/91): Relevance/importance of Pi'ilani Trail

24 (12/25/91): Doubts about Po interviews and relevance to 1700 use patterns. *Human-Environment Relationships, Conceptual Landscapes*

19a (12/25/91): Lack of importance of *makai* community/resources

25 (12/25/91): Key nature of upland agricultural zone. *Human-Environment Relationships*

*3b (12/25/91): Water shortage and agriculture. *Human-Environment Relationships*

26 (12/25/91): Links between oral tradition and land patterns/water access. *Landscape as Signifier, Conceptual Landscapes*

*19b (12/25/91): Social logic for *mauka-makai* seasonal patterns

27 (12/26/91): Impacts of goats on vegetation. *Human-Environment Relationships*

*6c (12/27/91): *Category* Physical forms and *ahupua'a* boundaries. *Conceptual Landscapes*

*4c (12/27/91): *Category* Mist/vegetation patterns

17a (12/29/91): *Category* Shift in patterns of land use and vegetation. *Human-Environment Relationships, Conceptual Landscapes*

28 (12/30/91): Modern land systems as a reflection of traditional values. *Human-Environment Relationships*

FIGURE 2.3 (cont.)

*8c (1/1/92): *Category* *Wiliwili* groves and built sites. *Human-Environment Relationships*
*4d (1/1/92): *Category* Mist/cloud/land patterns. *Human-Environment Relationships*
*6d (1/4/92): *Category* Variation between *ahupua'a*
29 (7/6/92): Time geographic patterns and viability. *Time-Space Allocation*
30 (7/8/92): Cloud patterns and rain *heiau*. *Landscape as Signifier*
*4e (7/9/92): *Category* Rain/agricultural patterns
31 (7/11/92): Subtle impacts of tourism- bicycle tours and traffic
32 (7/12/92): *Category* Upper and Lower Kanaio as entities

Source: Appendix II

FIGURE 2.3 (cont.)

The experiential approach to a landscape is part of the existentialist tradition as seen in the work of Curry (1991) on a postmodern discussion of bias; Relph's (1985) exploration of perception and phenomenology; work by Schatzki (1991) on spatial perception, and a major figure in Tuan (1990) in perception, image and culture. A branch of this approach advocated the combining of these premises with those of the *Genre de vie* school, developing a theme of biographical landscapes (Buttimer 1982, 1976). Experiential landscapes, as especially articulated by Tuan (1990), are similarly phenomenological in their impulse and based in nonwestern views of the limits between people and their natural environment, articulated primarily within the Chinese intellectual tradition.

Common to these approaches is an intellectual focus on the individual and on "everyday life", explored usually from the reference point of a key informant or the investigator. In general, neither an explicitly scientific structure nor analysis based in comparative logic are considered a requirement of scholarly enquiry, which is consistent with an existentialist and phenomenological critique of traditional approaches taken by anglophone geographers. Not surprisingly, most criticisms of the concept of experiential landscape emphasizes the excess of introspection and that various such landscapes cannot be assessed comparatively (figure 2.2). What results is an illuminating analysis of an individual and introspective relationship with a particular physical landscape that, unfortunately, is neither useful for understanding the cultural landscape in general nor provides definitive information contrast with other cultural landscapes. Although the methodologies of observer as informant or emic participant are useful, their theoretical premise of subjective individualism limits the applicability of experiential landscapes to cultural geography (Curry 1991, Ley 1978, Norton 1989a).

The existentialist tradition is not a major feature of cultural geography in the Pacific, but some of the work by francophone geographers (Bonnemaison 1981) comes quite close to reflecting the goals of adherents of the experiential landscape approach.

Nevertheless, apprehending the introspective landscapes of such Kanaio-A'uahi residents and proceeding self-consciously through primary enquiries can aid greatly to the research process, as well as provide a working model of how grounded process operates in the field (figure 2.3).

Sixth concept: Time-Space Allocation

The assumption that social demands and individual goals are reflected in the use of decision about time and space is the basis of this concept (figure 2.2). Time-space allocation appears especially applicable to residents of Kanaio-A'uahi, given the relative isolation of their community from most consumption items. A good, if narrow, paved road connects them to locations in Kula or downslope in Wailuku-Kahului (map 1.1), from which almost all goods and services must be obtained. Residents often appear to be constantly in transit for one purpose or another, so that decisions about when, where, and for what purposes travel is initiated into and out of Kanaio-A'uahi would suggest that time-space allocation be an appropriate concept to try and apply.

Time-space allocation is a concept central to the approach of time geography, advocated originally by Torsten Hägerstrand(1982, 1978a, 1978b). In its original form, this was a complex and synthetic attempt to combine quantifiable data with behavioral patterns, based largely on information about the individual. According to Hägerstrand (1982:331):

> It is an axiom of time geography that the movements of an individual are restricted by the location in time and space of fixed points which must be respected. The time-spaces left free are defined by more or less symmetrical double cones, called prisms. This means the timetables of dominating institutions (family included) to a large extent determine indirectly where individuals, even when 'free', can act or be exposed to experience. (Hägerstrand 1982:331)

Despite early promise, time geography became criticized for the narrow focus of time-space allocation on rational, quantitative, and rigorously scientific enquiries (Thrift 1991, Kellerman 1989, Pred 1984, 1981, Carlstein 1982, Parkes and Thrift 1980)(figure 2.2). This was unfortunate, for the original goal was an approach where quantitative,

historical, and subjective materials could be woven into an individually-based description of how time and space link together within the cultural landscape (Hägerstrand 1978a, 1978b).

Conversely, some of the scholarly focus of time geography has been incorporated within research on, for instance, the movement of people, where time-distance relationships have long been seen as crucial (Chapman 1987). In general, such studies do not implement the full conceptual scenario of a time geographic approach, specifically the centrality of people's expenditure of time. Yet, ironically, being in some ways less rigid in their theoretical and methodological interpretation of Hägerstrand's original argument, they are also closer to its comprehensiveness and its applicability to the cultural landscape.

Final Phases of Field Research

During the fifth and sixth phases of this project, analyzing the cultural landscapes of Kanaio-A'uahi expanded at a dramatic rate, as field activity focused far more on clarifying codes and memos defined previously (table 2.1). Thus was emphasized a particular characteristic of the grounded process: that, initially, research enquiry is both disorganized and inefficient when compared to that following the scientific method, but later becomes highly focused, effective, and tightly tied to extant materials rather than being dependent on theoretical justification for its rationale. In 1992, the focus in finalizing the mapping of archaeological sites was to resolve questions about location, functions, and use, especially in respect to Hawaiian rituals, as well as to construct a detailed map of the Kanaio community (table 2.1). The need for this duplication of effort had been noted during definition of memos with the first concept on human-environment relationships. Although it had been predicted initially that sites would reflect particular features of the physical environment, the locations of both the archaeological data and early maps suggested that the situation was more complex. While some sites, especially agricultural ones, were explained by the obvious needs of soil and water, other and equally suitable areas remained unexploited in contrast to other and more marginal sites. Perhaps more critically, there appeared no functional explanation in either Kanaio or A'uahi for the location and density of both ritual features (*heiau*) or contemporary ritual sites, such as the Buddhist Temple (maps 3.1, 3.2, 3.3, 4.1).

The identification of alternative memos suggested that the notions of conceptual landscapes or of landscape as signifier might be more promising and further surveys were undertaken to evaluate far more rigorously assumptions imbedded within prior memos. From this it became apparent that many decisions about the placement of archaeological

sites, especially *heiau*, reflected ritual and symbolic concepts of land as well as the validation of power and local control (fourth concept). Even choices of placement and orientation made for agricultural and housing sites could only be understood in terms of the idea of conceptual landscape (third concept). This interplay between such different concepts and the constant reevaluation of their constituent codes and memos provided a valuable set of checks and balances to what otherwise might have become an overly simplistic validation of prior results.

A major focus of this final phase of fieldwork was interacting with contemporary residents in Kanaio (table 2.1). A review of codes and memos revealed that insufficient material on the present community, especially their concepts and values of Kanaio-A'uahi as a place. There was a similar need to clarify perceptions and attitudes elicited during earlier phases, which had suggested certain codes for which field data were inadequate.

At this time, the dominant concepts in code-memo definition and refinement were of experiential and conceptual landscapes (third and fifth). Ongoing elaboration also occurred with some earlier concepts, like the second of cognitive maps, but more recent data merely validated the existing codes and memos rather than suggesting newer lines of enquiry.

Evaluation of personal field diaries during this phase brought a key methodological issue during this phase that was unexpected and would not have been identified except for grounded process (table 2.3). This was that my views and attitudes about land changed in dramatic and direct relationship to the number of indepth interviews conducted at the same time. How self-impressions of Kanaio-A'uahi land use and control could be so influenced by the amount of social interaction through local interviews contrasted to earlier phases, like archaeological surveying or mapping of sites, where little such interaction occurred. The major impact of social interaction on the sequence of field enquiries and subsequent data analysis was striking, with particular implications for bias and self-perception of a researcher in any field setting.

The final phase of primary enquiries involved a survey of surrounding areas, especially Mākena-WaiLea, Pā'ia-Makawao and Kula (map 1.1, table 2.1). The need for specific images and impressions of them had become critical for clarifying codes and memos derived from conceptual landscapes and landscape as signifier (concepts three and four), since much of the interview material described situations or images about Kanaio-A'uahi by contrast to such other locations. Mākena-WaiLea, one of the major resort centers in Hawai'i, was the focus of Farrell's (1982) research on the tourism industry, and most residents expressed concern about uncontrolled development and impending collapse of traditional lifestyles. The images, construction, landscaping, even the use of Hawaiian words in naming of Mākena-WaiLea were viewed as primary examples of a powerful, yet competing cultural landscape that might soon engulf Kanaio-A'uahi. Increasing tourist traffic from

Mākena-WaiLea, which was traveling east along the improved road to Hāna (map 1.1) only served to reinforce this local sensitivity.

The Kula section of Maui, from Keōkea to Pukalani on the main highway (map 1.1), another cultural landscape frequently mentioned by residents, within expressions of broader concern. This is a section of Maui characterized by recent dramatic growth of expensive residences on small, so-called agricultural lots, again with major social and economic implications for more traditional communities farther to the east, and with little visible impression that planning controls exist (chapter 4). Already, such a pattern of expansion is beginning to be felt in Kanaio, with sharp rises in land prices during recent years and rumors of various housing projects beginning to circulate. As with Mākena-WaiLea, interest in the Kula area lay mainly with visible images formed from house construction and landscaping.

The need for clarification, since it involved the community of Upper Kanaio of a third peripheral area was more subtle, identified various philosophical aspects of New Age religions as having become major forces in the recent and future use of Kanaio land. Interviews during earlier phases also had become clear how perceptions of Kanaio between believers in residence and at other centers of New Age interest (centered on Makawao-Pā'ia-Haiku) was both subtle and complex. In order to clarify these relationships and future plans for Upper Kanaio, it was necessary to make enquiries at New Age sites in both sets of communities as well as to establish the ritual interest in Kanaio by Makawao-Pā'ia residents--often observed traveling to Kanaio for ritual activities. Since the symbology and liturgy of New Age ritual is borrowed from several sources (appendix III), it was important to learn how groups of believers on Maui incorporated conceptions of Kanaio within their religious system. In the end, field information made crucial contribution to clarifying a several codes and memos, especially those concerned with the second and third concepts, cognitive maps and conceptual landscapes.

As a result mainly of events that occurred toward the end of fieldwork, the final phase involved returning to archival sources in the Forestry branch of the Department of Land and Natural Resources (DLNR) and of the Department of Business, Economic Development and Tourism (DBEDT) geothermal office (table 2.1). Further information was needed on why the State of Hawaii had initiated eviction proceedings against a homestead family on Kanaio land and what lay behind the formal designation of the Kanaio Natural Area Reserve. In doing so, another series of codes and memos emerged about the image of the "Empty Quarter" and how that defines the State administration's view of Kanaio-A'uahi (chapter 4). First tied to the notions of conceptual landscape and landscape as signifier (concepts three and four), these codes and memos subsequently became refined by administrative actions about a geothermal power-line--in fact, one of the initial reasons for selecting Kanaio-A'uahi as an area for

study--emanating from another State agency (DBEDT). Research on archaeological sites and social impacts of this powerline, undertaken on contract by the federal Department of Energy, not only added a corpus of new information about how various parts held contested images of the areas cultural landscapes of the Kanaio-A'uahi community, but also defined further the broader image of the empty quarter.

These final phases of field and archival research reinforced the ability of grounded process to both accommodate unexpected situations and facilitate acquisition of appropriate data. They also demonstrated the flexibility of the method of codes and memos and the initial choice of concepts to incorporate difference circumstances and predict with some accuracy the unfolding of unanticipated events like the intervention of State and voluntary agencies. The ease with which, in this research, grounded process incorporated various modes of evaluation and refinement is the focus of the following two chapters. In these, the sequence of codes and memos chosen during fieldwork become incorporated into a series of discussions about the cultural landscapes, past, present, and future, of the *ahupua'a* of Kanaio and A'uahi.

CHAPTER 3

PAST CULTURAL LANDSCAPES OF KANAIO-A'UAHI

The major component of visible past cultural landscapes is the physical evidence of past activity. A key component of this study was an archaeological survey to locate and describe all visible archaeological sites within the *ahupua'a* of Kanaio and A'uahi. However this does not provide a very clear picture of past use, for as Kirch (1985) has noted, not only has Maui been less intensively studied by archaeologists than either O'ahu or Hawai'i but there has also been a lack of any published synthesis of the archaeological or historical record for any section of the island. In addition most of the research done has been motivated by legal constraints related to the environmental impacts of developments rather than by comprehensive research designs, leaving the work descriptive in nature. The only attempt at a regional synthesis was the Kahikinui research conducted in 1966 under the direction of Peter Chapman, which unfortunately remained uncompleted after his death.

Large-scale development has generated over forty archaeological studies in just the Kihei-Mākena coastal area of central-east Maui, but they are small in scale, descriptive, and make no significant attempt to discuss the larger leeward-zone context of past land use (Clark and Dixon 1993, 1992, Donham 1992, 1990a, 1990b, Jensen 1992, Clark et al 1990, Gosser and Cleghorn 1990, Roe and Cleghorn 1990, Kennedy and Bigelow 1989, Dobyns 1988, Jourdane 1988, Kennedy 1988, Shapiro and Haun 1988, Dicks and Haun 1987a, 1987b, Haun 1987, 1978, Rosendahl 1984a, 1984b, 1981a, 1981b, Bath 1983, Shun and Streck 1982, Bordner and Cox 1981, Environment Impact Study Corporation 1981, Sinoto 1981, 1978a, 1978b, Bordner 1980, Schilt and Dobyns 1980, Dye 1979, Rogers-Jourdane 1979a, 1979b, Schilt 1979, Sinoto and Rogers-Jourdane 1979, Cordy 1978, Davis and Bordner 1977a, 1977b, Hommon 1976, Cleghorn 1975, 1974, Barrera 1974, Clark 1974, Walton 1972, Kirch 1971, 1970, 1969). Most of these projects were limited to surface surveys, though in a few cases limited test excavations were conducted (Kirch 1985, 1971).

The utility of this body of research is further limited by the lack of continuity in most of the study areas--rarely was the same group of researchers employed for different phases of the same project which resulted in little or no continuity of research interests or techniques even within the same specific study area. Despite over forty studies and an impressive sum of

money the only useful summary has been developed by Kirch (1985) for this portion of east Maui.

The most accepted view of early Hawaiian settlement was that of a population structured around wet-field (i.e., *lo'i*) subsistence. Early population concentrations are predicted for areas most suitable to *lo'i* systems, with population based mainly on the windward sections of the major islands, such as the Ke'anae to Hāna section of east Maui (map 1.1). An extension of this argument is that the leeward or dry portions of the islands were exploited on a seasonal or situational basis but otherwise did not see any significant land use or residence until the 14th century (Kirch 1985).

Expansion into the leeward zones in this period is posited to reflect sociopolitical changes in Hawaiian society resulting in the collapse of kin-land relationships and the definition of *ahupua'a* boundaries (Dye 1989, Hommon 1976). Radiocarbon dates for the Mākena area indicate that major occupation and land modification began in the mid-16th century, which also holds true for the Kahikinui dates (Kirch 1985). Demands of the new political hegemony for food surpluses, combined with an ever-increasing population, forced the Hawaiian population to expand into more marginally productive agricultural zones such as Kanaio-A'uahi.

This model is both overly simplistic and biased heavily towards the highly visible *lo'i* agricultural systems. As Handy and Handy (1972) note, there was a very large repertoire of dryland crops available to the Hawaiian farmer prior to the introduction of the *'uala*. Dryland *kalo* and a number of different varieties of yam were apparently cultivated in various regions, but as they do not leave as visible of indicators the retaining walls, leveled areas, and irrigation systems common to *lo'i* systems the result has been a tendency to downplay their significance. In addition as this area of traditional agriculture quickly disappeared after European contact there is little remaining information on either crop yields or even percentage of land devoted to dryland production. This, combined with the dominance first of the sweet potato and the higher social prestige of the *lo'i kalo*, focussed consumption and interest during the historic period on *kalo*, leaving a very muddy trail to follow in clarifying agricultural land use decisions in precontact Hawai'i.

Kirch has noted (1985) that extensive clearing and a recession of the dry forest occurred in Lapakahi and the Kona Field System (both on the island of Hawai'i) during the development of complex dry field systems. However his analysis did not include the research done by Resnick (1977) and others on the condition or climatic impacts of dry forest regimes. The mist drop noted by Resnick (1977) would have provided sufficient moisture above 1500 foot elevation in Kanaio and A'uahi. Below this elevation, with mist no longer a factor, rainfall, spring water, and limited soil would have been limiting factors. As discussed in the

Introduction the key factor appears to be the height of plants, which collect and catch the moisture, providing sufficient moisture for Hawaiian dryland crops.

Above the 1500 foot elevation it is likely that effective food production was directly linked to preservation of the dryland forest tree cover. In the *makai* sections (below 1500 feet), food production would have been limited by water demands to seasonal exploitation of various *kīpuka* with temporary water flow. In Kanaio-A'uahi the use of traditional dryland crops seems to have continued into the historic period alongside the newer introductions, as the Land Commission Award testimony for upper Kanaio contains several references to *kalo* production (appendix IV).

The Development of Religious Centers

The traditional accounts describing the development of religious centers or *heiau* location are limited in number, but generally reflect the statements made by Kamakau (1964), who notes that *heiau* went through evolutionary stages, from *mu'a Lono* or agricultural *heiau* to more significant *heiau*, finally moving to *luakini* or sacrificial *heiau* status (Kolb 1992, 1991). Most *heiau* did not complete the cycle, and given various political and religious factors, many *heiau* were demoted or completely abandoned.

Applied to the situation in Kanaio, it suggests that the large number of *heiau* noted in the oral tradition may reflect the genealogical tradition of Lower Kanaio families who state that founding ancestors were part of the Kamehameha I ordered migration of Kohala *kahuna* to the area combined with the recent (1790?) lava flow in the immediate vicinity. Given that religious sites went through periodic change, the concentration of *heiau* in Kanaio may be reflective of this Kamehameha I induced migration to the area, in part possibly prompted not only by the dictates of Kamehameha but also the then-recent manifestations of volcanic activity on an island otherwise dormant. This may in part explain why A'uahi does not exhibit the same density of *heiau*, even with similar physical features, despite recent activity along the western boundary (but originating in Kanaio) and smaller sympathetic flows from Hokukamo. The religious sites in A'uahi and elsewhere outside of Kanaio likely reflect the older Maui-based (i.e. pre-1780's) population, which appears to have been much more evenly dispersed both in habitation and placement of religious features.

Archaeological Survey

The archaeological survey indicates that pre-contact Hawaiian occupation of Kanaio and A'uahi varied in emphasis. Data for specific sites located in this as past surveys can be found in appendix I. Habitation and food production in *mauka* Kanaio was focused about the cluster called Kanaio (maps 2.2, 2.3), around Honua'ula Church and extending down to Pu'u Pimoe. Habitation in *makai* Kanaio was centered around two coastal communities: one in west Kanaio at Alaha-Wahene, and a second at Wai a 'Ilio (map 2.2, 2.3). The coastal communities were linked by the Pi'ilani Trail, and both had trails heading *mauka* to Kanaio proper. Most religious sites were clustered around Honua'ula Church.

Land use at higher elevations than the dense activity in *mauka* Kanaio (from 2500 foot elevation) appears to have been limited to sporadic agricultural production and dry forest exploitation, mainly in dryland crops such as *'uala* and dryland *kalo* (map 1.5). This agricultural zone appears to have extended up to about the 3600 foot elevation, and was defined mainly by limitations in areas suitable for planting. Most of eastern Kanaio, especially below the present highway, is recent lava and both difficult to traverse and very poor in agricultural purposes (maps 1.2, 2.1, 2.2). The trails which run from the coast to *mauka* Kanaio connect a series of isolated *kīpuka* within older lava flows with well-developed soils, all of which appear to have been used as planting areas, but outside of these *kīpuka* this region does not show any sign of intensive human exploitation (map 2.2). This impression is reinforced in *makai* Kanaio where sites was focused on coastal marine resources, which is also supported by the Sam Po interviews (Newman and Sterling 1971, Chapman and Sterling 1968, 1966, Sterling 1968, 1967a, 1967b, Pukui and Williamson 1966).

While fairly intense use is found in the eastern Kanaio Homesteads property, this appears to date from the late pre-contact and early historic period, and likely reflects the settlement on Homestead lands than viable agricultural production in this area of recent lava (map 2.1).

A'uahi has a slightly different pattern of land use, but this is in part because older lava covers most of the *ahupua'a*, and thus contains more developed soils suitable for agricultural use (maps 1.2, 2.1). Complex habitation and agricultural complexes are located throughout the middle of the *ahupua'a* from the 1100 to 2200 foot elevation (map 2.1). Land use, as indicated both by site density and complexity, indicates that this was the primary area of human occupation. A second major area of activity was at the coast, with the very large and impressive Makee village and smaller habitation cluster at Manini (map 2.1). As in Kanaio, coastal communities are linked by the Pi'ilani Trail, and connect with a *mauka* residential area around Hokukamo by *mauka-makai* trails. Unlike trails in Kanaio, those in A'uahi do

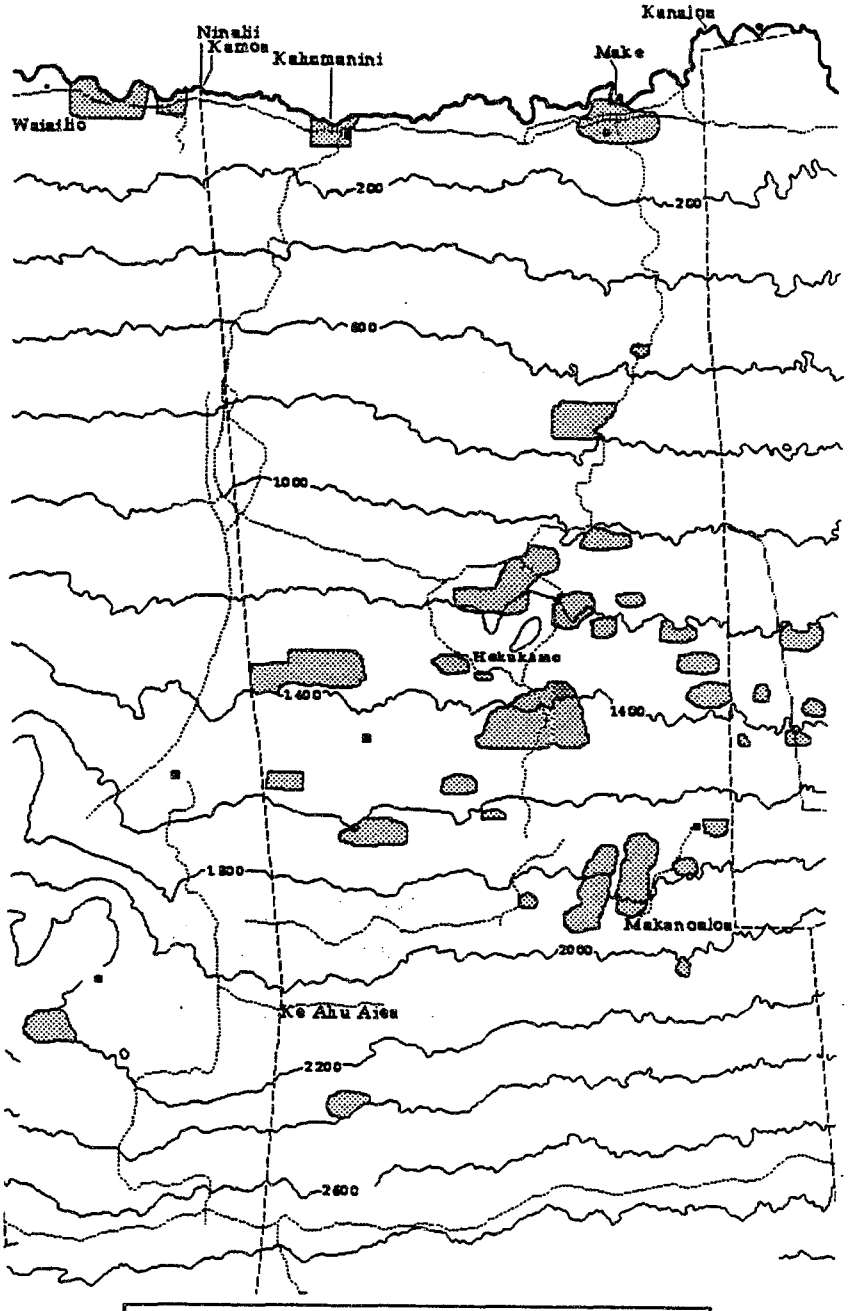
not link intermediate agricultural *kīpuka*, in large part because so much more suitable land exists in the middle zone in A'uahi.

In contrast to Kanaio, central A'uahi does not appear to have had as many religious sites. However the Lualailua Hills cones to the east do contain a large number of religious features, and it is possible that this may have had some relevance to middle A'uahi, as these *ahupua'a* are both considered to be within the *moku* of Kahikinui (map 2.1).

The placement of *ahupua'a* boundaries in the coastal zone for all these *ahupua'a* are adjacent to major settlements: the western boundary of Kanaio is located next to Alaha-Wahene; the western boundary of A'uahi is located next to Makee; the western boundary of Lualailua Hills is Wai a 'Ilio Pama (maps 2.1, 2.3). The limited exploitation from the 200 to 1100 foot elevation appears to be defined mainly by lack of water and planting soils, a perennial problem for this region reflected in the oral tradition (Newman and Stirling 1971, Chapman and Sterling 1968, 1966, Sterling 1968, 1967a, 1967b, Pukui and Williamson 1966). The zone above 3000 feet is in the cloud zone, and according to Resnick's (1977) study would have been well within the forest zone. This *mauka* forest zone, which reaches up to the rim of Haleakalā, was apparently limited to exploitation of endemic dryland forest products (maps 1.3, 1.5).

The roughly parallel pattern of use in Kanaio and A'uahi changed dramatically during the early historic period for reasons that have yet to become clear, though they may be related to the desire to move from subsistence agriculture to participation in the cash economy of the 19th century. A'uahi becomes rapidly depopulated during the historic period, with no claimants recorded in the Māhele (1848), and modern use is limited to non-resident ranching ('Ulupalakua Ranch). Currently there is only a single household within the entire *ahupua'a*. Food production is limited to marine exploitation, with fishing and shellfish collection along the coast, especially at Makee, and part-time hunting of goat and pig throughout the *ahupua'a*.

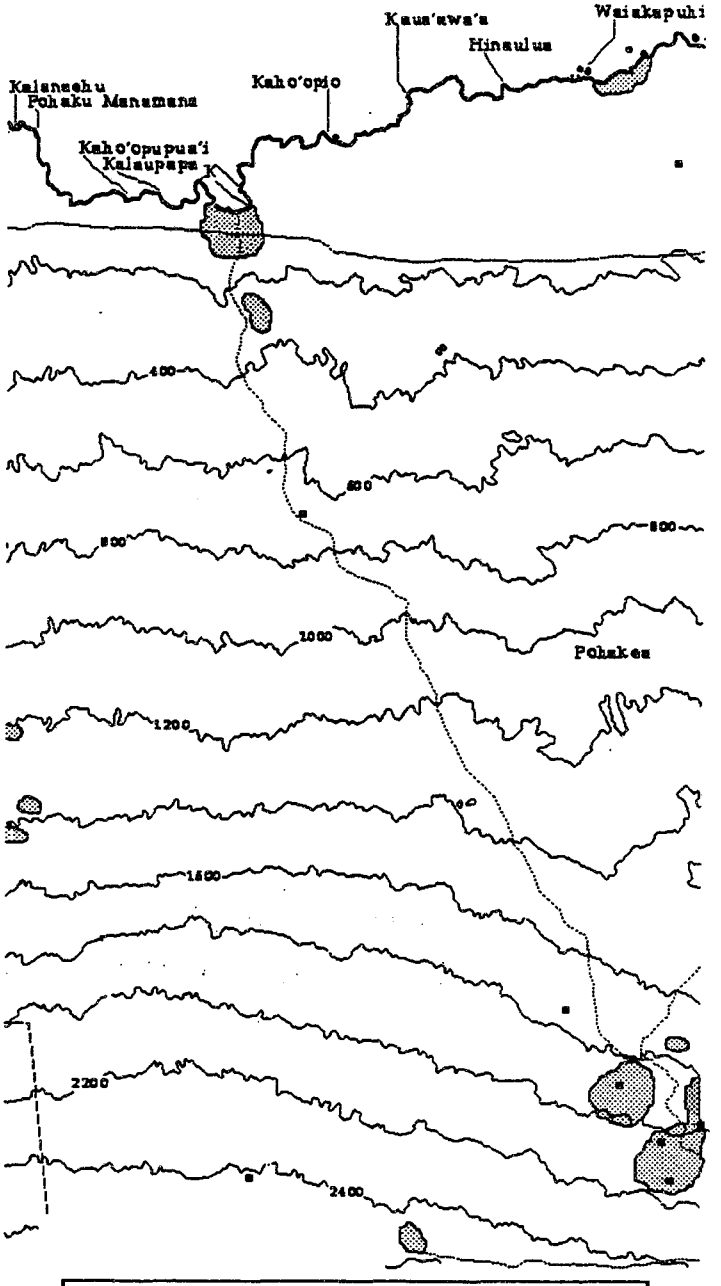
Kanaio follows a dramatically different pattern, which in part appears defined by the Honua'ula Church, which acted as a residential magnet during the 19th century. Homestead lands in east and west Kanaio also encouraged continued residence, as witnessed both in the archaeological evidence in eastern Kanaio (in the Homestead lands) and the Land Court Award testimonies for Kanaio lands (appendix IV). This residential pattern has persisted into the present, with moves to resettle sections of the eastern Kanaio Homesteads and the rebirth of Kanaio town.



MAP 3.1

A'uahi
in 1750 A.D.

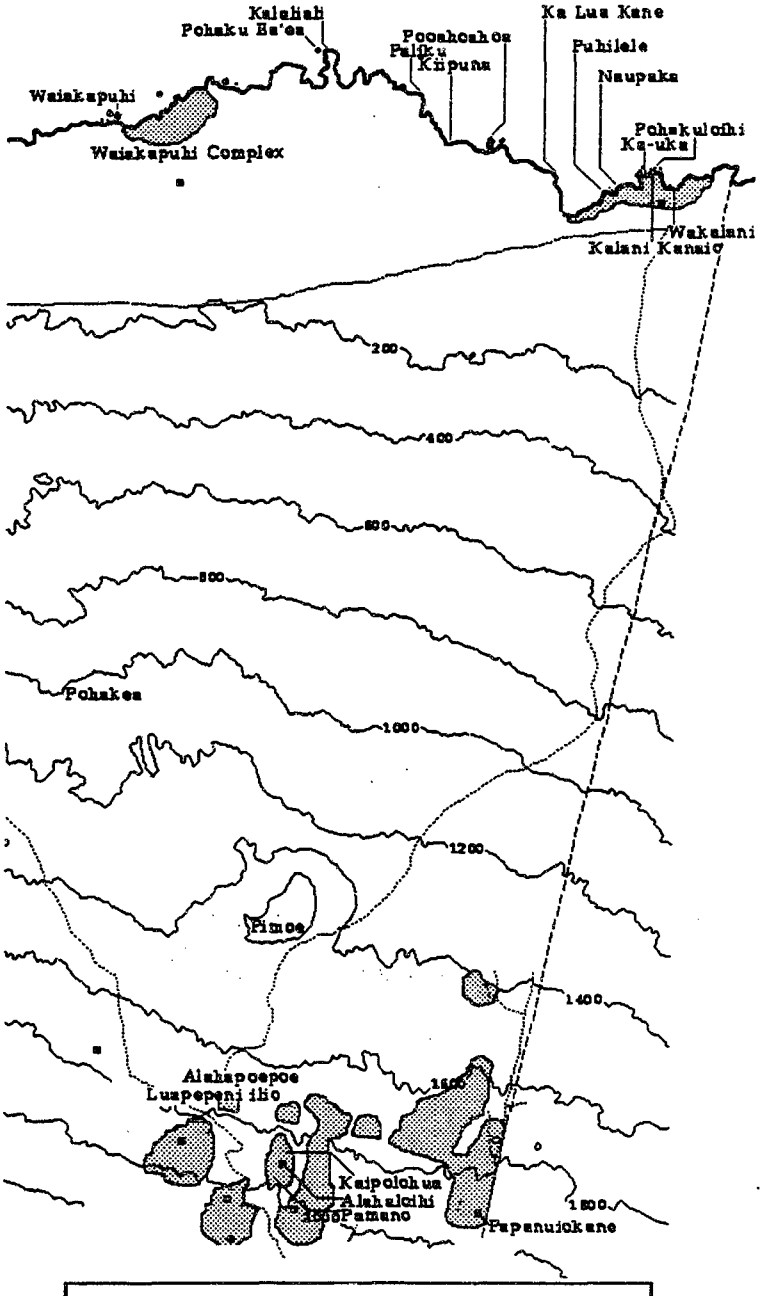
Use Areas
Trails
R.B. 9/94



MAP 3.2

Kanaio in 1750 A.D.

Use Areas
Trails
R.B. 9/94



MAP 3.3

Kanaio-Kalo'i in 1750 A.D.

Use Areas
Trails
R.B. 9/94

Elevation-Specific Comparisons between Kanaio and A'uahi

To develop a more accurate picture of the past cultural landscapes of these two adjoining *ahupua'a* it is useful to compare patterns of use within various elevation zones, particularly given the similar climatic conditions. This allows for closer examination of the extremely effective use Hawaiians were making of micro-environmental variations to maximize efficient land use. As noted earlier, there is a persistent theme that late pre-contact Hawaiian culture was facing serious environmental pressure triggered by overpopulation, leading to environmental degradation due to over-exploitation of land resources. Though recently critiqued by Stannard(1989), it remains the major factor in most analyses of change in late pre-contact Hawaiian culture (Kirch 1992, 1985, Sahlins 1992, Cuddihy and Stone 1990, Dye 1989). The archaeological survey in Kanaio-A'uahi found that despite efficient exploitation of suitable areas, there is no indication that land use in Kanaio-A'uahi ever maximized or overstressed all areas suitable for human exploitation. The counter seems to be more common, as a number of areas that appear attractive for agricultural or residential use show no signs of past activity.

Coastal areas such as Makee, or down the coast to the southwest, such as WaiLea and Mākena, appear to be better examples of areas where exploitation of marginal areas appears to have been intensive in the late pre-contact period (Clark et al 1990, Rosendahl 1984b, Bordner and Cox 1981, Bordner 1980, Schilt and Dobyns 1980, Cordy 1978, Kirch 1971). If Resnick's argument is accurate (Resnick 1977), into the mid-nineteenth century significantly more moisture was falling on the upper south-west slope of Haleakalä, which would have resulted in significantly higher seasonal flow at the coast at areas such as Makee, WaiLea and Mākena. The perception of marginality of coastal areas such as WaiLea-Mākena may only be a reflection of the denuding of the dry forest belt in the nineteenth century and subsequent drops in water downslope.

While Kanaio and A'uahi were intensively exploited to support a population significantly larger than resides in Kanaio today, the area still had room for expansion of resources should the need have occurred. This is supported by recent work conducted by Sahlins (1992) and Kirch (1992) in Anahulu which showed that the area was not in maximal production at the time of contact, and in fact production increased after contact with Kamehameha's movement into O'ahu. This supports arguments made recently by various historians arguing that the image of a population at "critical mass" was much too simplistic (Kame'eleihiwa 1992, Stannard 1989).

From the Coast to the 900 Feet Elevation

Care must be taken in comparing the raw numbers for the coastal regions of Kanaio and A'uahi. If one notes the relative length of coastline Kanaio has almost 2.5 times as long a coastal fringe as A'uahi (see maps 2.1, 2.2, 2.3). Combined with a more convoluted and thus more protected embayment pattern, it would be expected that Kanaio should have had a significantly greater areas of human use than A'uahi.

However, the total number of coastal sites (when compensating for coastal frontage) is quite similar (table 3.1). In both *ahupua'a* coastal exploitation is concentrated around embayments which provide some protection from the extremely rough and dangerous sea conditions that prevail year-round on this coast. In fact it appears that the large number of coastal religious sites is likely a response to the combined lure of extremely rich fishing grounds with extremely dangerous shore and offshore conditions. Even on calm days surf will average 4-8 feet, and safe canoe landings anywhere along this coast are impossible except in the calmest conditions. Any marine exploitation on this coast is risky and requires careful attention to quickly changing conditions.

The two largest communities are both at the west ends of the *ahupua'a* boundaries -- Wahene for Kanaio and Make for A'uahi. A substantial portion of coastal activity in each *ahupua'a* appears to have been at these locations, given the density of features and trails. Both have permanent freshwater springs. Additional fresh (or at least brackish) water springs are fairly common along this coastline and immediately offshore. However, such springs are very rare from the 200 foot to 800 foot level, at least under contemporary drought conditions with loss of the dry forest catchment system. The lack of archaeological features inland up to the 900 foot elevation suggests that the lack of water was also true in the past. The conditions appear to have been the same in both *ahupua'a*.

TABLE 3.1

ARCHAEOLOGICAL SITES BY AHUPUA'A AND ELEVATION

ELEVATION	FORM	KANAIO	A'UAHI
0-600 feet	Religious	6 [104,105,106,111 120,123]	2 [113,114]
	Habitation	4 [205,213,214,216]	4 [207,208,212,235]
	Agricultural	-	-
	Legendary	1 [411]	-
	Burial	-	-
	Other	-	-
600-900 feet	Religious	-	-
	Habitation	-	-
	Agricultural	-	-
	Legendary	-	-
	Burial	-	-
	Other	-	1 [626]
9-1200 feet	Religious	-	-
	Habitation	-	2 [237,238
	Agricultural	-	1 [320]
	Legendary	-	-
	Burial	1 [501]	-
	Other	-	-
12-1500 feet	Religious	-	-
	Habitation	2 [240,252]	13 [226,227,228,229,230, 231,239,241,246,247, 248,249,250]
	Agricultural	-	-
	Legendary	-	-

TABLE 3.1 (cont.)

ELEVATION	FORM	KANAIO	A'UAHI
	Burial	2 [503,506]	-
	Other	1 [613]	1 [627]
15-1800 feet	Religious	2 [121,127]	1 [122]
	Habitation	11 [204,217,256,258, 259,260,261,262, 263,264,266]	5 [224,225,232,242,245]
	Agricultural	1 [324]	-
	Legendary	-	-
	Burial	-	-
	Other	4 [610,611,628,629]	4 [622,623,624,625]
18-2100 feet	Religious	4 [103,109,110,126]	-
	Habitation	2 [251,257]	2 [243,244]
	Agricultural	-	1 [326]
	Legendary	-	-
	Burial	-	-
	Other	-	-
21-4000 feet	Religious	1 [107]	-
	Habitation	4 [215,233,234,254]	-
	Agricultural	4 [321,322,327,328]	-
	Legendary	-	-
	Burial	1 [505]	-
	Other	-	1 [620]
4000+ feet	Religious	2 [108,125]	-
	Habitation	3 [220,221,222]	-
	Agricultural	1 [325]	-
	Legendary	-	-
	Burial	-	-
	Other	-	-

900 to 1200 foot Elevation

It is at the 900-1200 foot elevation that variation starts to occur between the two *ahupua'a* (maps 2.1, 2.2, 2.3). A key factor is the Hokukamo cinder cone in A'uahi. The area about Hokukamo, both *mauka* and *makai*, was a dense pattern of sites (map 2.1). Several springs are still functional, and several others now dry appear to have served other sections of these sites. As with the Kanaio *mauka* complex (sites 204 and 1006) these agricultural and habitation features must have had water other than just from springs.

The presence of the last remaining lower dryland forest groves of *wiliwili* in this area support Resnick's contention of significantly higher rainfall through misting (Resnick 1977). Hokukamo frequently will mist up, and such mists are more persistent than in surrounding flats. This mist, when combined with the *wiliwili* as moisture capture barriers, and water from springs, give the area a significantly more verdant appearance than surrounding areas even today. In the late pre-contact period, without the grazing animals and with significantly greater tree cover the area must have been highly productive, as is evidenced by the intensive development of agricultural systems around Hokukamo.

While Hokukamo appears to have been the population center for A'uahi, in Kanaio the pattern was considerably different (table 3.1). Pu'u Pimoe is at a slightly higher elevation than Hokukamo, and wind conditions move significantly less mist around the curve of Haleakalā over to this section of Kanaio. The area is much drier than its equivalents in A'uahi, and this, in combination with the convoluted recent *a'ā* flows which cover almost all this area and surround Pōhākea, obviously limited any major use of this section of Kanaio (maps 1.4, 1.6, 2.2, 2.3).

The only viable areas of habitation and agricultural use are the numerous *kīpuka* which stand out as plant and soil oases in the recent flows, but rainfall is sparse and springs are rare. The deep soil, much of which must be aeolian, is excellent for agricultural purposes, and the generally level nature of most *kīpuka* mean that little if any preparation would have been necessary for opportunistic planting. This corroborates the Sam Po interviews (Newman and Sterling 1971, Chapman and Sterling 1968, 1966, Sterling 1968, 1967a, 1967b, Pukui and Williamson 1966), as he noted people would plant in areas where soil was present if the opportunity presented itself. These are likely the *kīpuka* as he discussed, as many are intersected intentionally by the trails that lead from *mauka* Kanaio down to the coast (maps 2.2, 2.3).

1200 to 1500 foot Elevation

In A'uahi the main concentration of activity was in the area *mauka* of Hokukamo, which is the upper portion of the village complex that surrounds the cone (map 2.1). At this higher elevation a strong correlation between archaeological sites and *wiliwili* groves becomes apparent. Remnant *wiliwili* are limited to gulches and areas where water was accessible. The presence of archaeological sites in the *wiliwili* groves show that the presence of water was also the critical factor in the past. As at lower elevations, the more marginal areas do not exhibit any past use.

In Kanaio this zone has few sites (maps 2.2, 2.3, table 3.1), though in part this is likely the result of intensive clearing of the *mauka* side of Pu'u Pimoe during the last hundred years--first for the the prison camp, and in the 1950s for the National Guard Firing Range. Despite the presence of springs at several locations, the lack of suitable areas for planting other than in scattered *kīpuka* indicate this portion of Kanaio was a marginal area outside of the few optimal zones, and was not heavily exploited.

1500 to 1800 foot Elevation

The divergence between the two *ahupua'a* is manifested first at this level. In A'uahi there is little evidence of significant use of this zone, with the few sites clustered around seasonal streams (map 2.1, table 3.1). The ground has good soil but water, either in surface form or as springs, is in short supply. However, at this elevation there is a significant increase in moisture (largely mist), and vegetation is noticeably denser than *makai*. While the vegetation increases, the visible evidence of human use decreases.

In Kanaio the situation is reversed (maps 2.2, 2.3, table 3.1). While springs are rare, predictable seasonal streams are present, which collect rainfall from the higher slopes. The most spectacular example is the small canyon which runs to the west of the Goodness House, with vertical walls of over 50 feet in spots, which opens into a complex series of water control features in Kanaio *mauka* village (site 204 and 264)(map 4.1). While rainfall and mist appear more limited than in A'uahi, the presence of these seasonal streams provided water for complex agricultural systems. Unfortunately a major drainage, the area *mauka* of Pu'u Pimoe has been completely cleared in the last 100 years, removing any trace of past use. Given the similarity to the Kanaio *mauka* village, and the presence of sites upslope, a second site complex was likely in the Pu'u Pimoe area to take advantage of the available water.

1800 to 2100 foot Elevation

In A'uahi the pattern noted above for the 1500-1800 foot elevation continues, with features of human use becoming ever more infrequent, and in almost all cases tied to seasonal stream flow (map 2.1, table 3.1). It should be noted that this does not indicate that this zone was not utilized. As Handy (Handy and Handy 1972, Handy 1940) notes, planting of crops such as sweet potato, gourds and melons could occur under trees without any terrain preparation. Given the lack of grazing animals, there was no particular reason to limit planting to prepared areas if that preparation was unnecessary. This appears to have been the case in A'uahi.

Even today the vegetation is significantly more verdant than Kanaio at the same elevation. As Resnick (1977) has pointed out, the great attribute of the dryland forest-moisture cycle was not just the presence of trees, but the presence of a mat of groundcover which acted as a moisture barrier against evaporation. To take maximal advantage of the pattern of moisture capture in this environment would require planting in the groundcover instead of exposed raised mounds. Given the excellent soil in this area there would be little need for ground preparation, especially as major clearing of rock would disturb the existing groundcover. Unfortunately this means that visible indicators are lacking, making it impossible to estimate the scale of agricultural production in the dry forest zone.

In Kanaio this zone appears to have been utilized less intensively. In part, this is because of the steeper grade of slope, which means that the seasonal stream flows tend to move quickly in well-defined gulches through most of this section, unlike the more gentle slope through much of the 1500-1800 foot zone (maps 2.2, 2.3, table 3.1). In addition the area around Kanaio town has been extensively modified in recent times and evidence of past use largely destroyed.

The large number of religious site is the most striking aspect of the past cultural landscape of this section of Kanaio (maps 2.2, 2.3). A significant proportion of all the archaeological sites located in Kanaio are within this zone, and the majority of religious sites cluster about the series of linked collapsed sinks and caves which make up the Kaipolohua-Pamano complex site 126 (table 3.1). Other *heiau* encircle the site, including the 19th century Honua'ula Church. The reason for the special significance of the cave complex is unclear, though the Pamano legend was apparently a very powerful one known throughout the islands given the frequent references to it as commonly held property (appendix I Site 126). The lower, Kaipolohua Cave section was used into the early part of the twentieth century for traditional education as noted by Sam Po (Newman and Sterling 1971,

Chapman and Sterling 1968, 1966, Sterling 1968, 1967a, 1967b, Pukui and Williamson 1966), who was taught in this cave, so the complex was most likely an educational center from the nineteenth century if not earlier. The pattern of *heiau* in very close proximity to each other is substantially different from the norm, which was of consolidation of religious functions within ever-larger structures as rebuilding and rededication took place under various *ali'i*. Likewise while religious instruction involved some cross-training, the *heiau* were usually of specialized designation and thus operating cooperatively would have been unnecessary (Kamakau 1976, 1964, Malo 1951, Thrum 1909, Haleole 1863, 1862). This clustering of religious structures is the major puzzle of the late pre-contact period in Kanaio, as all the structures appear to have been in use at roughly the same time.

2100 to 4000 foot Elevation

Sites in this zone are largely nonexistent in A'uahi (map 2.1, table 3.1). Walls and other features in this zone appear to reflect nineteenth and twentieth century ranching activities rather than earlier use. In most of A'uahi this elevation exhibits a significant change in vegetation, first to a pattern of improved pasture grassland with occasional low shrubs, by 3000 feet changing into a mixed indigenous dryland forest of *'ōhi'a* and associated species (map 1.2).

In Kanaio the number of both habitation and agricultural features increases in the lower portion (between 2100-3000 feet) of this zone, though the number of religious sites drops drastically (table 3.1). Agricultural sites appear to have been placed to take advantage of soil and relatively level areas rather than concern about access to water, unlike the features located *makai*. This reflects the greater rainfall and misting activity at this level, which is significant even today.

It is in this zone that a relationship between the recent replanting of trees and increased precipitation and vegetation variety has been noted by contemporary long-term inhabitants, specifically those residing in the area since the middle of the 1970s when trees were largely absent. When people started moving back to Kanaio to live fulltime in the mid-to-late 1970s, the area was largely in high grass and scrub, with the exception of two major groves of eucalyptus (a 1930s Civilian Conservation Corps project) and scattered *'ōhi'a* in recent lava flows (personal notes). The new residents have planted a number of trees, and there is consensus by residents that the amount of water has increased and the general wind speed has decreased. This would support Resnick's contention about the sensitivity of mist collection to relative height off the ground, and would also help to explain the success of agricultural production in a zone without well-defined drainage patterns for seasonal flow (Resnick 1977).

This elevation zone appears to follow the pattern established downslope in A'uahi of exploiting the relationship between usable water and dryland forest. This would explain the Land Commission Award Testimonies (1846-1849) for parcels in this zone of Kanaio, which involved such diverse crops as potato, *haole* (Irish) potato, *kalo* and sugar cane. Springs are common in this zone but they are not necessarily tied into the archaeological sites, nor do all seem to have been used traditionally.

Above 4000 feet

The highest elevations in both Kanaio and A'uahi do not contain any evidence of prior use. Given the descriptions in early accounts (Resnick 1977) the upper elevations would have been in a complex high altitude dryland forest of mixed species, which at the highest elevations changes down to shrubs and high altitude grasses. It should be noted that technically Kanaio extends all the over the lip of Haleakalā into the center of the "crater" and so would encompass the highest elevations up to 10,000 feet. However, for this study the highest elevation surveyed was at 6500 foot level. Handy (Handy and Handy 1972, Handy 1940) has noted that high elevations were limited to specialized exploitation such as quarries for tool material or hunting birds, rather than organized cultivation.

General Comparative Summary

Kanaio and A'uahi were manipulated in the same form and with the same intent. The patterns and forms that the modifications took reflected a shared image of the cultural landscape of this region. Major differences between the two *ahupua'a* are in the elevations which saw the most intensive modification. This appears to be a reflection of the physiographic variations in slope, age of surface material (the recent flows in Kanaio for example) and orientation versus the mist-bearing trades off Haleakalā. The only major difference between the two *ahupua'a* archaeologically is the unusual concentration of *heiau* clustered about the Kaipolohua-Pamano cave system in Kanaio.

Common to both *ahupua'a* are the densely concentrated village patterns in the middle elevations. The general perception of this region as being marginal due to limited soil and water reflects physiographic changes which have occurred in the last 150 years due to the impact of western land use patterns. It does not reflect conditions which existed prior to 1780 in Kanaio-A'uahi, which supported a large and stable population, as is evident from the concentrated settlement pattern.

It is not clear what effects the expansion of Hawaiian exploitation would have had on the

dry forest. Cuddihy and Stone(1990) are of the opinion that significant damage was likely the result of the increased exploitation of these leeward dry forests regions:

> A similar replacement of natural vegetation by wetland cultivation of taro (Colocasia esculenta) probably also occurred in the lower valleys and slopes of windward East Maui, although the history and archaeology of this area are not well understood. Archaeological investigations of leeward East Maui, however, indicate a large concentration of habitations and dryland cultivation between 400 and 700m (1,310-2,300 foot) elevation in the district of Kahikinui. This complex of sites probably represents a field system similar to those of leeward Hawai'i Island and was apparently developed in the late prehistoric period as an expansion into a harsher, more marginal region. The Kahikinui area is part of the south slope of Haleakalā, where vegetation was recently surveyed by Medeiros et al... This study located many remnants of a rich dry-forest flora. A large Hawaiian population clearing land, setting fires, and gathering firewood in and near dry forests and shrublands could have severely impacted the native vegetation and contributed to its decline and present fragmentation. Likewise, a postulated agricultural area upslope of the coast between Kihei and Mākena could have greatly disturbed natural dryland vegetation there, a remnant of which was described by Medeiros et al on a very rocky substrate unsuitable for agriculture...
>
> Even the high slopes of Haleakalä were visited by ancient Hawaiians, who used a shelter cave at 3,050 m (10,000 foot) elevation as early as the 9th century. Hawaiians were probably travelling to this area near the East Maui summit to gather adz material and to exploit the now-endangered *'ua'u* or dark-rumped petrel (Pterodroma phaeopygia) for food. (Cuddihy and Stone 1990:2)

However, there is a possible alternative explanation. If Resnick's (1977) analysis of tree elevation and water collection is accurate, and if this was manipulated by Hawaiians, as appears to have been the case in Kanaio-A'uahi, then it is likely that impacts were not as extreme as suggested by Cuddihy and Stone. The survival of the remnant forest till the middle of the nineteenth century supports Resnick's argument. While undoubtedly marked change did occur due to increased human expansion, the concepts of clearing land and setting fires would be contrary to desire to preserve the moisture regime that supported successful planting. In Kanaio-A'uahi it appears that significant sections of the dryland forest survived into the middle of the nineteenth century, though in modified form, as a key component of the Hawaiian agricultural system.

Early Use of Kanaio and A'uahi

Early use of Kanaio-A'uahi by Hawaiians on Maui is at present based on circumstantial evidence due to the lack of excavations and accurate dates for the region. However there is no evidence to suggest a pattern of initial exploitation significantly different from other lee sections (such as Mākena to the southwest), for which a chronology has been developed (Kirch 1985).

During the period of initial settlement, from 300 A.D. (arrival) till 1100 A.D., which Kirch (1985) has designated the Colonization (300-600 A.D.) and Developmental Periods (600-1100 A.D.), this section of Maui would have had limited impact from early Hawaiian settlers. The impacts to Kanaio-A'uahi would have been limited to temporary visitations, with emphasis on use of the shore area for fishing and bird hunting in the dry forest. By 1100 A.D. it is possible that a small number of full-time residents were present in the most optimum areas such as Hokukamo, Pu'u Pimoe, or Kanaio *mauka*, where there was sufficient water and good shore access, but the rest of both *ahupua'a* would have had little lasting impact from the Hawaiian population.

The period from 1100 to 1300 A.D., which Kirch has designated as the initial phase of the Expansion Period (Kirch 1985), would have been a time in which more interest and effort in exploiting Kanaio and A'uahi would have developed. With population increases and other factors putting pressure on the more highly-developed wet zones, increasing interest would have been paid to more marginal areas such as Kanaio and A'uahi. By this time most of the endemic bird population will have disappeared in the dry forest zone. Agricultural development would have seen planting of dryland *kalo* or yams, and development of the managed dry forest as water catchment system.

Thus by 1300 A.D. there would have been small self-sufficient communities likely located around Hokukamo in A'uahi (between 1200-1800 foot elevation), the area around Kanaio town, and at Kanaio *mauka* (between 1600-2000 foot elevation), all three being areas where soil and water were available. However, in contrast to the pattern of dispersed residence and planting Kirch has posited elsewhere (Kirch 1985:305), settlement patterns in this area would appear to have concentrated at optimal locations:

> The Expansion Period witnessed major changes in settlement pattern and architecture. Whereas during the preceding Colonization and Developmental Periods settlements tended to be small nucleated clusters of dwellings located in ecologically favorable spots, a pattern of truly dispersed residence now began to develop rapidly...

Along with population growth, the Expansion Period is characterized by extensive development and intensification of all aspects of production...

In leeward areas, however, this period was a time of rapid agricultural expansion, as dryland forests and scrub were cleared and various kinds of field systems were laid out.

Oral Tradition

According to oral tradition it was during this period that the system of formal land division and social control was developed. It is unclear what form of land use and control was in place prior to this, but it is likely that it was a system of family-controlled usufruct pattern similar to that found elsewhere in Polynesia. Why the shift occurred from the traditional Polynesian pattern to the much more formalized land control based on abstract bounded areas -- that of the *moku, ahupua'a* and *'ili* -- is still a source of discussion. What is clear is that the new system enhanced the social segregation between the developing power of centralized authority under the *ali'i* over the majority population of *maka'äinana* (Sahlins 1992, Kirch 1992, 1985).

It is unclear what visible changes to the cultural landscape would have occurred as a result of this shift to a formal bounded land division system, though certain classes of structures were specifically constructed for this system. The *ahupua'a* boundaries were defined by stone cairns (*ahu*) which were both boundary designators and also focal points for ceremonies reinforcing the legitimate authority of the high chief of the district (rituals conducted during the *Makahiki* cycle). Certain religious sites (*heiau*) were also placed so as to define the *ahupua'a* boundaries. It was common for *mauka-makai* trails to be developed paralleling the *ahupua'a* boundary lines, though there were apparently few if any restrictions existed about actually crossing the boundary (Kamakau 1976, 1964, Handy and Handy 1972, Handy 1940).

Though the *ahupua'a* concept is credited to the *kahuna* (priest or religious specialist) named Pa'ao (Sahlins 1992), the actual definition of the concept must have taken some time, as each *ahupua'a* was supposed to be roughly equivalent to its neighbors in resource base. Given the tremendous diversity in agricultural and aquacultural capabilities even within short distances in Hawai'i a great deal of care must have been taken in defining these boundaries, especially as there are no extent records of *ahupua'a* having been modified, moved or deleted.

The only oral tradition which directly links to Kanaio-A'uahi is a good example of a story structured about place naming:

[They had two children, a boy (Awahua) and a girl (Aea] The parents went to their

cultivating, while the children went to the stream to dig ditches. While so digging, the sister's ditch was broken prematurely, and she was carried along by water without the brother's knowledge. While the brother was digging away at his ditch he happened to glance around and the sister was nowhere in sight, so he started to hunt for her, thinking he could find her quickly. He saw her at Paliakoae, so he chased after her. When he arrived there she had got to Waiailio, and thus he followed after her until she was finally carried out into the ocean. At that time she threw her ivory necklace upon the beach at a place known as Waioaoaku, and it is so named unto this day. The brother was also carried along, and when he came to this place he saw the necklace of his sister there, so he threw his loin-cloth, Puakai, and it landed by the ivory necklace of his sister. They were carried by the current until the sister was landed at Honuaula, Maui. The brother landed at Puuloa, (Oahu). (Fornander 1919:602)

Both the process of legitimizing names and linking locations can be seen in the above story. As most of the story is centered in Kaupō, it appears that it was an attempt to link Kaupō with specific coastal sites such as Waiailio in Kanaio.

Summary: 1300 A.D.

The view of Kanaio-A'uahi by 1300 A.D. is one of a small population based at selected locations of maximum agricultural potential with permanent spring or stream-fed water sources. Several locations around Hokukamo in A'uahi (1200-1500 foot elevation), the Pu'u Pimoe area, and west Kanaio at Kanaio *mauka* (1600-2000 foot elevation) all fulfill this criteria, and were likely locations of early residence. *Mauka-makai* trails were in place, though likely not paralleling *ahupua'a* boundaries as much as connecting upland settlements and coastal use (such as the Pōhākea trail)(maps 2.1, 2.2, 2.3). Several coastal communities may also have had permanent populations in this period, as both Make, Kanaio *makai*, and Wai a Ilio had springs and suitable land for planting in addition to maritime resources, or they may have been only seasonal settlements to exploit fish runs on this section of the coast. *Heiau* were likely placed to affect food pursuits (Lono or *ko'a* shrines) and were based on the family *akua* (ancestors) of the residents.

Kanaio and A'uahi in 1750 A.D.

Major changes occurred in Hawaiian society between 1400 A.D. and 1750 A.D. and the culture was still in a state of dynamic change at the time of formal european contact in 1778. While Kanaio-A'uahi was not in the mainstream of the struggles between major *ali'i* of Maui and Hawai'i, these conflicts must have had significant impact on the inhabitants of both *ahupua'a*.

The major visible change to the cultural landscape from earlier periods was the major expansion of both food production and population into all sections of both *ahupua'a*. While coastal use and habitation saw some expansion, major growth was in upland agricultural zones. While areas of more intensive use were present, the archaeological survey found that all areas above 1200 feet that could sustain agricultural planting had been utilized in at least casual form, with sweet potato mounding scattered throughout both *ahupua'a* up to the 3000 foot level. In addition there was a significant increase in both the number, form, and size of *heiau* in the two *ahupua'a*, especially in Kanaio town.

Kirch (1985:307-308) has called this period the Proto-Historic Period (c. 1650-1795):

> The political history not only of Hawai'i but of the other major islands as well, during the final two centuries prior to European intrusion, was one of constant attempts by ruling chiefs to extend their domains through conquest and annexation of lands. Campaigns extended beyond the borders of individual islands...
>
> Various cultural elaborations followed the intense rivalry and warfare characteristic of the Proto-Historic Period. Among these were the rise in importance of the Ku cult and the construction of increasingly massive luakini heiau such as 'Ili'ili-'opae, Pi'ilanihale, and Pu'ukohola. The kapu system, especially the sanctions surrounding the high chiefs, was certainly further elaborated during this period.

Handy provides a more detailed image of this period, as it included interviews with older informants from the region:

> The land section named Honua-'ula on Maui is the flatland (honua) distinctive for its red ('ula) dust...(Handy and Handy 1972:45)
>
> At Keoneoio on the southern flank of Haleakala, which is a sweet-potato planting area on Maui, there is the story of a man who mistakenly prayed to Makali'i, a demigod whose name he had heard associated with bountiful provender, asking to give him fish.

Makali'i (a name for the constellation Pleiades) finally appeared to him and told him that he could not give him fish. "But," said Makali'i, "plant sweet potatoes"; and he advised that the planting be done in the months of Ikuwa, Welehu, and Makali'i (late October into January, the months of south winds and rains). If he did so, Makali'i promised him a crop of big potatoes. The man did as he was told and had a big crop. One potato was so big he could not dig it out. A hill at Keoneoio was formed by the earth he threw out in trying to dig it up. (Handy and Handy 1972:147)

...in this account...is said to be "Kahiki". Generally this "hidden land" is visualized as the great cloud mass floating off the windward coast of Maui, and is said to abound in all kinds of foods. (Handy and Handy 1972:151)

There was excellent deep-water fishing available to the folk of Kula and Honua'ula, but it was very poor along the Kahikinui and Kaupo shores; and there was little shellfish and limu. The coast and coast lands of southern Maui are perhaps the poorest in the islands. The sparse population there must have suffered severe famine at times. (Handy and Handy 1972:276)

Maui as a whole is an enigma historically. Its motto, Maui no ka 'oi, "Maui is the best," was both geographic in its significance (because of its majestic grandeur) and historical in view of its large domain, including Lanai and Molokai and its rulers' conquests of Hawaii and Oahu. The achievements of Kihapi'ilani, the great ali'i nui who unified all of the island in the 16th century, paved a road around its whole perimeter, 138 miles long altogether, and who stimulated his subjects in all the peaceful arts, constitute a further claim, historically, to greatness.

The enigma referred to is this: Of the four larger islands, Oahu had by far the greatest acreage devoted to continuous production of wet taro; Kauai was second; and Hawaii came third in taro production, most of it mulched or forest grown. Maui produced the least taro. In sweet-potato production it probably equaled Hawaii and outproduced Oahu and Kauai. Of breadfruit, Hawaii probably produced most, Kauai came second, Maui third, and Oahu fourth. Taken altogether in terms of areas cultivated and number of communities, Maui certainly ranked last. In comparison with the other islands, it must have had a smaller population. (Handy and Handy 1972:488)

Westward beyond the high ridges which hem in Kaupo Valley we come to the vast arid waste named Kahikinui. A writer in the newspaper Ke Au Hou (December 14, 1910) says that this region was named by first settlers from Kahiki-of-the-South because of their love of their old homeland. These early migrants must have preceded the volcanic desolation now visible to have chosen it as a place of settlement. Now it is partly covered by what is probably the most recent lava flow from the now dormant

crater of Haleakala. It is uninhabited. Fishing is comparatively good along its rugged shores, and in former times Hawaiians lived in isolated communities on the broken lava scattered from one end of the district to the other, close to the sea or slightly inland wherever potable water was to be found in some brackish well or submarine spring offshore. We are told by an old informant, born at Kanaio in the next district, that the Hawaiians formerly living along the coast of Kahikinui had their plantations of dry taro and other edibles inland in the forest zone, where the forests along the southern wall of Haleakala came much lower and where rainfall was more plentiful than it is today. Here, as in Kaupo, cattle grazing over all the higher country have deforested the land...

In Honua'ula (Red Earth), as in Kaupo and Kahikinui, the forest zone was formerly much lower and rain more abundant before the introduction of cattle. The usual forest-zone plants were cultivated in the lower uplands above the inhabited area. Despite two recent lava flows which erupted in about 1750 from fissures below the crater and only a few miles inland and which covered many square miles of land, the eastern and coastal portion of Honua'ula was thickly populated by Hawaiian planters until recent years... Formerly there was much dry taro in the forest zone. (Handy and Handy 1972:509)

A few houses are still standing at Kanaio where the upper road (traveling eastward) ends, but only two are now occupied. (Handy 1940:114)

The emphasis on *mauka* agricultural production and coastal fishing mirrors the findings of the archaeological survey and provides a good image of the cultural landscape in Kanaio-A'uahi in 1750.

Oral Tradition

The eighteenth century was a period of significant social change throughout Hawai'i, and Maui was no exception. One manifestations of these changes in the Hawaiian social structure was the increase in the intensity of warfare between ruling *ali'i* for land and political control, a major portion of which became a long-term struggle for dominance between East Maui (particularly Hāna) and West Hawaii (particularly Kohala and Kona). In the thirty-year period from 1750 to 1780 a series of brutal invasions and battles took place on Maui. This did not involve merely control of conquered territory, but also the occupation by *ali'i* from Hawai'i to East Maui, mainly recorded for the Hāna region. From Kamakau (1961) a short chronological summary (figure 3.1) illustrates these changes in political structures and associated increase in large-scale warfare.

As can be seen in figure 3.1 the 1700's was one of nearly continuous struggle which at times spilled directly into Kanaio-A'uahi. The lack of a sheltered coastline suitable for canoe landings appears to have been the major reason that this region was spared direct invasion, but even so the impacts from threat of invasion, requisitioning of provisions, and drafting of manpower for the armies and such must have made significant strains on both the population and productive capabilities of the region. Despite its isolation it appears that several times the area was raided by troops, the last being the "plundering expedition" of Kukeawe in 1785 (figure 3.1). While in the fifteenth century it seems that this region was a backwater in developments within Hawaiian society, by the nineteenth century it appears to have been propelled into the mainstream of political and social change.

The oral traditions that persisted long enough to be recorded can be dated to this period. They discuss the final eruptive sequence for the Haleakalā Rift Zone within the context of *Pele*, but avoid any direct mention of the military activity noted in figure 3.1. Of interest is the parallel lack of any references to caves of refuge or *pu'uhonua*, which are common in areas of Hawai'i which were also impacted by these struggles between *ali'i*. This was in contradiction to the archaeological survey for Kanaio-A'uahi, during which a number of lava tubes were located, none of which were obviously man-modified, yet all suspiciously were ideal for use as *pu'uhonua* (appendix I).

The Nineteenth Century and Change in the Cultural Landscape

No early European descriptions of Kanaio-A'uahi exist. The early accounts summarily dismiss this entire section of Maui as dry and barren, but the accounts are from vessels in transit through the channel and thus focus on the coastal area. In addition the nature of use in this region would not have appeared as an organized agricultural system to European eyes. As a result the first documentary evidence of land use in Kanaio-A'uahi, are the formal claims made during the Great Māhele (1846-1849).

1754: Kalani'opu'u becomes the ruling chief of Hawai'i after conquering Keawe'opala. In 1754 the ruling chief of Maui is Kamehameha-nui, whose sister (Kalola) is one of Kalani'opu'u's wives.

1759: Kalani'opu'u attacks Kamehameha-nui, conquers and annexes Hāna and Kipahulu. As a result many Hawai'i chiefs settle on Maui.
Kalani'opu'u makes Puna (one of his supporters) governor of Maui lands and commander of Ka'uiki hill (a fortified position at Hāna).

1760: After Kalani'opu'u returns to Hawai'i Kamehameha-nui attacks Puna: "...from Heleikeoho to Nahiku the men were massed... The field of battle extended from Makaolehua in Akiala to Kawaihau in Honoma'ele."(Kamakau 1961:80). Individual duels (such as that between Ka'ohele and Kamakauki'i) extended through the "...ahupua'a of Honoma'ele, Kawela, 2 Ku'uku'ukamanu, 2 Kahalili, 2 Kaleleku, Honokalani, Wakiu and half of Kawaipapa...overtook him at Waialanahu near Pihele..."(Kamakau 1961:81)
After the battle Puna was tricked out of the Kauiki fortification by Mahihelelima "...was an independent chief of Hana, Kipahulu, and Kaupo districts, and his ancestors, both parents and grandparents, had been governing chiefs of that districts."(Kamakau 1961:82)

1765: Kamehameha-nui dies and Kahekili-nui'ahumanu becomes the ruling chief of Maui. Conflict ensues between Ke'eaumoku (a refugee chief from Hawai'i), who marries Namahana, the *kapu* wife of the recently-deceased Kamehameha-nui. Kahekili sees this as a political move against his control of Maui and war results. Ke'eaumoku looses to Kahekili and flees to Moloka'i, but is pursued by Kahekili. He then flees to Mahihelelima's protection at the Hāna fort of Kau'iki.

FIGURE 3.1

CHRONOLOGY FROM 1750-1790

EVENTS RELEVANT TO KANAIO-A'UAHI

1775-79: Constant warfare between Kahekili and Kalani'opu'u. First Kalani'opu'u raided Kaupō "...abused the country people and beat them over the head with clubs..." (Kamakau 1961:84). Then Kahekili met Kalani'opu'u's forces in battle at Pu'umaneone and Kapuka'auhuhu which Kalani'opu'u lost: "...concentrated the battle among the potato hills facing Ki'ei. The attack was led from below...through the furrows between the hills of potatoes in direct line from Kalaeoko'ilio, the right wing facing Pahonu and the left wing on the east of the cliff at Waipu...slaughtered to soldiers of Hawaii as they ascended the long hill toward Kihapuhala. At Pa'auhau they made a stand..then found refuge in their fleet and rested under the lee of 'The point of the dog'(Kalaeoka'ilio)." (Kamakau 1961:84). Of note in this struggle was that when a famous Hawai'i warrior got tangled in the sweet potato vines he was rescued by the till then unknown Kamehameha, who acquired the nickname of Pai'ea (hard-shelled crab) from the Maui warriors because of his skill in battle.

1776: Kalani'opu'u again invades Maui by "...landing at Keone'o'io, their double canoes extending to Mākena at Honua'ula. There they ravaged the countryside, and many of the people of Honua'ula fled to the bush." (Kamakau 1961:85) He then marched to Wailuku, when his army was wiped out by the combined forces of Kahekili and Kahahana (ruling chief of O'ahu and Moloka'i). At the end of the battle Kalani'opu'u swears friendship with Kahekili.

1778-79: Kalani'opu'u invades Maui yet again, "...sailing to Kaupo, clubbed the commoners to death on all sides." (Kamakau 1961:86) He then sailed over to Kaho'olawe, then on to Lahaina where he met Kahekili and Kahahana again in battle. Kalani'opu'u's army was wiped out yet again.
After his defeat Kalani'opu'u invaded Lana'i and devastated the island, then returned to Ka'anipali, then down to Hamakualoa where he was again defeated by Kahekili. He then moved on Ko'olau where he was joined by forces under Mahihelelima (Hāna) and fought for 6 months.

1779: Kalani'opu'u returns to Kailua, Hawai'i during Captain Cook's visit.

1780: Kalani'opu'u dies and succeeded by Kiwalao, with Kamhameha (his younger half-brother) as head *kahuna* for the family *akua*.

FIGURE 3.1 (cont.)

1782: Kauiki is finally captured by Maui warriors after it's water supply is cut off, but Mahihelelima escapes to Hawai'i (and killed soon after). After the battle "At the heiaus of Kuawalu and Honua'ula adjoining Kuakaha and Kau'iki are numerous ovens where the corpses of the dead were burned and left to dry in the sun; hence this battle was called Kaumupika'o." (Kamakau 1961:116)

1785: There is a populist revolt on Maui against a lesser chief:"The trouble arose through one of the lesser chiefs (*kaukauali'i*) named Kukeawe, a favorite (*aikane*) of Kahekili to whom Kahekili had given the privilege of letting his pigs run over the land of Kula and roasting them as he needed them. But he seized also the pigs belonging to the country people of Kula, Honua'ula and Kahikinui, as far as Kaupo, and went with a large party to rob them of their wealth even with violence... When the plundering party reached Kaupo they were surprised by some fighting men of Kahikinui, Honua'ula, Wailuku, and Waihe'e under 'Opu, and their retreat was blocked... Hence they climbed the mountain of Haleakala in order to descend to Kamaole in Kula and fortified themselves strongly at Kapuoa." (Kamakau 1961:142) However Kukeawe was defeated and he was killed, his body "...stuck up like an image toward the sea at Palauea." (Kamakau 1961:142)
Despite the violent end faced by Kukeawe, Kahekili (who was now residing on O'ahu, a recent conquest of his) apparently decided that the punishment was legitimate for he sent one of his younger brothers, Kalanikupule back to Maui to rule as governor. While Kalanikupule "...ruled over Maui some of the chiefs of Hawaii came over and took up some land at Hana and Kipahulu on Maui." (Kamakau 1961:143). An abortive invasion of Hāna was undertaken by Kamehameha's brother Kepo'okalani.

1790: Eleanora anchors at Honua'ula. Ka'opuiki (a chief) steals the cutter from her stern and kills the watchman. The cutter is taken to Olowalu and broken up for iron. In retaliation Eleanora first shells Honua'ula, then follows to Olowalu, where the captain lures a large number of *maka'āinana* next to the vessel then opens fire, killing and wounding over 100.
Later in the year the mate from the Eleanora, John Young, is abducted by Kamehameha. Subsidiary chiefs under Kamehameha also capture a sloop and massacre the crew except for the mate Isaac Davis.

FIGURE 3.1 (cont.)

With the muskets and cannon thus acquired (along with others collected by trade) Kamehameha decides to take Maui. He lands at Hāna "...from Hamoa to Kawaipapa." (Kamakau 1961:148) He defeats the local troops then sails to the main battle at Wailuku, which he wins with the assistance of his European weaponry and takes control of Maui.

FIGURE 3.1 (cont.)

Given the evidence elsewhere in Hawai'i, there is no doubt that there were significant population decreases in this region of Maui. The early censuses, which were notoriously inaccurate, especially for outlying districts, show a nearly 50 percent drop in population for the *moku* of Honua'ula between 1831 and 1836 (3,340 population in 1831, 1,911 in 1836) (Resnick 1977:36). This fits the censuses for the island of Maui noted by Sahlins (1992) which shows a 53 percent decrease between 1831 and 1860. The data supports the argument that depopulation was greater in the rural areas, especially the more marginal ones, due both to mortality and outmigration to developing port towns such as Lahaina (Speakman 1981). Population in Honua'ula dropped even more drastically in the next 15 years:

> One visitor to Honua'ula in 1846 noted that "The population of this land is now only 80. Mr. White, who has lived on Maui 46 years, says he remembers when it numbered 2000 labouring men. (Resnick 1977:36)

In 1848 Torbert noted only 6 families in an area encompassing the upland portion of several *ahupua'a*:

> ...the whole tract lying between the old Mauka Road running from Kula towards Kaupo and the forest, and between Kaloi and Kauhao inclusive...There are about 6 native families in said tract, who cultivate about 12 acres, and there are some 4 acres cultivated by people who live at the Sea Side. (Resnick 1977:35)

But depopulation was not only due to disease or the lure of foreign goods. It was also based in increasing frustration with the inability or unwillingness of the *ali'i* to curb the excesses of the haole, especially in areas of cattle rearing.

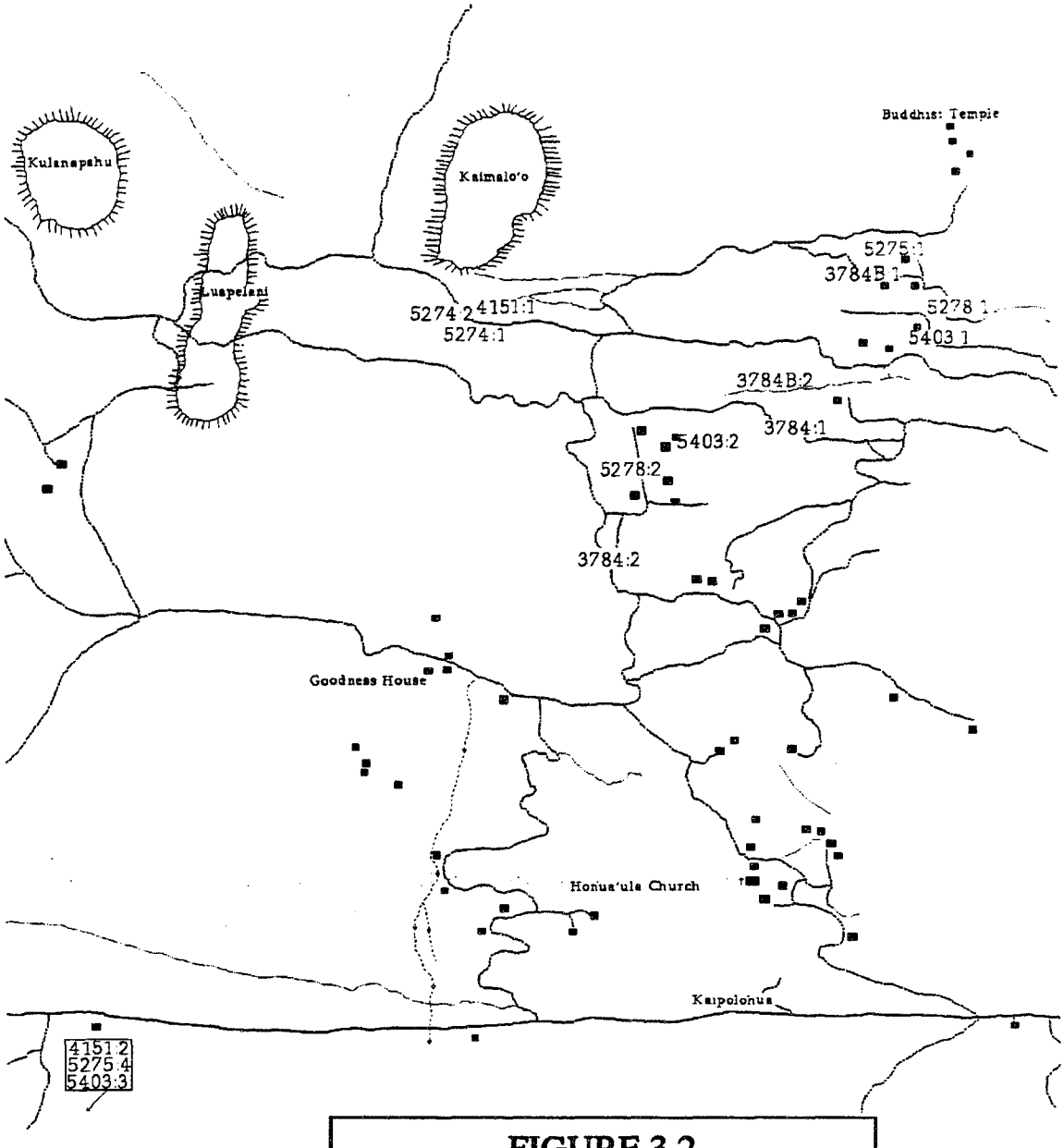


FIGURE 3.2

Land Commission Awards in Kanaio

R.B. 9/94

Conflicts were constant between Torbert at 'Ulupalakua and Hawaiian farmers, as controls were lacking to make Torbert responsible for halting damage his cattle (and likely goats) were inflicting on the farmer's fields or paying restitution (Resnick 1977). The fact that the major crops in the region were vine crops made them even more vulnerable to predation by the uncontrolled herds. The damage also had a more insidious side, as the forest was removed for charcoal and the understory was consumed by the grazing animals, the system of moisture collection and control was destroyed. This situation, mirrors that noted by Sahlins (1992) in Anahulu, O'ahu, for the same period, which resulted in outmigration as individuals were unable to farm their land or protect their crops from the depredations of the herd animals. Given this section of Maui's historical pattern of independence from the Kamehameha Monarchy (figure 3.1) it is no surprise that little effort was made to protect their interests by the government.

This pattern of independence and conservative social patterns is also reflected in the complaints by missionaries for the neighboring Kaupō district, where it was noted that:

> The inhabitants of this district are comparatively stupid and ignorant...
>
> Sorcery has been very prevalent of late years in Kaupo. Many have died in consequence, including some of the Kahunas themselves. Many natives have taken lessons in the art. The revival of these horrible practices is attributed by the intelligent natives to the extensive licensing of native doctors by Kapu, about 4 years ago. (Bishop 1839 ms)

A symbol of the new power in the Hawaiian Kingdom was the establishment of the Honua'ula Church, which was first noted in 1828. The modern structure was constructed in 1837 along with a cluster of "school huts" (M. Kelly personal obs.), and was restored in 1908, and was used until the 1950s. The church quickly became the visible focal point of the Kanaio community in the nineteenth century, a position it still holds today. There are no records to indicate the logic which led to the church being placed where it is, but the location next to the dense cluster of *heiau* of major importance (the Pamano group), which included traditional education, cannot be by accident. The policy throughout Hawai'i, as elsewhere, was to place churches on top or next to traditional religious structures to "prove" the superiority of the Christian ethic (Buck 1993). However this struggle between the old and new powers did not always end in a clear Christian victory, at least in Kanaio, as Sam Po noted:

> ...asked about the pastors of the Kanaio Church, called Honua--'ula. He named all

those he remembered.... 3) George Ka-ua-'a-lena who committed suicide some time after attempting to break up the stone Po'okanaka, to pieces. (Chapman and Sterling 1966 ms)

Po'okanaka is the *piko* stone located in upper Kanaio near Papanuiokāne *heiau*, and is still being used today (personal obs.).

The Māhele (1846-1849), intended primarily to generate revenue for the Monarchy and resolve complaints from Euroamerican settlers for permanent land title, had a tremendous impact throughout the Hawaiian Islands, not least of all in Kanaio-A'uahi. Unfortunately the impact fell almost entirely on the shoulders of the *maka'āinana* and the uneven nature of both land claims and recorded testimony provides at best a partial view of land use in the period. No *maka'āinana* claims were made for the *ahupua'a* of A'uahi, which became part of the Bernice P. Bishop estate, which implies that it was claimed by right of *ali'i*. It is unclear why the area was felt to be worth claiming. As *ali'i* did not have to provide a description of land use to justify their claim, there is no record of the resources or population in A'uahi in the late 1840s.

Kanaio did have several claimants (see appendix IV) and their testimony provides some insight into land use for Kanaio in the mid-1800's with the pressures of partial incorporation into the cash-based taxation and economic system of the Monarchy. As the testimony had to include both metes and bounds, which were usually defined in terms of neighbors' land, and also predominant land use, these records provide a useful view into the cultural landscape of Kanaio in the late 1840s.

In Kanaio (as elsewhere in Hawai'i) the majority of place names given to specific locations within the *ahupua'a* have disappeared but as the Land Commission Awards still exist. This allowed for the approximation of the named locations in Kanaio (figure 3.3). Land use (or at least land of sufficient interest to claim) was located in two major sections of the *ahupua'a* (figures 3.2, 3.4) and consisted of:

Mauka: A series of claims just *makai* and to the east of Kaimaloo which were in mixed ranching and dryland cropping, in the areas named Kaimalo, 'Āpu'u, Pepehunui and Manokoha;

Makai: A cluster of small claims near the coast which appear to have been for ranching purposes and possibly named Kuehu / Kuehunui.

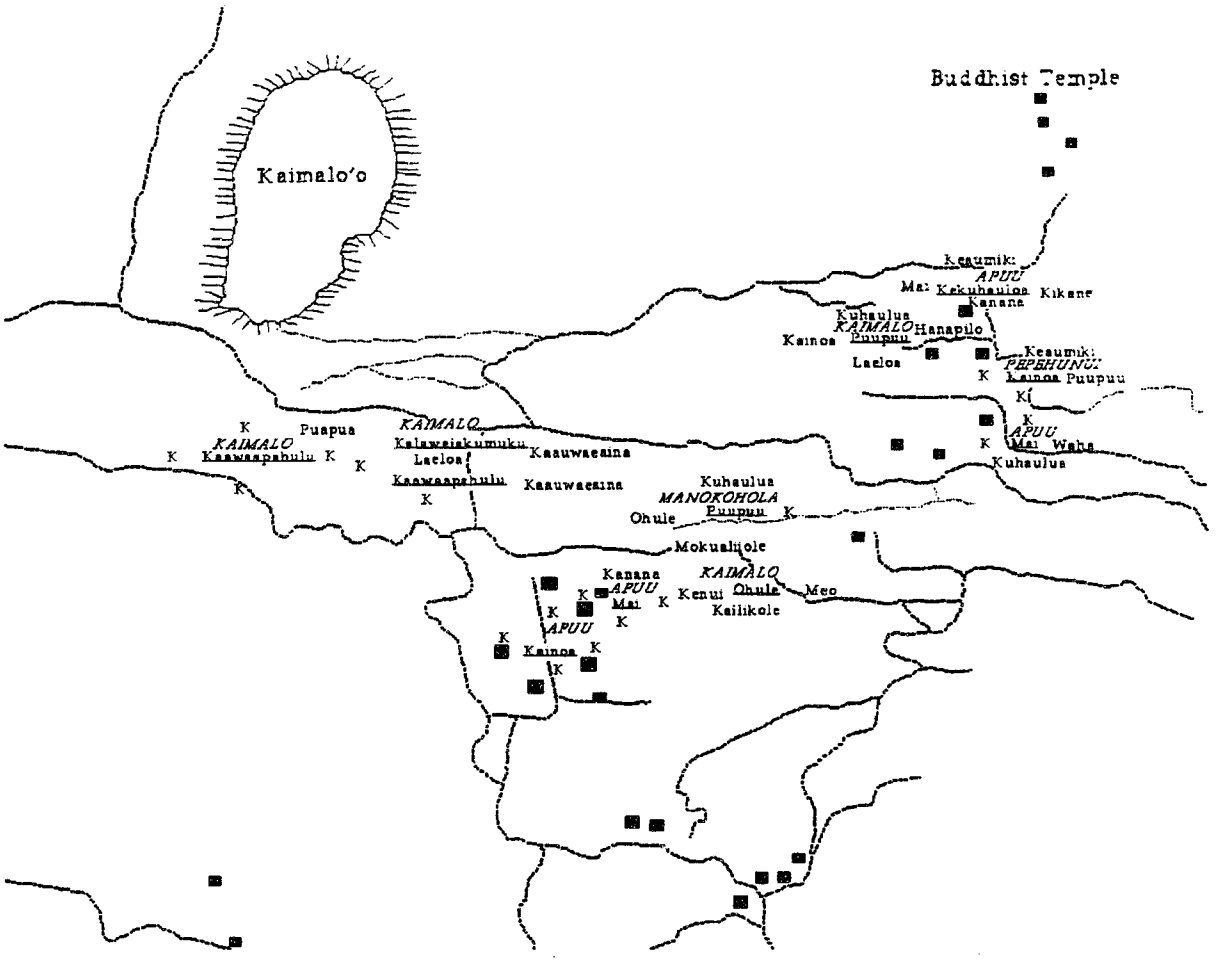


FIGURE 3.3

Place Names, Owners and Witnesses from L.C.A. Testimony

Owners Underlined
Place names in italics

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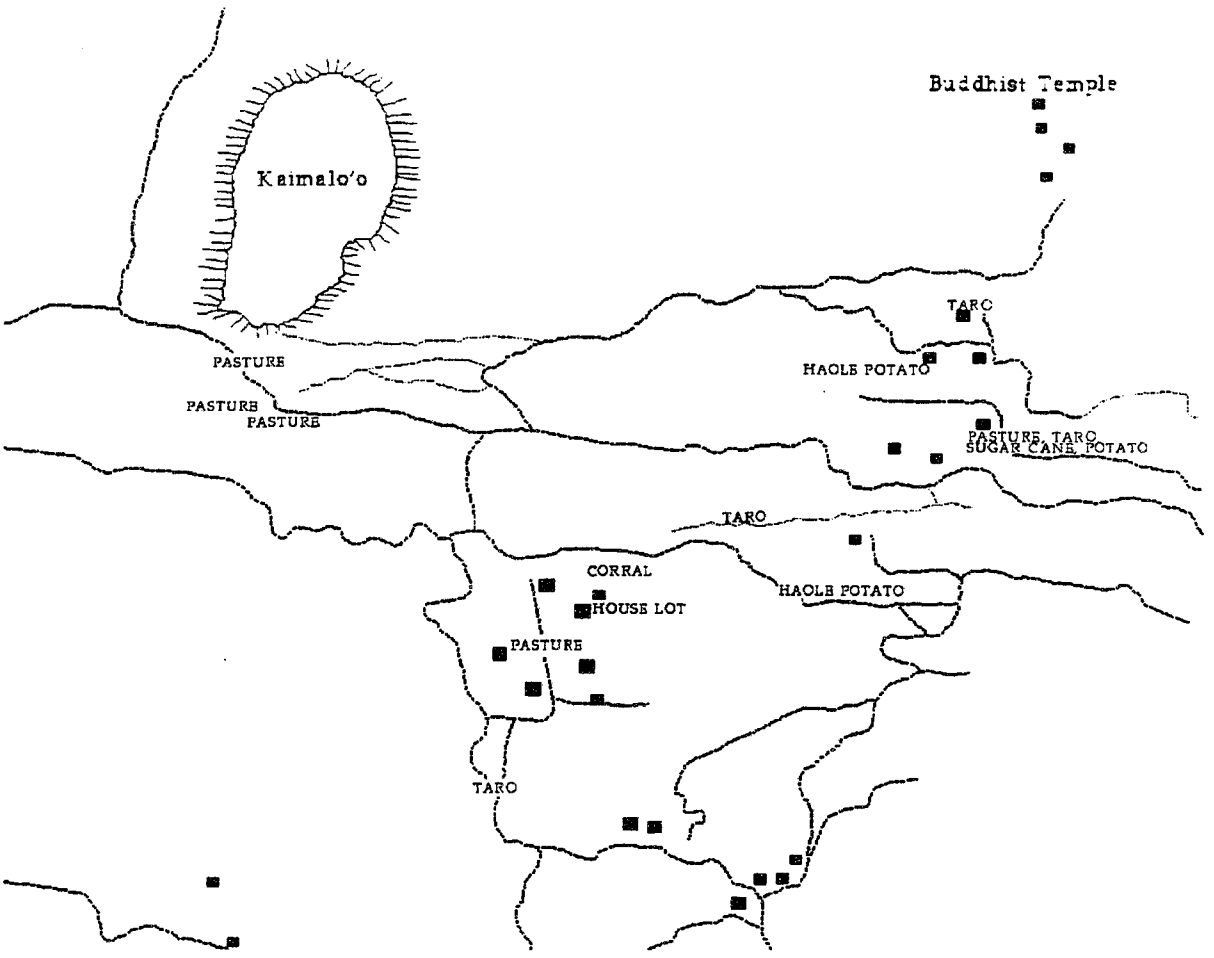

FIGURE 3.4

Stated Use of L.C.A. Lands in Kanaio, 1849

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A key point to consider is the contrast between this very limited pattern of land use with that of less than 100 years earlier (maps 2.1, 2.2, 2.3). The claims were in the *mauka* zone, and most striking is the complete lack of claims in the most productive areas of Kanaio. The lack of any historic sites in A'uahi indicate that the same pattern was followed. The only subsequent claims were either in Kanaio town or lands allocated for Homesteading in the early twentieth century.

The Land Commission Award testimonies describes a pattern of decreased economic and subsistence activity. Fish were a source of barter for *kalo*, and farmers in the area of the church were growing potatoes, pumpkin and bananas. The only major source of economic activity was the Rose Ranch, which operated both as a ranch and a sugar plantation (Makee's)(M. Kelly personal obs.). Even though sugar soon became uneconomical, Rose Ranch (now 'Ulupalakua Ranch) continues to be a major source of jobs in the region in the 1990s.

Trails noted in early maps suggest that the pattern of *mauka-makai* exploitation was still intact, which is supported by the Sam Po interviews (Newman and Sterling 1971, Chapman and Sterling 1968, 1966, Sterling 1968, 1967a, 1967b, Pukui and Williamson 1966). The major pattern of traffic was along the series of east-west trails at various elevations connecting Kanaio to Rose Ranch (Makee/'Ulupalakua) to the west and Kaupo Ranch to the east.

Formal land records for Kanaio-A'uahi must be treated with caution as Kanaio was already developing a reputation as a part of Maui struggling to preserve a traditional identity in changing times. The conservative nature of the inhabitants may have influenced their interest in participating with the Euroamerican inspired formal land acquisition, and it is possible that the Kanaio tradition of land use versus formal (legal) ownership may have developed during this period. The conservative nature of Kanaio society is illustrated by the persistence of traditional activities such as education into the early 20th century:

> It was from this home that Sam and the other children walked the 3 miles to Ulupalakua to attend the regular government school.
>
> There was also a school in Kanaio. This was located below the flat of Pamano in the lava tube of Ala-lo'ihi. Kaipolohua was the name of this section of the lava tube which extends makai and is exposed again a short ways below the present government road...
>
> This school in the lava tube at Kaipolohua was conducted in Hawaiian and was for the purpose of teaching students the arts of fishing, planting, etc. Like the old Hula schools, its rules were strict and the students well disciplined. If rules were broken, a second chance was not given. Sam Po attended this school when he was __ years old but was expelled in two weeks for breaking rules. He was caught writing his name with his

finger in the dust, clapping his hands with stones in each palm, and...

The teacher of this school was a man by the name of Kauwa. He was the mail carrier from Ulupalakua to Makena... (Chapman and Sterling 1966 ms)

The pattern of land use, control and ownership became more complex with the inclusion of much of Kanaio into the Hawaiian Homesteading program in the early twentieth century. According to State and Hawaiian Home Lands employees the Kanaio Homesteads are a remnant of the Homesteading program run from 1908 to 1913 in an attempt encourage return migration to depopulated rural areas. Unfortunately I have been unable to locate documentary evidence for awards and ownership distribution for this program.

Early tax maps of the district show two distinct sections of Kanaio divided up into 100 acre Homestead lots. It is unclear just who applied to Homestead these lots, or how many of the lots were actively settled. Several house sites located in the archaeological survey correspond to lot boundaries on the tax maps, and one extent house, associated structures and walls (fenced) still intact in the eastern section of the Kanaio Homesteads was the uncle of a branch of the Uwekoolani family. Informants stated that he was the last active resident of the Homestead claims, living there into the 1930s (field interviews).

Kanaio in 1900

For Maui 1900 provides a good baseline for the changes that had affected the island since the late eighteenth century. The population of the island was 27,900, of which over half were recent Japanese and Chinese migrants brought over to work on the plantations (Ramil 1984). The Baldwin family, under Henry P. Baldwin, were the dominant economic and political force on the island (owners of Hawaiian Commercial and Sugar Company), and Lincoln M. Baldwin as sheriff held the most important political office in 1900. One of his police captains (and later deputy sheriff) was Guy S. Goodness, who became a District Magistrate in 1912. This Guy Goodness was the same Goodness so frequently involved in land transactions in Kanaio and became one of the major landowners in the *ahupua'a*. Principal crops were sugar, rice, *kalo*, potatoes, various fruits and coffee. Cattle and other ranching activities were secondary to the economic dominance of the sugar plantations (Ramil 1984). This emphasis on sugar encouraged the development of Wailuku-Kahului and Spreckelsville as economic centers, and made southeast Maui into an economic backwater.

From the Sam Po interviews (Newman and Sterling 1971, Chapman and Sterling 1968, 1966, Sterling 1968, 1967a, 1967b, Pukui and Williamson 1966) the image of Kanaio landscape is one in which the residents were a few families scattered around Honua'ula

Church, though a few lived down on the coast at Kalo'i Kanaio-Alaha and Waiailio. Subsistence was based on sweet potatoes and pumpkins with melons and gourds as supplementary crops. While the area was considered quite good for vine crops it was not considered suitable for root crops such as *kalo*, despite the Land Court Award testimony (1846-1849) which claimed *kalo* production in the area. A major focus of the Kanaio community was on fishing and coastal exploitation, to the extent that families would migrate down to coastal residences during the wet part of the year to take advantage of the rainfall to plant in the near-shore area while catching and drying fish and collecting salt. Either by barter or cash poi was imported for private consumption. Though dry, the Kanaio community was still suitable for banana and other speciality crops, though cultivation was difficult.

A major source of protein was goats, domesticated and wild, which were also worked into leather goods. Pigs were also hunted and domesticated, frequently being fed on the fruit of the panini cactus which was prevalent in the area.

As the area was by now very dry, a major source of excitement was range fires, the biggest of which burned from Polipoli to beyond Lualailua Hills, destroying the entire upland forest in at least four *ahupua'a* including Kanaio and A'uahi. While in the short term this provided a great source of charcoal, it must have had devastating consequences to the remnants of the dry forest already under siege by various grazing animals and pigs (Newman and Sterling 1971, Chapman and Sterling 1968, 1966, Sterling 1968, 1967a, 1967b, Pukui and Williamson 1966).

The major source for jobs was either one of the ranches, especially 'Ulupalakua, or working for Maui county as field crew. Most of the stacked-stone boundary walls still scattered throughout both *ahupua'a* were constructed by ranch crews including Kanaio residents. Given persistent accusations of over-generous boundary limits which favored the ranch to the detriment of Kanaio landowners, this seems a somewhat incongruous situation, but it was a paying job (at 50 cents a day). The difficulty of finding a good-paying job, reasonable access to schooling, and the inability to compete economically with the big ranches led to a persistent pattern of outmigration. This culminated in the late 1950s when the last full-time residents departed, though it is important to note that it never was a ghost town, as part-time residents always remained. But the abandonment of the Burns and Goodness houses by the 1950's, and the part time residence by the Po and Poaipuni families can be seen as the low period in the survival of Kanaio as a community. In contrast to the pattern of slow depopulation which typified Kanaio during the nineteenth and twentieth centuries, there are no records for any permanent residents in A'uahi during this entire period until the middle 1980s.

Non-documentary evidence

The oral tradition in Kanaio is not limited to the Sam Po interviews (Newman and Sterling 1971, Chapman and Sterling 1968, 1966, Sterling 1968, 1967a, 1967b, Pukui and Williamson 1966), but also includes present inhabitants, mainly those around the Honua'ula Church (lower Kanaio), most of whom can trace genealogical and social ties back to ancestors in Kanaio from the late eighteenth century. Modern residents note that Honua'ula Church had become the focal point of the community by the early 20th century and likely long before that. While literacy was commonplace by the mid-19th century in Hawai'i, the church was nonetheless a key feature in the community. The pastor was frequently the most educated individual in the region, and the church was the main communication link to the rest of the islands, especially the government center in Honolulu. The churches were seen both by the populace and the government as a major communication link. But the church was more than just a communication hub, as it also served as the arbitrator between the rural Hawaiian population and the increasingly Anglicized urban Monarchy. The pastor was frequently more sophisticated in the Anglicization of the country by virtue of his missionary training than the rest of the population, and it is likely that a major task of the pastor was that of interpreter of the changing ways for the rest of the community.

This is easier to comprehend if one understands that the Anglicization of the Kingdom was in large part developed and pushed through by American missionary efforts in their goal to impart "civilization" to the Monarchy's inhabitants. Church pastors were seen as the key element in the civilizing process, in moral and social education. With the centralization of the Monarchy by the 1850's the need for individuals to become aware of and sensitive to these changes had became obvious to many, especially with the combination of the land dispossession resulting from the Māhele (1846-1849) and the shift in taxation from traditional forms of goods and labor to that of cash payments. The population in rural areas such as Kanaio was isolated not so much by distance as by rapid social change from the urban centers, especially Honolulu. The church and resident pastor were the interface between the rural present and urban future facing the population in Kanaio in the 19th century.

Informants noted that Honua'ula Church was the repository of all written records (births, deaths, marriages, land transactions) and that most were recorded by or with the assistance of the church pastor. This gave the pastor a tremendous amount of power in the community by combining their religious and secular roles. Informants consistently noted this as the reason that other areas of Kanaio had been abandoned -- the desire to be near the church and pastor. Several also hypothesized that this was why A'uahi was abandoned, that

the distance from the Honua'ula church was too great.

The shift from familial, dispersed populations, into tightly clustered village populations has often been cited as a major result of increased western contact in Polynesia (Resnick 1993). The evidence for Kanaio-A'uahi does not support this argument. The archaeological record indicates that clustered residence was typical long before western contact, in both Kanaio and A'uahi. During the initial period of european contact, a pattern of quick abandonment of settlements occurs in both *ahupua'a.* This suggests that depopulation was likely due as much to disease as migration, with the remnant population settling around Honua'ula Church both as sanctuary and intermediary. Given the success of Kirch and Sahlins (Kirch 1992, Sahlins 1992) in locating historic evidence for residence and activities in Anahulu by the 1850s, it may be assumed (with some caution) that the majority of Hawaiians living in Kanaio and A'uahi had either died or migrated out by the period of the Māhele (1846-49). This would explain both the lack of claims for most of Kanaio-A'uahi and the spatially-concentrated nature of the few claims that were made.

This pattern of acculturation (or struggle against acculturation) has discussed by many authors (including Kame'eleihiwa 1992, Sahlins 1992 and Linnekin 1990, 1985). A major side effect of such struggles was the loss of community identity, power, and link to traditional cultural landscapes. This can be seen strongly in the Sam Po interviews when the anglicized concept of information conflicts with traditional Hawaiian forms:

> He [Sam Po] would not talk about the places we were passing, saying, "My old folks told me never to talk about places outside of one's own native district. One should only tell of his own native district, and be honest and truthful in telling it." (Chapman and Sterling 1966 ms)
>
> PC [P. Chapman]: Were these names, up and down this coast, that we've been using all this time--you learned from...who told you the names? How did you learn them and who else knows them?...
>
> SP [Sam Po]: My grand, tutu know all these names. I learned them from my tutu, Kekahuna...That old man, he know all these grounds...
>
> SP: He know all the place, even my tutu wahine. Tutu wahine know all this place. I used to go with them fishing and they used to tell me my mo'opuna over here a certain name, a certain name 'til I think I'm only one the boy in Kanaio that know all the--
>
> PC: ...these are the names and he knew them and he taught you but I wonder how many people, as you were growing up,--everybody from Kanaio knew the same name?

SP: Nah.--Well, I don't know but--

PC: Other people use the same name?

SP: Well, naturally the big name like Wakalani. Between Wakalani and Kalapawai they don't know...

PC: But the big ones--

SP: Ah, they know...

PC: So these names have been handed down to Kekahuna his father?

SP: From his father. Before that he learned ..? Before that, lotta people know these names...

SP: Even this one here Alaha, they don't know... They don't know. Well lot of the people even my cousins. He don't know...I'm only one know all the places... (Chapman and Sterling 1966 ms)

As can be seen, the level of knowledge held by invidividuals and disseminated throughout the community was usually within the familial social structure. Knowledge was power and power was carefully guarded and rationed. Within a stable, largely sedentary population this was beneficial in providing unique identity to each familial group and a sense of shared unique power. But in the turbulent times of the 19th and 20th centuries this knowledge, in almost all cases carried only as oral records, became lost as individuals left or died. The training for such knowledge as place names took place while at the location--the knowledge was not abstract, but linked to the place. Holding and using the knowledge was linked to a firm ownership of certain cultural landscapes, in that you would only discuss areas within "your own district" as Sam notes above. The outmigration and mortality rates in Kanaio-A'uahi made it difficult to transfer the knowledge to interested members of the next generation. This, combined with pressure to conform to the new dominant social order which intentionally devalued all traditional knowledge as "heathenistic" and of no worth, resulted in rapid collapse in the continuity of the traditional cultural landscape in Kanaio-A'uahi.

Interviews with current residents frequently involved some discussion of the impact the loss of these *kupuna* (specifically Sam Po and Jonah Poaipuni) has had on maintaining continuity was the past and the land. Other than the collection of interviews conducted during the Peter Chapman research with Sam Po (Newman and Sterling 1971, Chapman and Sterling 1968, 1966, Sterling 1968, 1967a, 1967b, Pukui and Williamson 1966) no other collections of their knowledge about the land or oral histories were collected. With their passing this continuity with the cultural landscapes of the past has been lost.

CHAPTER 4

CONTEMPORARY CULTURAL LANDSCAPES OF KANAIO AND A'UAHI SINCE 1940

The initial change to the cultural landscape of Kanaio-A'uahi in the territorial period (1900-1959) was the construction of a camp just *mauka* of Pu'u Pimoe for prison road gangs constructing the new highway to from Kula to Hāna. This labor camp continued in use in one form or another into the 1950's.

The Territory of Hawaii suffered major social dislocation as a result of the World War II military presence. Unlike the rest of Maui, Kanaio and A'uahi survived the massive expansion of the United States military during World War II without extensive visible impact. Unlike nearby areas like Kihei or Mākena, this section of the leeward coastline was not suitable for landing maneuvers. The extremely rugged surface discouraged large scale movement of men or vehicles. Unfortunately the same inhospitable image made the *makai* section of Kanaio eventually appear suitable as a firing range.

During and after World War II on Maui, as in the rest of Hawai'i, the huge influx of American servicemen, support services, and infrastructure expanded the demand for service-sector services to a before-unimaginable degree. The rural, agriculturally based plantation lifestyle was shattered by the influx of, on Maui alone, tens of thousands of servicemen and women. Central Maui was the base camp for the entire 4th Marine Division (a duty strength of 17,000 men), and on island of Maui had no less than 47 training areas. With installations representing all branches of the military, and related support services, the military population on Maui between 1943 and 1945 peaked at over 30,000. When compared with the resident population of 46,919 (Thrum 1946) the impact of this temporary population can be better appreciated. To this must be added the tremendous purchasing power of this military population, many of whom were in the mood to spend money before or after duty in various Pacific island campaigns (Ramil 1984, Speakman 1981). In many ways this period was a striking precursor to the tremendous tourism growth of the 1970's and 1980's.

During and immediately the war the areas around the military bases or recreation zones (such as Lahaina) acted as a major attractant for residents, with plentiful work and high wages. To a population used to the highly controlled wage market of the plantation

economy the economic boom of the World War II period triggered major relocation. Higher wages increased desire for consumer products that could not be satisfied in the rural hinterland, such as Kanaio-A'uahi. The physical effort and knowledge needed to make an economic living from the land in Kanaio was not of interest to most of the population, especially given the more attractive opportunities on the nearby ranches (which provided free or low-cost housing), or in the rapidly expanding urban centers (Ramil 1984, Speakman 1981). By the 1960's Kanaio had become a near ghost town, with temporary inhabitants who had been former full-time residents, such as Sam Po and Joseph Poaipuni (Murphy 1993, Youngblood 1986, Newman and Sterling 1971, Chapman and Sterling 1968, 1966, Sterling 1968, 1967a, 1967b, Pukui and Williamson 1966). With this loss of economic interest in the land, almost of the *ahupua'a* reverted to open range for cattle.

In the mid-1960's the Hawaii Army National Guard took over the former prison labor camp site, along with the land *makai* of Pu'u Pimoe, and constructed a a small arms live firing range complex (P. Erdman personal comm.). The area of the former camp was developed into a series of bunkered small-arms firing zones and associated structures. Heavier weapons, including automatic weapons, mortars and plane-delivered ordnance such as rockets were fired into the area below Pu'u Pimoe. The Hawaii Army National Guard is still the custodian of the firing range, and still uses the the small-arms ranges. The heavy weapons range is no longer active, and all ordnance was supposedly removed at some time in the past, but this lower range is still bounded on all sides by live ammunition warning pylons prohibiting access, and scattered ordnance was noted during the field survey.

Other than increased military use, Kanaio and A'uahi were seeing a total outmigration of the remaining permanent residents in the post-World War II period. A'uahi had been owned by 'Ulupalakua Ranch since 1900, and the Ranch actively developed the property with clearing and pasture improvements to handle increased herd density (P. Erdman personal comm.).

Contemporary Images of Place in Kanaio-A'uahi

The elephant of contemporary cultural landscapes making up Kanaio and A'uahi is seen by a number of interested parties. While all groups involved in Kanaio share some images of the cultural landscape, each group also has aspects of their cultural landscape that are unique. A further level of complexity exists, as each group consists of individuals, who, on one hand share a number of images, yet a number of other factors, including length of residence, religious attitudes, and differing individual perceptions make every individual cultural landscape very personalized and idiosyncratic.

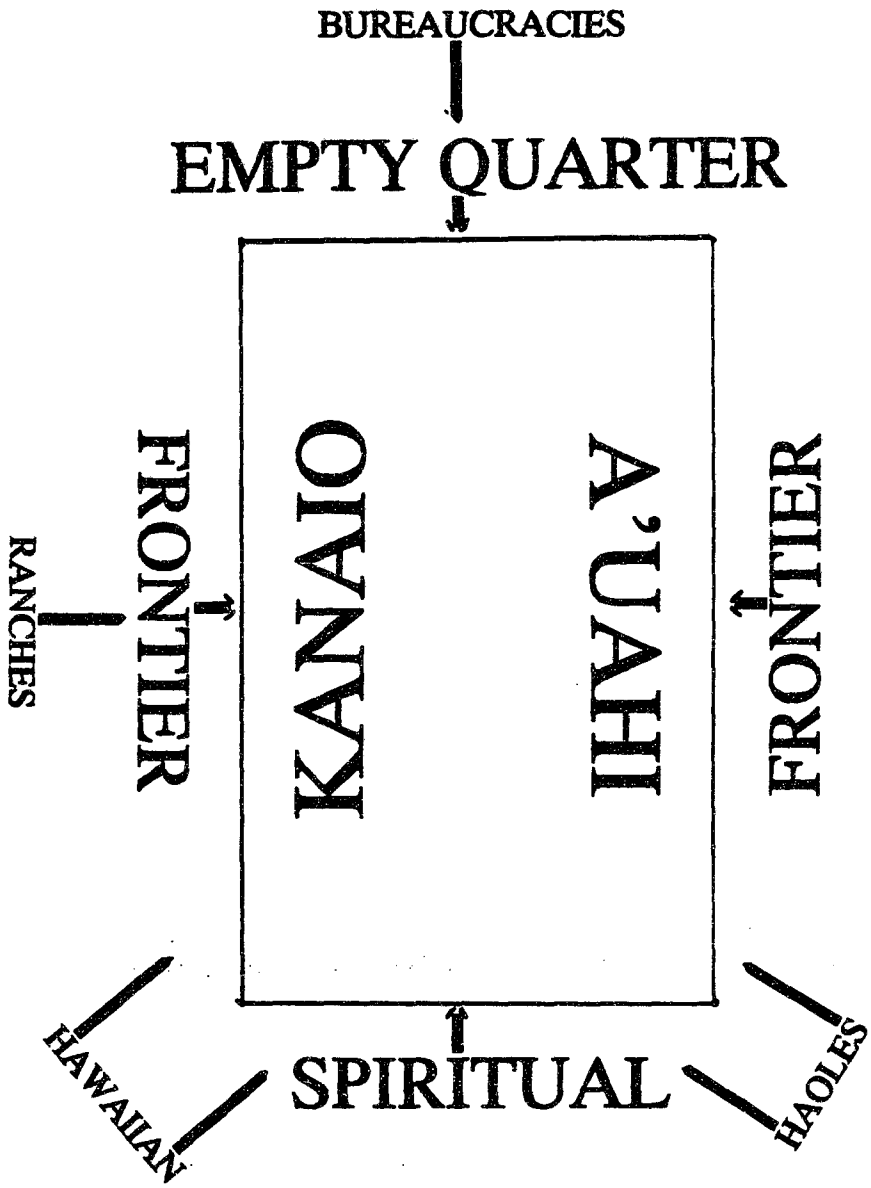


FIGURE 4.1

IMAGES OF KANAIO-A'UAHI

R.B. 9/94

These layers of commonality and diversity are at the core of the controversies with the concept of the cultural landscape in cultural geography.

Even at the level of individuals it is possible to see patterns of shared images, patterns which reflect values and beliefs held in common by a group --the Cultural landscape. This complexity of image and perception has been discussed in depth by Vale and Vale (1989) and Duncan (1993) for the American West, with Meinig (1979) and Jackson's (1984) work at a more general level. Vale and Vale (1989:4) have noted that:

> This recognition of the variety of feelings toward and interpretations of landscape is not, then, meant to suggest that such reactions are without bounds or patterns. Rather, the diversity itself might be part of the organized generalization. Somewhere between the monolithic characterization of an entire society and the chaotic variability of individual differences are generalizations about landscape meanings that represent the values of large or otherwise significant segments of a human society.

Their conceptual structure for sets of regional landscape meanings has been applied to this study as a means to illustrate the competing nature of the various groups who interact in Kanaio and A'uahi. From the written materials, interviews, and the physical changes people have made to the land I have developed a series of images which define each group's characteristic views of Kanaio-A'uahi. The views held by various groups interact in a number of ways:

> They are not mutually exclusive; many overlap. Some are similar to one another but vary in emphasis or perspective. Some contradict each other; others are more compatible. (Vale and Vale 1989:7)

For Kanaio and A'uahi the contemporary cultural landscape images fall into five main categories. These categories are not mutually exclusive, and can in some cases be shared by a wide range of groups in Kanaio. In other cases the category reflects a series of images held by only one group. The fact that two distinct groups share a set of images (a category) does not mean that they share the same values and attitudes toward the place, and in fact in several cases different groups share one category of images and yet are widely diverse in others. The categories are based on those developed by Vale and Vale (1989)(figure 4.1).

Raw Nature: This is the most visible image for the first-time visitor to Kanaio-A'uahi. At present this region is a transition area between the tourist locations to the west

(Kihei-Mākena-WaiLea and Central Maui) and Hāna to the east (map 1.1). The change from the moist and relatively lush vegetation of Kipahulu (east) or Kula (west) to the very open, treeless and barren area typical of Kanaio-A'uahi comes as a shock to many visitors. Tourist brochures and travel guides usually only mention this area in the context of warnings and cautions: lack of facilities; poor roads; and harsh, barren landscapes (Ariyoshi 1993, Kepler 1987, Youngblood 1983). It is an area to get through as quickly as possible on the way somewhere more inviting and closer in image to the lush tropical paradise so heavily promoted for Hawaii in general and Maui in particular.

This section of East Maui is unique in the contributions the general landforms make to this image, for the combination of the Haleakalā rain shadow promotes low rainfall, clear horizons, and frequently clouds cover the distant verdant regions. Combined with the long lines of sight on this side of Haleakalā, the impression is of long natural vistas, uninterrupted by any features other than scattered cinder cones (plates 1.1, 1.2, 1.5). This is enhanced by the lack of visible indication of human occupation, past or present, which reinforces the image of Kanaio-A'uahi as an area of primeval nature, disinterested or possibly even hostile to human intrusion.

The coastal zone is by far more striking in this imagery. The lack of paved roads means the jeep roads quickly disappear in the broken *a'ā* of the same color and texture (plates 1.3, 1.8). The erratic ridges and complex forms of the recent lava, most either black or dark red-brown, do not follow any regular lines. The pre-contact structures, made of the same material, vanish even at close range, and the only noticeable features are the coral markers for foot trails. This very dark and erratic surface, combined with the bright sky, strong winds, blue sea and the invariably strong surf, produce a striking picture of nature in contest with itself. People are not part of this environment, which works at a massive scale, with the entire horizon consisting of these elements unrelieved by visible human intrusion.

Home: This image is the one held most close by the Lower Kanaio community. As the majority of the Lower Kanaio community have genealogical links to the land through Hawaiian ancestors, the Kanaio community can be generalized as a modern manifestation of traditional cultural values and beliefs. However this is a major oversimplification of a very complex group in which membership is expressed mainly through kinship, and is based within a cultural system in which kinship has emotional and spiritual ties much more complex than the Euroamerican norm.

An often-overused and now trivialized term of *'aina* has been used constantly to express this link to land within myriad religious, emotional and kinship ties. The most technologically accurate term would be the formal anthropological use of the term clan,

which describes a group of people who believe themselves related. As in the rest of the Pacific the clan in Hawaii includes the living, dead, as-yet-unborn, and the founding ancestors who were more-than-human (Sahlins 1992, Bonnemaison 1985a, 1984, Linnekin 1985, Doumenge 1982, Leenhardt 1970, 1947). The ancestors were god-beings who not only can take various forms, but also in the past shaped the physical landscape and placed their descendants as caretakers upon it. Despite changes in relationships to land in the late pre-contact period, the complex religious, spiritual and kinship ties to land as expressed in the clan concept persist as a fundamental part of Hawaiian cultural identity (Sahlins 1992, Kame'eleihiwa 1992).

In this system images of place reflect familial history and events, a land peopled with kin and mementos. The landscape is a family scrapbook, manifesting the past, present and future. It discourages outmigration and rewards tradition. It feeds, encourages, nurtures and protects. It provides a haven and spiritual support when needed. The closest parallel in contemporary American culture would be the "returning home" images so beloved around Christmas time, with the warm home beckoning during the evening cold--the haven.

Spiritual Center: The spiritual center image is possibly the most complex and controversial for Kanaio residents. Some of this tension is a result of the historical power struggle between traditional belief systems and the imported Christianity, as manifested in Honua'ula Church and its intentional location in a complex of *heiau* as a physical statement of relative religious powers. However, the spiritual center image also reflects contemporary competing views of the sacred nature of the Kanaio landscape, sometimes using similar terms, generated by very different cultural and ritual backgrounds. The most visible divergence is between the Lower Kanaio community, based on the clan and *'aina* concepts, and the Upper Kanaio community with the sacred place or power locus concept (appendix III).

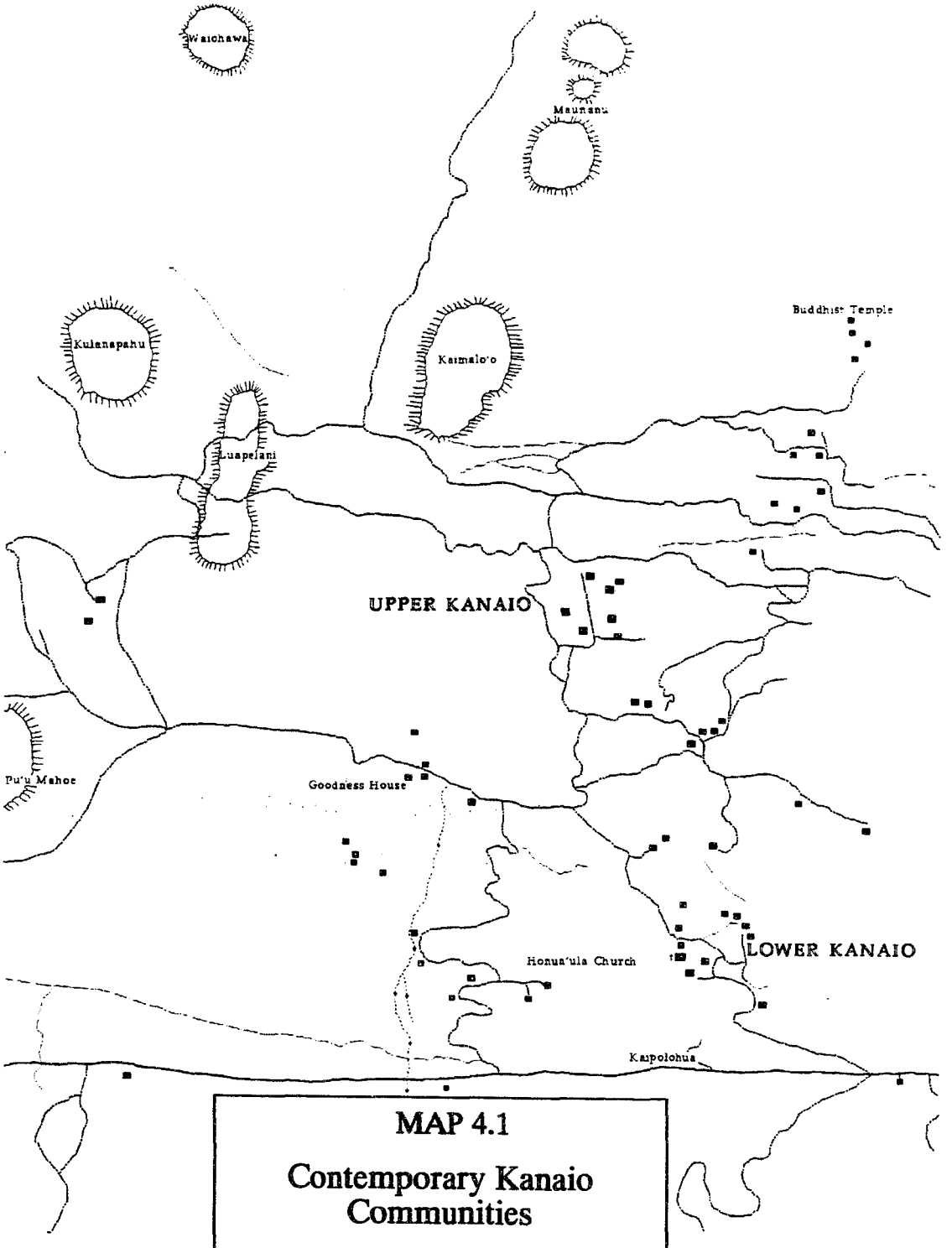
Both groups base their images within the traditional anthropological concept of *mana* or power, and both involve the acquisition and manipulation of this power for various needs or goals. Divergence occurs when discussing how this power is acquired, who has legitimate control of it, and how it should be used. This marks a very unique pair of ritual cultural landscapes, neither which bears a close resemblance to earlier historic patterns. As if this was not sufficient, superficially similar yet in detail quite different ritual landscapes based on the spiritual center have been generated by New Age groups from other parts of Maui, O'ahu, and the mainland United States, some for personal development and others for economic gain (or both).

Despite their differences, all these views share a common belief that Kanaio is ritually powerful, a place with a significant measure of *mana*. To some residents the land in all its manifestations is a shrine or temple, to others a place to construct human-made features to serve this purpose. But it is powerful, and as power and ritual go hand-in-hand, it is not surprising that conflict is often rooted in the divergent views of the Spiritual Center images of Kanaio. Missing entirely from this dialog is the *ahupua'a* of A'uahi. A'uahi is not seen as a place of equal *mana*, or at least not for the groups interested in Kanaio.

Frontier: This frequently seems to be Kanaio-A'uahi's most enduring image, both to residents and others familiar with the region. This image is linked to two major factors, the first being the expansion of ranching activities in the 19th century. The development of the various large ranches as major economic and social forces in Honua'ula and Kahikinui had a tremendous impact on residents This ranged from means to successfully participate in the western economy, or as a way to escape from increasing acculturation in other sections of Maui. The second factor was the outmigration from Kanaio in the nineteenth and early twentieth centuries.

The depopulation of Kanaio-A'uahi, combined with the paternalistic dominance enjoyed by 'Ulupalakua Ranch into the late 1960's, supported an image of the area as the "Wild West" so beloved in American literature and media. Encouraged by ranchers and *paniolos* (cowboys) as it reflected the image they wished to portray, Kanaio became an island extension of Tombstone, Arizona or Billings, Montana. This image is still likely the most popular for most Kanaio residents (though now in conjunction with other images) as it portrays their town and *ahupua'a* as self-governing and outside the meddling of various bureaucracies at the Federal, State and County levels.

This image is based in strong individualism and "traditional American virtues" of self-reliance, independence and determination (Duncan 1993). It presents the community as a collective of individuals who decide individual and group behavior in relationship only to the moral standards of the rest of the community. One price of this freedom is a lack of amenities taken for granted elsewhere on Maui, such as individual telephone lines and constant water pressure. Another cost is in the constant harassment by various bureaucracies seeking to destroy this freedom (improving roads, Green Harvest overflights for drug removal, building code inspections, Department of Land and Natural Resources land designations) and incorporate this unruly area into "tame" Maui society.



MAP 4.1

Contemporary Kanaio Communities

R.B. 9/94

Empty Quarter: This image holds that Kanaio-A'uahi is an uninhabited area appropriately controlled by distant bureaucratic agencies. In this view the land is passive, an area that can be used, manipulated or changed at will, based on demands and concerns outside the area itself. This image differs from the other categories in that it really contains no image at all, just a passive empty location, a space on a map that can be filled.

This is the image held by external agencies involved with Kanaio at the State and Federal level. At the level of Maui County the image fluctuates between disinterest, recognition of the Kanaio community as an entity and the Empty Quarter, sometimes all playing simultaneously in different departments of the County administration. It is this view of Kanaio and A'uahi as the Empty Quarter which engenders the most heated debate between Kanaio residents and outside agencies. It also acts as a unifying force for most Kanaio residents: regardless of how much they disagree about image and perception of Kanaio, none of them see it as Empty. The best examples of the bureaucratic image of the Empty Quarter are the State of Hawaii's handling of a land ownership dispute with the Uwekoolani family, the planning process for the Geothermal powerline, and Federal involvement in the area. Locations appropriate for Natural Area Reserve status without full understanding or interest in related land issues (the Uwekoolani case), or for major powerline construction without full environmental assessment are passive and distant. A place deemed suitable for live ammunition practice certainly qualifies as the Empty Quarter.

Lower Kanaio and the Hawaiian Cultural Landscape

Contemporary Kanaio is unique for several reasons: first is the physical and social separation between two distinctive communities, designated the Upper Kanaio community and the Lower Kanaio community. The Upper Kanaio community consists almost exclusively of individuals who have arrived in Kanaio as recent migrants (post 1976), and have no genealogical or historical links to the land. The Lower Kanaio community are members of the Hawaiian families who have genealogical ties to Kanaio who see themselves as returning home.

The second unique aspect is that the Lower Kanaio community essentially abandoned Kanaio as a place of fulltime residence for over a decade. From 1963 until 1976 the *ahupua'a* of Kanaio had no permanent inhabitants, and all structures excepting two houses and the Honua'ula Church had disappeared (field interviews, P. Erdman personal comm.). The migrations that repopulated Lower Kanaio occurred simultaneously as the move of new

residents into Upper Kanaio, but the two communities developed in distinctively different directions and remain distinctive today. While return migration to areas has occurred elsewhere in Hawai'i, the resettlement of a community by its former inhabitants and their descendants after a decade of abandonment is unusual.

The Lower Kanaio community can be defined as the residential zone bounded at the *mauka* end in the west from the Goodness House along the 2400 foot contour to a point below the reservoir as the east end (map 4.1). Pu'u Pimoe is the *makai* boundary. While the majority of residents are located along the upper Kanaio road or the network of jeep roads that extend between the upper road and the Highway, two secondary residential clusters also exist. The first, the *mauka* west cluster, is located along a jeep road that extends from the main Highway up to the upper Kanaio road just beyond the Goodness House (map 4.1). The second cluster is *makai* of the main Highway at approximately 1400 feet, west of Pu'u Pimoe, and below the other secondary cluster. These two clusters are visibly separated from the main lower Kanaio community both in access and distance, to the extent that most of these residences are not visible from the main community (map 4.1, plates 1.1, 1.7) and vice versa.

While Lower Kanaio is labeled here as a Hawaiian community this is a generalization. Several residents are not Hawaiian either by kinship or cultural background, and are in fact in two cases migrants to Hawaii. However, most of the community is part-Hawaiian, and more important than kinship, the attitudes and values of this community are strongly based on the traditional Hawaiian social system. Individuals moving into Lower Kanaio are expected to embrace the cultural logic of this community even if kinship are missing, and a common area of discussion about individual behaviors is in the context of fulfilling or contradicting these social patterns.

Excluding a few anomalous residents this community holds two major images of Kanaio -- Kanaio as Home and Kanaio as Spiritual Center.

Kanaio as Home

Almost all of the Lower Kanaio community is residing on land which they feel they have genealogical rights. This is frequently the first reason residents express both for residence choice and also for returning to Kanaio in general. As the families residing in Kanaio are all related to common ancestors this frequently leads to dissension about rights of access and use in Lower Kanaio. As people did not return as a single unit, and are in fact still returning to Kanaio in significant numbers, confusion and resentment has resulted from a number of causes. These include:

The First Home phenomena: In a form of migratory primogeniture, the residents who returned first (1970-1985 period) took the best lands for residence or to work. Claim is based on the dual pattern of kinship ("it belonged to our family") and first returned ("when I returned there was no one here working the land, so I settled on the section that I could use")(field interviews). This tends to create friction between some of the older residents (time in residence) and more recent returnees who find themselves in less-desirable locations, though their claims may be as good or even better than those of the earlier returnees.

Increase in Descendants: The older generation (50 years of age and older) who still carry memories of residence (or at least use) in Kanaio prior to the outmigration of the 1930-50s have the strongest claim to the land, as they can populate it with people, events and named places. This legitimizes their control of the cultural landscape in a traditionally appropriate fashion (Chapter 3). However, this generation is passing away, the most significant recent loss being Jonah Poaipuni (Youngblood 1986). The disappearance of this generation and their complex ties to the land has had a major impact on the Lower Kanaio community, who feel the loss in traditional links to the Kanaio landscape. The younger generation of returnees is significantly greater in number than their parents, and this is causing increasing stress as individuals, families and extended families try to juggle limited land claims, increasing familial pressure to find land, and the desire to keep space between families. This pressure has led to conflict on several properties in regards to legitimate claim to land, with several active cases underway contesting control and access to land between individuals. Most of these cases are motivated by increasing pressures within families, forcing them into conflict with distant relatives over land issues that all sides had been aware of for some time but were able to avoid resolving as long as land was plentiful.

The desire to avoid open conflict is typical of Lower Kanaio where avoidance is the normal form of conflict resolution. This pattern has apparently been manipulated in at least one case by individuals willing to become involved in conflict, who get others with possibly more legitimate claims to land to back down or face open strife. This conflict avoidance is a hallmark not only of Lower Kanaio, where it is a part of the traditional Hawaiian social system, but also in the Upper Kanaio community. However this pattern of avoidance manifests itself within each community rather than between communities. Members of the Lower Kanaio community are more apt to engage in conflict over land control with members of the Upper Kanaio community, whom they (Lower Kanaio residents) feel lack legitimate claim (by virtue of genealogy) to the land. They invoke traditional concepts of land control (such as *'aina*), and of giving the land to descendants as strong positive values. This also devalues selling the land for profit, especially to outsiders, as this reflects the American

emphasis on individual land ownership and cash investment which competes with the traditional system they value so highly.

The central image of Home is that of home as social networks, or home as familial roots rather than home as a place of residence. It is interesting to note that the very strong emotional value placed on genealogical link to place, which is found not only in Kanaio but is expressed frequently by contemporary Hawaiians is at odds with the non-land based form of control found during the last pre-contact and early Monarchy period. In fact the founding ancestors the Kanaio families trace legitimate land control to were part of Kamehameha's ordered migration to control Maui populations, rather than being traditional Maui families. The intervening 200 years has taken the relationship with the land back to the more traditional land concepts in Hawaii which predate the usurpation by the *ali'i*, to the older form of land as controlled by extended families (clans), as in the rest of Polynesia (Chapter 3). When the Lower Kanaio population invokes land legitimacy they do it within the old system, which as both Sahlins (1992) and Kame'eleihiwa (1992) note was never completely supplanted by residence controlled by elites. The power this view still holds can be seen in the fact that most residents must commute long distances on poor rural roads every day to get to work, go shopping or send the children to school, yet have made a conscious decision to move to Kanaio despite these difficulties.

The older system was only successful within a strong extended family system with a coherent system of rules and regulations, especially as to whom would have access to resources. This was traditionally handled by family elders, frequently with an individual(s) appointed to represent the family and resolve disputes between family members. In most of Polynesia this individual would be the family *matai* (headman), whose decisions controlled family members (Kamakau 1976, 1964, Malo 1951).

In contemporary Kanaio the small extended family is the norm, usually with three generations of kin present--parents, grandparents and children. The larger extended family unit of traditional form is now a loose association, and senior males (and elders) have at best only power of coercion to control family members. This becomes clear when looking at returning migrants, who though family members, are moving onto more contested properties while the older (residence-wise) members stay on their land. This is reflected also in the conflicts re Kanaio Hui land, where ownership for some families is only 1/256 of approximately 101 acres (or 0.4 acres)(County Tax Records, 'Ulupalakua Ranch ms). Though the ownership is extremely small, the reality on the land is that those who have set up residence control significantly greater percentages than their legal title gives them access to as individuals. In some cases they are consolidating other absent family member claims (or deceased individuals), but since Kanaio Hui land was never formally divided up, earlier

returnees selected the most attractive portions of the communal property, leaving later returnees the less-desirable portions. Not surprisingly this leads to conflict and bad feelings about earlier arrivals co-opting the prime real estate and leaving others small and more unattractive sections, with length of stay taking precedence over legal percentages.

The situation becomes even more complicated when one considers that with the complete outmigration from 1963 until 1976 no family members were left to maintain the land and appropriate boundaries. This clouded responsibility for paying taxes due on property and other legal matters, the result all to frequently being loss of the land due to lack of interest by family members prior to the 1970s. In Kanaio land frequently was repossessed by the Territory (State of Hawaii) for nonpayment of taxes, though there were family members alive elsewhere on Maui. Even in situations where a family member or group was paying taxes on the property, the property was sometimes sold out from under them by other family members, or in one case used to pay gambling debts incurred by a family member ('Ulupalakua Ranch ms, field interviews).

While this led to a tangle of clouded ownership rights, the issue did not become critical until the 1970s when family members decided to return to Kanaio, at which point these unresolved issued reappeared. The title to the land may be clouded as the Territory/State may have repossessed the land for nonpayment of taxes, though several families insist they were paying (and in at least one case are still paying) the proper taxes. Second, as there is no authority delegating access to land, somewhat of a free-for-all results, with earlier returnees collecting the best land, though their claim may not be the strongest. *First come, first served* seems to be a common rule on much of the family land in Kanaio. Friction not surprisingly results when other family members, in several cases including those who have been paying the taxes, try to move back and find the best land all taken by relatives. Traditionally this would be resolved from within the larger extended family through the application of the control by elders and family leaders, but today these do not have the power to adjudicate disputes. The result is resentment and tensions within the larger extended family or clan units, exacerbated by a social system which avoids conflict.

Given the past confusion of land transfers, loss of written records, and a common pattern of *hānai* individuals (who in several cases become key players) in the past, results in a situation where land issues in Kanaio are very localized. A worst-case scenario (based on several disputes) would have a contested piece of land being argued between the following parties:

> A family who claims a direct genealogical link and by virtue of kinship holds traditional ownership of the land;

A family who has an indirect link by virtue of having purchased another family member's percentage (say 1/256) in the land;

A recent migrant *haole* who bought the land in good faith from individuals who claimed to be the legitimate owners and are members of the families above;

The State of Hawaii, who claims ownership by virtue of repossession of the land for non-payment of taxes, and as landlord has leased the land to 'Ulupalakua Ranch;

'Ulupalakua Ranch, which has a long-term lease with the State of Hawaii to use the property for cattle ranching, and has developed the road infrastructure.

All of these groups contesting the same parcel of land (field interviews).

One result of these complicated land disputes is that Hawaiian rights to land in Kanaio focus on familial claims, as the Hawaiian population in Kanaio without exception has at least some claim, however complicated, to property. This puts them in a different situation from many Hawaiians elsewhere who have no direct claim to specific parcels of land, and who are involved in complex disputes with Hawaiian Homes, the State of Hawaii and Federal bureaucracies for access and title to land. Nearby Kahikinui is an excellent example of the tensions inherent in the Hawaiian Home system of land allocation, but it appears to have had relatively little impact in Kanaio, where individuals and families struggle with some of the same bureaucracies in their own attempt to reacquire lands they controlled in the past.

Kanaio as Spiritual Center

To the Hawaiian community in Lower Kanaio the image of Kanaio as Spiritual Center is tied to the much-overused concept of *'aina* as discussed by Kame'eleihiwa (1992) among others. It also appears to be part of a more complex phenomenon relating to cultural control and customary practices as has been examined in some detail by French geographers and archaeologists in New Caledonia (Doumenge 1982, 1975, Frimigacci 1977). Doumenge noted that rural areas that before were seen as backwards and unassimilated have now become seen by Kanak as the key areas for reestablishing "coutume"(kastom). The absence of significant numbers of outsiders has made rural areas the center of Kanak identity, political and cultural revitalization. The formerly unattractive rural areas are now seen as the areas with the fullest expression of true Melanesian cultural personality (Doumenge 1982:320). While rural areas in Hawaii have yet to imbued with the complex political power seen in New Caledonia, the view of rural areas has definitely shifted from "backwater" to what often seems to be seen as a "cultural preserve" (Howard 1990, Linnekin 1990).

Within the Lower Kanaio community the relationship to place can be seen as a personalized emotional bond to place, mediated by links of ancestors to Kanaio. Genealogy is central both in defining place in Lower Kanaio and for providing a foundation for bonds to place. Within this context Kanaio is not as much a physical location in the present as a series of places going back through time, a Hawaiian corollary to Bonnemaison's (1985a) metaphor of the Tree, which link the living with an identifiable past stream of related individuals. Within Kanaio individuals who are part of the *'aina* are in part protected by the past and provided a secure and safe place for the future. The place becomes an active agent in protecting from threat and supporting for success, rather than a passive stage upon which people posture. The place is inseparable from the people, for they are of the place and have shaped it, and thus the visible present is as much a image of past generations as of physical forms. This is the basis of older patterns of kin-based land control. As the place is imbued with family and vice-versa, it also illustrates why the concept of land as commodity was so foreign to *maka'āinana* during the Monarchy and led to their disenfranchisement during and after the Māhele.

Kanaio as Ritual Place

Relationships to place in Lower Kanaio frequently go deeper than merely ties to ancestors in the sense of human progenitors. In some cases the link is more to the concept of *akua* or family-linked guardian spirits. However, it is difficult to ascertain just how common this belief is in contemporary Lower Kanaio. It is considered to directly enquire about this belief pattern because it is considered private rather than public knowledge. Counter to this is that with increasing interest in Hawaiian spirituality, especially in Kanaio with the influence of the Upper Kanaio community and its New Age ties (appendix III), has made most individuals in Kanaio sensitive to this issue, as it involves at some levels proprietary rights to beliefs based on ethnic identity (Churchill 1992).

The traditional belief system does appear to be in daily use with some families, as links to ancestors and signs given by *akua* (or possibly *'aumakua*) were frequently mentioned in the context of everyday affairs. The general consensus is that they are a normal part of existence in Kanaio, and as such provide the active, protective agent discussed under the concept of *'aina*.

Kanaio as Frontier

To most residents, Kanaio is very much the Frontier image. To the Lower Kanaio community the Frontier image is one of self-determination in social patterns and interaction, a power they value highly. The police, the major enforcers of normative behavior, who are very visible in WaiLea-Kihei, Kula, and the other residential-tourism regions, generally avoid Kanaio unless on specific assignment. Situations which would elsewhere involve police are dealt with by residents in conjunction with ʻUlupalakua Ranch, which provides the major stabilizing influence on the area.

This freedom of behavior is a major attraction to people in all sections of Kanaio and is a major reason for residence. As a result it is also one aspect that most fear losing with increased population and easier access (with road improvements). While the area is perceived as isolated, in reality most families daily commute to other sections of Maui, and children are bussed daily to schools in Kula, so the isolation is more a reflection of bureaucratic disinterest as much as any real physical difficulties. This conceptual isolation allows families in Lower Kanaio to operate in a mode much closer to their own views (which frequently diverge from one another) of appropriate behavior. Despite some disagreements, the patterns of social interaction in Kanaio run smoothly within a traditional Hawaiian concept of community now rare in Hawaii except for a few other isolated rural areas such as Keanae (Linnekin 1985).

The Upper Kanaio Community

As discussed earlier the area defined as Upper Kanaio consists largely of individuals who are not only relatively recent (first generation) migrants but appear to share a set of common beliefs (map 4.1). This group has been drawn to Kanaio based on these spiritual aspects. While the sentiment is common to most residents in Kanaio, the context and form of this spirituality is significantly different in many ways from that expressed by the Lower Kanaio population.

The first wave of these immigrants was a small group brought to Kanaio by its isolation, with the intent of using Kanaio as a meditative and social retreat in 1974-75 (appendix III). Their choice reflected the Frontier image discussed earlier in that it valued the social isolation Kanaio offered. They settled in the upper section of Kanaio, away both from the lower community which was also beginning to return to Kanaio, and the main highway (map 4.1).

This desire for isolation also led them to disperse their residences into three general areas, determined by land accessibility and a desire for privacy.

While this group came to Kanaio from different regions of the United States and Canada, they shared a common social philosophy and interest in metaphysical self-exploration. They had no genealogical links to the land in a way comparable to the members of the Lower Kanaio community, but rather felt themselves drawn or brought to Kanaio by spiritual forces. The initial development of the Upper Kanaio community was expressed through meditation and alternative religious movements. This was typical of the migration of individuals and groups to locations throughout Hawai'i in the middle of the 1970s, when Maui in particular (along with the North Shore of O'ahu and Hanalei on Kaua'i) became a popular mecca for individuals seeking spiritual change and bringing meaning to their existence.

While this movement has faded away in many areas, in east Maui it is still extremely popular and has developed into a highly visible and potent political, economic, and social force. From the 1970s to the 1990s the alternative lifestyle movement went through a series of evolutions which at present manifests itself as various permutations of the New Age movement (appendix III). Most Upper Kanaio residents still see themselves as heavily involved in spiritual self-discovery, though it appears to be more selectively individualistic and less group based than in the middle of the 1970s. Despite this individuality there is still a network of interested residents who provide mutual assistance in work and social activities. An interesting spatial factor that was noted during interviews was that frequently the social ties of individuals in Upper Kanaio are closer outside the Kanaio community than within it. Privacy is valued over social interaction in Upper Kanaio, which reflects the individual nature of the common belief system, and provides one of the main distinctions between the Upper Kanaio and Lower Kanaio communities.

The New Age phenomena in Kanaio is complex and varied enough to worth its own dissertation, but a few key aspects of the belief system as related by informants that illustrate this diversity appear in appendix III.

The key to the New Age Movement is the individual and individual discovery. A major concept is of personal transformation from a past which was mundane or unrewarding to a new and exciting future. A term frequently applied is that of "healing", which is also reflected in the emphasis on holistic healing. The title "New Age" comes from the belief that in the near future (usually around the turn of this century) this transformational experience will either occur or be triggered within the context of the general human population, a fact frequently brought up in interviews with Upper Kanaio residents. This supports the strong

ecological bent of the movement, which sees the protection and preservation of the Earth Mother (or Gaia) until the general transformation occurs as a central value.

While the participants usually describe themselves as being on individual spiritual journeys, the New Age movement, with its value set and underlying philosophy, does fulfill the basic criteria of a religion. A unique aspect of the New Age movement is the willingness of members to appropriate rituals, beliefs and objects from other extant belief systems (appendix III). This appropriation of indigenous beliefs, ceremonies and ritual objects, while perceived by New Agers as supporting indigenous value systems, has been increasingly seen by many indigenous populations as just a new form of intellectual colonialism (Trask 1993, Churchill 1992), though the very limited interaction between Upper Kanaio and Lower Kanaio residents has minimalized the effects of this process. The isolation, and lack of knowledge about the operative belief system of the other community has resulted in a surprisingly lower level of tension over this issued.

A key element in the importance of Kanaio is based on a part of the transformational process, the concept of Universal Power. As Melton notes:

> The power to bring about the transformation of individuals comes from universal energy. Members of the New Age Movement assume the existence of a basic energy that is different from the more recognized forms of energy (heat, light, gravity, etc.) which supports and permeates all existence. This energy goes by many names: prana, mana...orgone energy...ch'i, mind, and the healing force. It is the force believed to cause psychic healing. It is the force released in various forms of meditation and body therapies that energizes individuals mentally and physically. It is the force passed between individuals in the expression of love. It is the underlying reality of the universe encountered in mystical states of consciousness. (Melton 1990:xvi)

This is specifically seen on Maui in that a widely held New Age belief that Haleakalā in general, and Kanaio in particular (along with Haleakalā Crater) is seen as one of the major "Power Spots" on the planet. As Melton notes, power spots are a central concept within the New Age Movement:

> ...there is a belief that certain points on the Earth are believed to possess an excess of available spiritual energy. As such spots, for example, the practice of spiritual disciplines such as meditation and yoga are facilitated by the very environment. As points of intensified energy, these "power spots" intensify whatever people bring to them and can become a place of (often unexpected) transformation...

> Locations designated as power spots can be placed in three categories. The first, of which Mount Shasta in northern California is an example, are spots of strikingly beautiful and impressive natural scenery. Maui...are other examples in this category. Second, many ancient worship sites have been designated as power spots...
>
> The third category of sites are places which people in the psychic-New Age community have designated as power spots (for any number of reasons), a designation upon which others have later agreed. Such a spot is Sedona, Arizona...
> ...as with other themes inherited from the older psychic-occult community, the New Age Movement has added its own particular perspective to the understanding of power spots. They are seen as places of personal transformation and pilgrimages to them are seen as a tool of transformation. This perspective has made tours to power spots...a popular activity for New Age groups. (Melton 1990:359-360)

Maui is advertised in New Age publications both as a tour and as a residential location, and groups of believers residing elsewhere on Maui visit Kanaio, especially the Buddhist Temple, on most weekends.

The New Age Movement, and New Age communities on Maui manifest the following values: strong concepts of individualism and freewill, somewhat selective environmental concerns and a strong desire for handmade or "traditionally produced" products. In marketable form the images have become attractive tourism and economic forces which play a very visible part of life on Maui, especially in Paia and Makawao. In the 1970s locations that became centers of the precursors of the New Age movement were usually isolated, and in economic decline, and thus amenable to the explorations in alternative lifestyles that more economically successful communities, such as Kahului and Kihei.

To date no research has been done on the evolution of New Age communities in Hawai'i, but on Maui many areas which had been declining in population and commercial traffic prior to the 1970s experienced a significant economic revival with the influx of these new immigrants. While in many cases stay was temporary, the commercial and social opportunities led to the revival of communities such as Makawao, Paia, and Lahaina which grew in the 1980s and 1990s in part due to this new population. A subtle but important part of the contemporary tourism image of Maui is linked to the strong social and economic impact of this population, as can be seen in the large number of "alternative life-style" stores, holistic healing practitioners and others catering to this group.

A statement common both to Lower and Upper Kanaio residents is that:

> Kanaio is a place that decides if you will stay. If you belong you can never really leave, and if you don't belong you will quickly be chased away (by the *mana* of the place). (field interview)

In the Lower Kanaio Hawaiian community this is couched in familial terms, combined with a pervasive belief that Kanaio is a place with a great deal of *mana*. To Lower Kanaio residents the place (Kanaio) is actually superorganic and actively dialogs with residents.

The Upper Kanaio haole community sees Kanaio in a subtlety different light -- Kanaio being a focal point of energy within the larger locus of Haleakalā.

> One individual interviewed noted that he has been in Kanaio for 3 years, and on Maui since 1982. Before he had ever traveled to Hawai'i he had very detailed dreams of Makena, Kanaio and 'Ulupalakua. The dreams brought him to Maui. When he first arrived he tried staying in Kanaio, but it was too powerful and demanded too many changes from him, so after a few days he moved down to Makena where things were less intense. But over the years he has become more acclimated and now feels totally comfortable in Kanaio where he has been for the last 3 years.
>
> He sees this whole section of east Maui, Honua'ula, as being the Center of the Earth Spirit. Maui is the mother, Kaho'olawe is the fetus, Haleakalä is the breast, and La Perouse the nipple. There is a line of power marked by the line of cinder cones leading up to Haleakalä crater--they are in a line from the spine of the fetus (Kaho'olawe) to the central Haleakalä crater.
>
> In his view, while Kanaio has power, this is because Kanaio is part of this line from Kaho'olawe to the central crater, so it also includes the 'Ulupalakua Ranch area. (Field interview 6/25/92)

Shared with Lower Kanaio residents is the attitude that Kanaio (the place) chooses the individual rather than the individual choosing Kanaio. While this concept of power and place is shared by Upper Kanaio residents, in other aspects the individualistic nature of the New Age philosophy comes into play and a variety of different logics and interests are manifested by Upper Kanaio residents, as illustrated in appendix III.

The ritual heart of the Upper Kanaio community is the Buddhist monastery *mauka* of the eastern eucalyptus grove in Kanaio at the 2500 foot elevation (map 4.1). This cluster of structures, located in a small swale overlooking much of Kanaio, is linked to a rock outcrop which overlooks the site from just upslope. The temple, which was started in 1981 and formally completed in 1992 (appendix III), has developed into a focal point not as much for

the Upper Kanaio community as for members of the New Age communities elsewhere on Maui, especially those in the Kula-Haiku region, who visit the grounds on a regular basis both as groups and individually.

Members of the Upper Kanaio community also view Kanaio as having links to external locations at more complex levels. The first is the Hopi-Hawaiian link, as manifested from the 1950s by Daddy Bray and later spiritual movements such as Hunaism and Foundation, both of which has undergone major growth in popularity since the 1970s (appendix III). The second, more diffuse link, is that relating Kanaio to the Bock Saga (appendix III).

Individuals in Kanaio do not see these diverse beliefs as being competitive, as every individual seems to pick and reinterpret beliefs in idiosyncratic fashion. The result is a community who on one hand share a common set of beliefs and values, and yet any two individuals will exhibit tremendous diversity, to the extent that generalizing normative patterns can provide a misleading image of shared values and beliefs. However, several common beliefs are present in Upper Kanaio:

Kanaio as a place of power, either specifically (i.e.,Kanaio as locus), or a point on Haleakalā;

An intellectual link to pre-contact Hawaiian beliefs, as interpreted by Daddy Bray-inspired movements such as Foundation and Hunaism;

Kanaio as a place of inward-looking, meditative or spiritual cleansing, a place to find oneself. It should be noted this is different (though not contradictory) to the first point as the power can only be given to those who are spiritually prepared to use it;

Kanaio needs human guardians for its environment, and those who have been chosen (i.e., the Upper Kanaio community) are responsible both to protect the place from destruction and nurture the land. Though expressed in the term *'aina* it is not synonymous with the concept as used by the Lower Kanaio community, as the familial-genealogical link to stewardship is absent or more abstracted.

The Upper Kanaio and Lower Kanaio communities do not agree on how *'aina* should be expressed, for the *haoles* in Upper Kanaio feel this defines itself as minimum impact (the environmentalist stance), leaving the land as undisturbed as possible. This does not closely correspond with practices within the Hawaiian community in Lower Kanaio. All residents share two beliefs, the first being that Kanaio is spiritually unique. They also agree that Kanaio's uniqueness should be preserved.

The Ranching Community and Kanaio-A'uahi

Of the all the images which pervade Kanaio and A'uahi, the most pervasive is that of cattle ranching. This is not surprising, as cattle have been a major part of the cash economy in Kanaio and A'uahi since the 1830s. In their success they were a major force in the destruction of the dry forest (Chapter 1), provided the major source of jobs since the late 1800s, and often provided the alternative residence when people left Kanaio (Youngblood 1986).

Many ranches in Hawaii traditionally (and still) provide residences for employees as one lure for otherwise physically demanding and low-paying jobs. By the late 1800s, cash alternatives in Kanaio almost nil and daily commuting by horse or foot was difficult to the nearest ranch-based community: 'Ulupalakua Ranch to the west, Kahikinui and Kaupo Ranch to the east. In this period it was more logical to move to ranch housing and give up permanent residence in Kanaio. The nearest ranch ('Ulupalakua) was 3 miles away, and most commercial goods came from the ranch store, which further encourage migration to the ranches. Given the changes in vegetation pattern and decreased water which occurred in the 19th century, the only viable economic option in Kanaio-A'uahi appeared to be in small scale ranching. However, pressures from the major ranches (especially 'Ulupalakua Ranch) to consolidate pasture and open range squeezed out small operations. 'Ulupalakua Ranch acquired the *ahupua'a* of A'uahi, along with leases to *mauka* Kanaio and much of *makai* (of the highway) Kanaio, which made small-scale ranching apparently unattractive, to the extent that by the 1950s only one independent ranching operation was functioning in Kanaio: the LLL Ranch, which is still in operation.

Ranching in Hawai'i has been a major factor in the development of the contemporary Hawaiian cultural landscape, especially in certain regions. East Maui is one of these, as large ranching operations (Kaupo Ranch, Haleakala Ranch, 'Ulupalakua Ranch) still dominate the landscape from Keōkea to Kaupō, and a number of smaller ones are scattered from Makawao to Kipahulu. While they have not always provided the dominant economic force to these areas, they controlled the majority of acreage, modified the landscape, and generated a set of values which still identify this section of Maui. Such events as the Makawao Rodeo have become major celebrations of this lifestyle, and communities such as Makawao and Pukalani now consciously market their *paniolo* (cowboy).

The glamorized image of the *paniolo* is the key ingredient: self-sufficiency, working off the land, close ties to the land and animals, along with a large measure of independence. This is the image of the Frontier, and as elsewhere in American society, it pervades attitudes

throughout Kanaio and neighboring areas (Vale and Vale 1989, Choy 1976, Reid 1972). In Kanaio-A'uahi one reflection of this image is the near-daily discharging of firearms (though people here are generally careful with them). Having guns and using them for hunting (goats), recreation (target shooting) and warning away trespassers (protection) is still the norm.

With the traditional Hawaiian ties to land in the Lower Kanaio community, it is easy to see why the Frontier image is so attractive. Many families run a few cattle, horses are common, and hunting is pervasive. Values and attitudes of independence and self-reliance are strongly held throughout Kanaio. The ranching lifestyle has become an integral part of the Kanaio self-image. Ironically, as in Wyoming, Colorado and elsewhere, with population increase, conflicts reminiscent of the nineteenth century western Cattle Wars are occurring, as this open lifestyle starts to compete with new residents who want quiet, to plant crops and see grazing animals as trouble (Duncan 1993). While not yet a reality, this lifestyle may be on the way out in residential Kanaio as the population grows.

As elsewhere in the United States where the Frontier image dominates (Duncan 1993, Vale and Vale 1989), in Kanaio-A'uahi the 'Ulupalakua and DePonte Ranches have an importance beyond their presence as commercial operations. The cattle, the *paniolos*, the cattle trucks, the herding and moving of the cattle--all the operations that make up a working ranch provide a series of icons of the Frontier, of the values held so strongly in Kanaio. The ranching operations are a visible and dynamic reminder to residents of one of the main aspects that makes Kanaio attractive, its distance from the rest of Maui. In this section of Maui, tourism is merely lost rental cars trying to get somewhere, while bureaucracies and complex commercial operations are somewhere else on the island. The ranches are visible proof of the independence which is so highly valued. While people complain about the control 'Ulupalakua Ranch has over the region, or how the LLL cattle seem to wander places they aren't supposed to be, the loss of these two ranches would be a visible statement that Kanaio-A'uahi was no longer isolated and on the Frontier, the very image which made the area so attractive in the first place. Ranching in Kanaio is as much seen as business, as it is theater--the playing out of images which validate a value system which is so attractive that people stay in an area that otherwise lacks many of the amenities taken for granted elsewhere in Hawai'i.

Ranches and Kanaio

The ranches occupy a interesting niche in Kanaio and A'uahi, and the two ranching operations; 'Ulupalakua Ranch, which is a major commercial venture and one of the largest ranches in the State (5th largest, with 5,000 head of cattle on 20,000 acres: Oliver 1993); and the DePonte's LLL Ranch (approximately 100 cattle and 101 acres), are vastly different operations both in scale and relations to the rest of the Kanaio community.

'Ulupalakua Ranch is a major social and economic force in East Maui. They have been involved in the development of tourism in Mākena-WaiLea (selling off land for development), they are a major money generator in their commercial operations, both in goods and salaries, and they control a large area to the west and east of 'Ulupalakua proper. Almost half the improved pasturage and water found in the *ahupua'a* of Kanaio and A'uahi are the result of 'Ulupalakua Ranch operations. The elementary school was in 'Ulupalakua, as was the store. The ranch was both the locus of activities and the major force dictating events for the entire region. While the power of the ranch has lessened somewhat over the years, anyone in the area will think long and hard before they will get on the wrong side of the ranch. They are still the major player in this portion of Maui.

'Ulupalakua Ranch, by virtue of purchase and leasing from the State, is the major landlord in Kanaio-A'uahi, and in fact the contemporary Kanaio community is really a cluster of family-held land surrounded by 'Ulupalakua Ranch-controlled land in every direction. Despite this power, the ranch goes to some effort to maintain cordial relationships with Kanaio residents, in part as ranch operations are extremely vulnerable to sabotage, from simple vandalism to more serious cattle rustling. One result of recent inmigration to Kanaio and conflict over land control has been the Ranch's move out of lower and central Kanaio in an attempt to distance themselves from tensions in the community. As the Ranch's improved (and much better) pasture is in Kanaio above 3200 feet and upper A'uahi, neither of which has surfaced as contested lands, they have been so far successful in avoiding conflict. In many ways 'Ulupalakua Ranch seems to have more in common with Kanaio residents than differences, as both parties share as the main adversaries the various bureaucracies, especially the County of Maui and the State of Hawaii. Both have agencies who desire to open up this section of Maui to residence and tourism. The Ranch, in common with most of the Kanaio community, is strongly opposed to this as it would be very detrimental to their operations and increase costs to the point that ranching would become prohibitively expensive.

The other ranching operation is the smaller DePonte LLL Ranch which works land in and immediately around the Kanaio community. The DePonte operation is unusual in that it is a commuter ranch, for the DePonte family live in Kula and commute out to Kanaio twice a

day to work the ranch, over 25 miles each way on narrow roads. This operation was started by the present owner's father, who began to buy up land in the 1950s from residents moving out to other areas and selling their shares in land (field interviews 1992).

The LLL Ranch operation is located in Kanaio with the main corral and work area at the intersection of the Highway and the upper Kanaio road (map 4.1). This means that the LLL Ranch is a visibly central part of daily activity in Kanaio, both by virtue of the location of the corral and also the use of pasture land scattered throughout Kanaio. One side effect has been that some residents in Lower Kanaio have purchased cattle, but often let them run loose, assuming that they will either find sufficient feed or that their cattle will just take advantage of the LLL feed troughs. As Mr. DePonte pointed out, when there were only a few residents with "spare" cattle it was not too big of a strain for him to provide the extra food, but with the steady increase both in residents (which cuts off former pasturage areas) and an ever-increasing number of cattle being let "loose" the result is that he is caring for upwards of 20-30 more cattle than he owns, for no profit or gain (field interviews 1992). This overstressing of the traditional system of *kokua* or balanced reciprocity is not limited to Kanaio, but since the community does not have any recognized system of social control the likely result will be that the LLL Ranch will refuse to support any other cattle than their own. This will trigger bad feelings both between residents towards individuals who were responsible for the spare cattle for pushing him too far, and also resentment towards the LLL Ranch for halting what has become for some an accepted practice.

The LLL operation is in the same quandary as the larger 'Ulupalakua Ranch--the operation is intended to be a profit-making enterprise, especially given that the owner must travel long distances daily just to maintain the operation. But on the other hand a disgruntled individual or family could easily sabotage operations, especially as much of the area is open range and the owner lives some distance away. As the population continues to increase in Kanaio, and the demands for residential space and room to run familial cattle encroach on existing pasture, it is likely that the LLL operation, like 'Ulupalakua Ranch, may be forced to look elsewhere to conduct operations. Ironically this would affect the families at present running cattle he cares for the most, as they would suddenly find themselves having to deal with all the ranching chores, such as shots, food, water, and veterinary care that the LLL operation now provides. Given the general lack of experience with cattle among other families, if the LLL Ranch leaves Kanaio, it may signal the end of cattle as a major form of cash or food in Kanaio for the first time in over 150 years.

A more subtle impact of ranching activities is in land stewardship. Ranching operations by definition depend on the land to provide sustenance for the livestock, and in modern Hawai'i this means on limited acreage. The ranches are among the most sensitive to changes

in land use patterns, especially those which directly modify the physical landscape that is presently supporting livestock.

The relationship of the ranches to the land is complex and has changed over time. Cattle and goats were the major destructive force on the traditional cultural landscape in Kanaio and A'uahi. They devastated the traditional forest and drove away the dryland agriculturalists by widespread crop devastation (Chapter 1). This resulted in a number of visible changes to the landscape, not the least of which was the destruction of many pre-contact structures, which were robbed of stone material to build cattle boundary walls which criss-cross both *ahupua'a*. These were intended both to keep cattle in, protect pasture, define property boundaries, and keep cattle away from the few remaining planting areas. The introduction of ranching to Kanaio and A'uahi led to pervasive changes to the landscape. However, since the 1880s, with outmigration, and only limited land use alternatives, ranching became a form of status quo with the modified landscape. The only major change was to improved pasturage, where land clearing was done to enhance the free movement of cattle, combined with the construction of water and feed stations. This produced the bucolic landscape which so dominates the upper elevations alongside the highway and *mauka* in this part of Maui. The seeding of pasture grasses in the area to improve the pasturage has resulted in a carpet of verdant green, on smoothly sloped cinder cones and up the side of Haleakalā. This landscape, which dominates from Keōkea to Lualailua Hills (at least above 3000 feet) has become the major visual image for this region (Kepler 1987, Youngblood 1983)(plates 1.1, 1.5, 1.6).

This improved pasturage is used as an example of the positive effect of ranching on the landscape, as it is seen as beautifying a dry wasteland. While this is not supported by either the archaeological or historical evidence (Chapter 3), it certainly is a striking contrast to view the verdant upper slopes and then the lower, dry unimproved areas of bare *a'ā*, with occasional *kīpuka* of *haole koa* and *wiliwili* (plates 1.6, 4.1).

Ranching activities have another component that is difficult to analyze. This is the relationship the ranching activities have with the huge numbers of goats in the area. Unlike the cattle, the goats are not owned in the sense of branded or herded. Instead, goat ownership is based on their presence within the ranch boundaries. At present it is impossible to accurately estimate the total number of goats in the area, but their impact in both Kanaio and A'uahi is devastating on the flora. I noted during field surveys that in a single day I would cross paths with up to three different goat herds, each with a minimum of thirty to fifty animals, within one small section of lower Kanaio. This works out to a minimum of approximately 400 to 600 goats in lower Kanaio, and roughly the same for lower A'uahi. Given that the lower elevations are more limited in vegetation and water, the numbers

should be significantly higher in upper Kanaio-A'uahi. This results in a minimum of 2500 goats within the two *ahupua'a*.

While this estimate seems overly inflated for such a limited environment, especially given the low numbers of cattle, the recent removal of the Perreira operations from Kahikinui support the accuracy of this estimate. As the Perreira operations left Kahikinui they collected not only their cattle, but rounded up all the goats they could catch, and were moving out hundreds at a time from Kahikinui, an area which is in some ways even more limited than Kanaio-A'uahi (personal comm.). This estimate becomes even more staggering when you realize that goats in this area, especially lower Kanaio, are constantly hunted by residents, outside hunters, and sophisticated helicopter-run operations conducted by 'Ulupalakua Ranch, so goat herds are being constantly culled. Nonetheless, as Kaho'olawe has shown, goats are the major force for the desolate landscape seen in sections not improved for pasturage, and they directly compete in the improved sections. But ranchers are ambivalent about the goats, as they require no maintenance or care, and yet they can provide considerable profit. In 1992 goats caught in this area could be sold in Wailuku for $180.00 a head, or shipped to O'ahu for sale, would net between $200-250.00 a head (personal comm.). Given the lack of upkeep, the ranches can make considerable profit off the goat herds. But there are two paradoxes to this profit:

How many extra head of cattle could be maintained if they did not have to compete with the goats?

How does this balance with the concept of land stewardship the ranches hold so strongly to as part of their value system?

The goats devastate the land, destroying much of what the ranches say they want to preserve. While they are not responsible for the goats presence, the ranches' economic interest in the goats puts them in an anomalous position towards goat eradication and control. With the development of the State's dryland forest reserve in Kanaio this is liable to become a much bigger issue in the future.

The Outsiders: The Bureaucracies and the Empty Quarter

Almost without exception, Kanaio residents express more concern about increasing outside interest in Kanaio than any other issue. It is this concern which has mobilized the community in reaction to the proposed geothermal powerline planned to run alongside the Highway, an event which to outsiders would seem a cause to celebrate. It would result in accessible power, better roads, a more developed infrastructure, and likely increase local job opportunities. However the community is opposed and afraid.

Kanaio-A'uahi is an area which has never been comfortable with bureaucracies, whether it be Kamehameha I's *ali'i* (Chapter 3), the State of Hawaii as absentee landlord, or Maui County pushing development and enforcing regulations such as building codes. The major reason people move to Kanaio-A'uahi is to "get away," which frequently translates to get away from a surfeit of controlling bureaucracies. The whole image of the Frontier is based on the lack of bureaucratic control. Yet the power of these bureaucracies to institute change regardless of local desires is tremendous, and events within the last thirty years just to the west in Kihei-Mākena, and also in Kula, provide evidence to fuel these fears.

Tourism in Southeast Maui

The key industry in late twentieth century Hawaii is tourism. Maui has become one of the islands most heavily affected by tourism and tourist development, both directly in resort tourist destinations but also more subtlety in the images of Maui which have been generated by tourism. Southeast Maui, especially the section from Kihei to WaiLea, has become a major area of development (map 1.1).

Mākena-WaiLea is west of Kanaio and until the early 1970s was the end of the road from the small resort community of Kihei. As Kihei began to develop as a tourist destination, especially with time-share condominium developments, interest in expanding the tourism base to more hotels, golf courses and better access to the beaches in Mākena led to County rezoning to the area (Farrell 1982). Despite vocal opposition from the Mākena community, many of whom were living Mākena because, like Kanaio, it was isolated (Farrell 1982), the developments began. Farrell's study of development of the Kihei-Mākena coast in the early 1980s (Farrell 1982) is a classic example of the results of poor planning and lack of interest in local concerns. The only interest of County and State agencies was in the increased tourism revenues and short-term gains that could be realized from developing this section of Maui. Farrell made a series of recommendations based on the failures in the planning process at

Kihei-Mākena. These included: detailed planning based on controlled growth; more community-based planning; and less tourism-based development (Hamilton 1994, Kubota 1993, Tanji 1993a). One reason these changes were necessary was due to the unplanned-for large scale inmigration to the area by individuals from the mainland United States, in search of the jobs generated by the growth in the tourist sector of the economy with these developments.

Instead of the controlled growth Farrell had hoped would result, with his recommendations ignored the situation in Mākena-WaiLea has gone completely out of control. In 1993, exclusive 2 bedroom, 2 bath condominium units at the Wailea Point were selling from $749,000 to $1,555,000, and similar units at the Makena Surf for $1,150,000. These prices were in some cases lower than prices in 1990 when the investment market was stronger, and when units at Wailea Point sold at $2,300,000 (2 bedroom, 3 bath) and Polo Beach Club 2 bedroom, 2 bath condominium units went for $1,200,000 to $1,650,000. The costs are so high as to almost have an air of unreality about them till one examines the general sales statistics for Maui (see table 4.1).

Hotels in this area have recently opened at tremendous cost (the Hyatt Wailea at a reported cost of 740 million dollars) (field interview 1992) just to find that the tourism market had slumped, and so they faced bankruptcy or receivership without ever becoming fully operational. Even with increased tourist numbers in 1993 the hotels were nowhere near capacity (Tanji 1993b, 1992).

As can be seen in table 4.1 the costs of land are incredibly high and the taxes alone are more than many low-income families can afford to pay. This drives out long-time residents, who find even if they own land outright they can not afford to keep it. But if they sell (even at considerable profit), they find everywhere else on Maui is equally expensive and equally as foreign.

Many Kanaio residents fear that Kihei-Mākena pattern of resort hotels and time-share condominiums is Kanaio's future. But the bigger danger from development is likely to be in the pattern of estate development seen in Kula. Development in Kula was the result of intentional design changes in County zoning regulations. Demand for upscale private neighborhoods in the upcountry (Kula) side of Haleakalā, and the promise of increased tax revenues for State and County governments, led to zoning changes which allow agricultural zoning to be retained if lots are at least 3 acres in size and some form of agricultural production is pursued.

TABLE 4.1

REAL ESTATE VALUES FOR MAUI AS OF 7/31/94
(Maui Board of Realtors: 1994)

Single-Family [Home] Median Prices by Area for Month ending 7/31/94 [selected areas]

Location	Current Month	Last Month	Year-ago Month
WaiLea-Mākena	0	$685,000	475,000
Pukalani	252,000	290,000	232,000
Maui Meadows	520,000	480,000	513,000
Kula/Ulupalakua/Kanaio	480,000	355,000	0
Kihei	259,000	295,000	252,000

Land Median Prices by Area for Quarter Ending 9/30/94 [selected areas]

Location	Current Qtr.	Last Qtr.	Year-ago Qtr.
WaiLea-Mākena	310,000	224,000	275,000
Pukalani	0	182,000	143,000
Maui Meadows	210,000	384,000	0
Kula/Ulupalakua/Kanaio	227,000	237,000	189,000
Kihei	340,000	125,000	0

Land Year-to-date Resale 1/1/94-7/31/94 to 1/1/93-7/31/93 [selected areas]

Location	Current yr.	Year ago	Aver. price This Year	Aver. price Last Year
Hāna	5	2	159,000	221,000
Kihei	3	2	189,000	1,350,000
Kula/Ulupalakua/Kanaio	13	2	381,000	207,000
Pukalani	4	7	153,000	288,000
WaiLea/Mākena	4	3	278,000	308,000
All(summary)	89	61	304,000	310,000
For Condominiums [selected areas]				
Kihei	110	101	155,000	162,000
WaiLea/Mākena	43	35	433,000	576,000

This allows developers to avoid zoning changes, which involve public hearings and input. It also puts residents of such developments in a much lower tax bracket as their lot is zoned for agricultural use rather than residential or commercial. The cost of real estate in Kula, along with the moratorium on increased water usage for the area, means that even illegal crops would show a loss rather than profit (Tanji 1991). However, the intent was to develop gentrified "country estates," which has been very successful, with a number of expensive estate projects in place or planned in Kula, including such projects as Kula 200, Kula Estates and numerous individual developments. An example of a typical home:

> Kula Custom 4 Bedroom 3 Bath home...gourmet kitchen, 3 lavarock fireplaces, master suite with jacuzzi, 3 car garage. Covered and lighted riding area: 12 horse stalls, 6+ acres. $1,950,000. (Maui Board of Realtors:1990)

Though downslope in the Maui Meadows sub-division (in Mākena-WaiLea), this description provides the best illustration of the clientele desired in such developments:

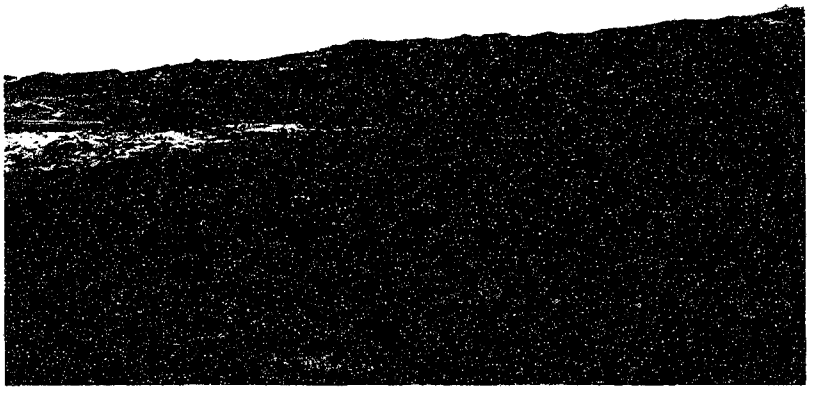
> Maui Meadows elevated 1/2 acre with outstanding, panoramic view. 5 Bedroom, 4 Bath Home, nearly new and separate 2 Bedroom Guest Cottage. Adjacent to other quality homes. Live Above and Beyond. FS $1,250,000 (Maui Board of Realtors:1990)

From table 4.1 it is obvious that such projects are very expensive and highly exclusive: in 1993, lots in Kula 200 sell for $395,000 for 2.17 acres; a home in Kula 200 (7 bedroom, 7 bath, 2 acres) for $890,000; other land nearby goes for $293,000 to $525,000 for two to three acres (Maui Board of Realtors 1990). Many of the homes constructed fall into the million dollar category.

Many of these projects have architectural codes- not for safety restrictions but for esthetic reasons to ensure that new residents will build in a style suitable to the upscale nature of the community. They are frequently set up as closed communities, often with gated access and private security. This offers a marked contrast to the older, rural agricultural-small ranch lifestyle typical of old Kula, many of which have been forced to sell and move elsewhere, given the tremendous increase in taxes and declining relative profitability of commercial operations. The impact of this form of development has spread throughout east Maui, with homes in Keōkea (for a 4 bedroom, 2 1/2 bath home, 3.4 acres) selling for $795,000, and more ominously, 236 acres of pasture land in Kipahulu (between Kaupō and Hāna) going for $3,400,000 (Maui Board of Realtors: 1990).

General terrain patterns. Note open country.
Central Kanaio at site 121 (New Age Site) looking towards A'uahi.

4.1 The Specific. A collapsed lava tube with dense banana. This *kīpuka* is located in the upper left of the upper photo.



Contested lands between the Uwekoolani's and the State.
East Kanaio from the highway looking to the west.

4.2 Contested land. Access point to the land in east Kanaio looking *mauka*.

At the time these zoning regulations were modified, the argument was that these changes would encourage small-scale agricultural enterprises. The result has been the opposite--the traditional population is being forced out by a variation on the part-time resident vacation home concept. In some ways these developments become visible parodies of former land use patterns in Kula, as the zoning requires that some rural business operation must be attempted, but it does not have to be successful nor actively pursued. In many estates it is common to see a small section of very sophisticated landscaping set aside for a small grove of macadamia nut trees, or pasturage with several expensive horses. Given the price of the land, house and landscaping, the profits off the "commercial operation" would be hard-pressed to even pay the cost of retaining a commercial landscaping firm to maintain the yard. In fact for tax purposes a "failing" business can be very useful, which further discourages serious small business development.

This pattern of land development is a very real threat to Kanaio-A'uahi. The main highway is being improved and widened, resulting in an ever-increasing flood of tourists who take the road around to Hāna. As access becomes easier the area is becoming more familiar to people interested in new development opportunities. As the zoning regulations allow this type of development in areas otherwise protected from commercial development, for to develop this type of project the developer is not seeking a change in use or zoning, o public hearings are not required. Such developments are expanding into Kipahulu to the east, and Keōkea to the west. Kanaio and A'uahi, which are only marginal to alternative commercial activities such as ranching, could become extremely valuable pieces of real estate. The area is already being test marketed--an area isolated from the hubbub of normal tourist locations, yet still convenient to urban centers. Recently a three acre lot near Waiakapuhi on the coast, inaccessible to wheeled vehicles (though it is on the Pi'ilani trail system), has been placed on the market carrying a $3,000,000 price tag(personal comm.). Access will be by helicopter. This is an ominous portent that the development patterns which plague Kihei-Mākena, Kula, and now Hāna (Hamilton 1994) are beginning to directly affect Kanaio.

Tourist imagery and Kanaio-A'uahi

The images that people use when discussing tourism-based development in East Maui are based on the developments which now blanket the coast of Maui from Kihei to Mākena. Residents in Kanaio frequently mention the Kihei-Mākena area when expressing their fears, especially in the forms that tourist development might take in Kanaio-A'uahi. Not only have the changes down in Kihei-Mākena all been in just the last 20 years, but the scale and lack of control or direction over the development shocks most residents.

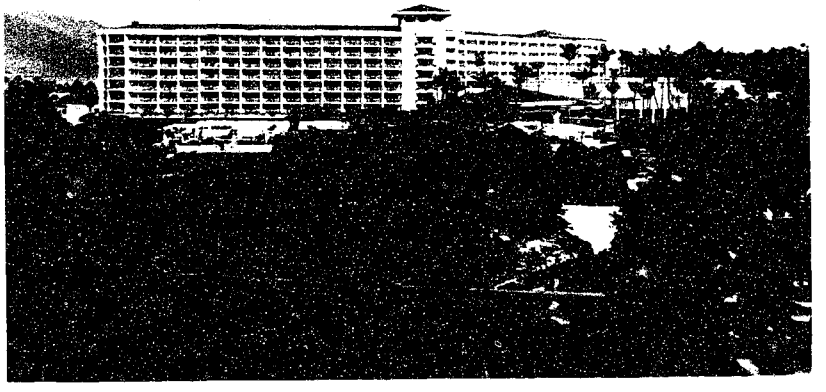
Kanaio residents have been especially sensitive to these changes, not only because of their close proximity to Mākena, but because many Lower Kanaio families have relatives who used to live in Mākena. These kinship links and their first-hand view of the economic and social life for Maui residents by the Kihei-Mākena development has been an education and a warning for most Kanaio residents.

The tourist industry, in promoting Kihei-Mākena, has developed a set of stereotypic images of the "Hawaiian Paradise" to make attractive a section of the coast that prior to tourist development, had been considered to be of limited beauty and value (by other than its residents).

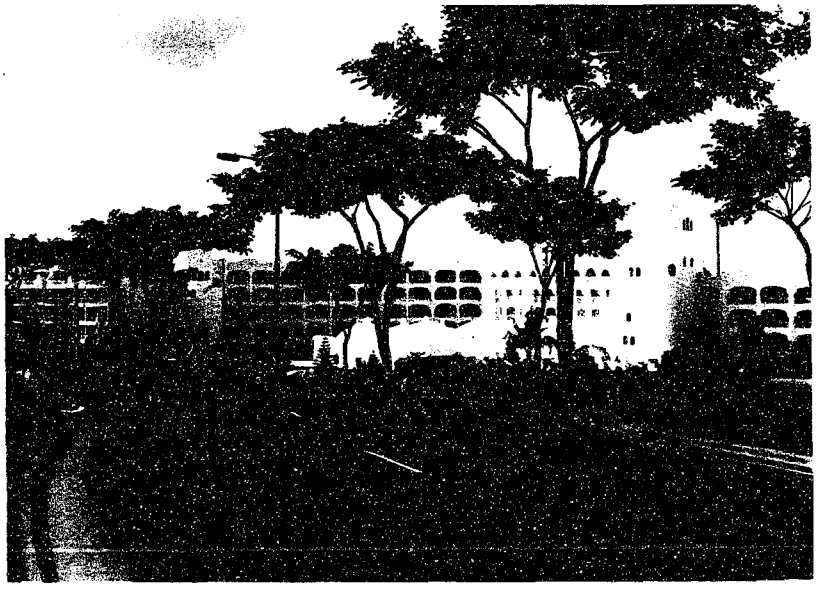
For this reason the images used to portray Kihei-Mākena and encourage tourists to visit are of interest as they reflect the attitudes and values both of the tourist industry towards appropriate resort settings, and also the perceptions of tourists towards undeveloped areas such as Kanaio-A'uahi.

Tourism literature is designed to support a set of preexisting images of an idealized place, to develop enticing views of a paradise that the tourist must see and experience. Frequently the writing collapses to the level of purple prose, but it is nonetheless effective. An excellent example is seen below, left largely intact to illustrate how the sequence of images is structured to entice the visitor to Maui. This imagery reflects views held both by the private sector and the Hawaii Visitor's Bureau (a branch of the State Department of Business, Economic Development and Tourism) of what tourists want and are interested in.

> [Discussing the Mākena-WaiLea area] There is a spirit about this part of Maui that inspires what some call illusion, and what others call a gift. It is here that the road trails off into wilderness and Maui reverts to its wild and free self, where the hills are tawny, thorny and unyielding, and the black lava coast surrenders begrudgingly to the jubilant cobalt sea [Kaloi-Kanaio, plate 4.5].
>
> It is in complete contrast to the portion of the land tended by people and designated as a resort. The Wailea and Makena resorts are an incongruous emerald green, manicured to perfection, bursting at the borders in bright flowers, contoured into three golf courses with two more on the way, and studded with a few select hotels and vacation villages [plate 4.4].
>
> Wailea claims 1,500 acres of prime real estate cradled between the massive slopes of Mount Haleakala and an ocean shimmering in the shades of a peacock's feather. A mile-and-a-half of shoreline is notched into five perfect crescent beaches, fringed in palms and splashed by gentle surf...



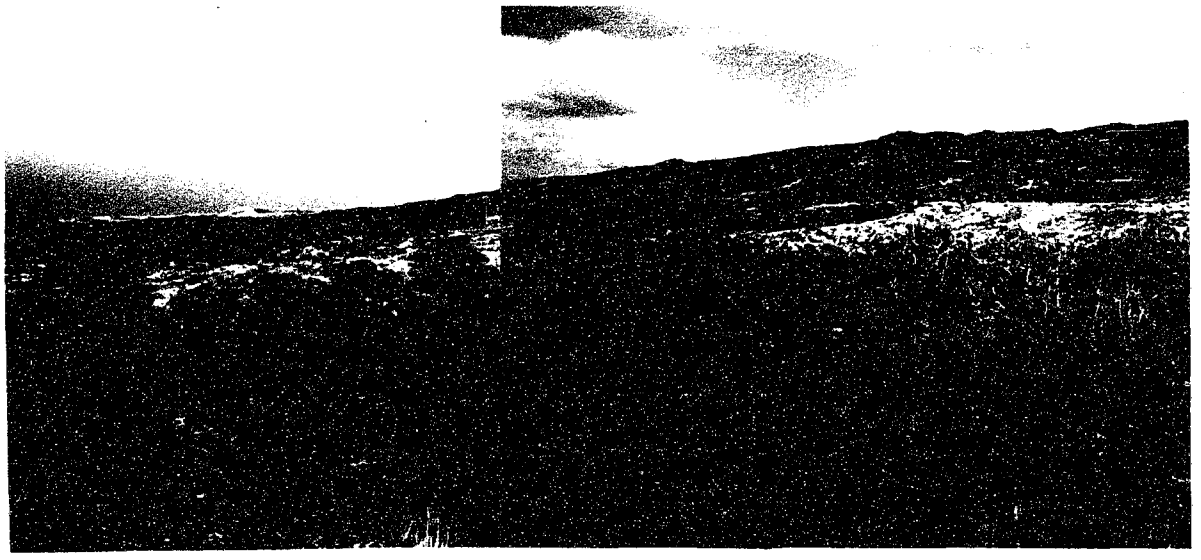
The Grand Hyatt Wailea.



4.3 The Images of Tourism: the Kea Lani at Wailea.
Note the pseudo-Moorish architectural cues.

Tropical landscaping at Wailea. Note the use of exotic palm species and moving water to create an oasis effect.

4.4 Tourist Images of southeast Maui: A golfcourse at Wailea.



Central A'uahi towards Kanaio on the main highway.

4.5 Contrasts of Tourism and Kanaio: An enclosure (site 628) above Pu'u Pimo'e at 1600 foot elevation.

The Grand Hyatt Wailea Resort and Spa changed the tempo, kicking in to the tune of $600 million. With 787 rooms, $30 million of original art, a display of 10,000 flowers in the lobby, a European-style spa, a state-of-the-tot children's camp, a beachfront wedding chapel and a $15 million swimming pool complex, the hotel was bound to make a splash [plate 4.3, figure 4.2].

Swimmers may ride Hyatt's very own white-water river with spills, thrills and an illusion of risk--but the rocks are rubber and the current carefully controlled. At the end of the unusual pool is a water elevator, conceptually along the lines of the locks of the Panama Canal, to lift bathers to the top of the pool again...

The newest hotel on the Wailea scene is Kea Lani, which means white heaven. The architecture is distinctive, with turrets, domes, arches. Everything is dazzling white. Even the guest rooms are white upon white upon white. The only real color comes from the bright blue sea, the banks of bougainvillaea spilling from balconies, and the magnificent collection of hibiscus, flowers as big as dinner plates in hot pink, neon orange, fire engine red.

From the road, Kea Lani looks totally out of place. It should be in Morocco, not Maui, but once you are within its portals, the hotel seduces completely [plate 4.3]. It is opulent without being overwhelming, the white is cool, the arches channel breezes. Every room is a suite with a large lanai. The main pool area is a fantasy with a slide, bridges and a swim-up bar. A quieter adults-only pool is huge and studded with tiles that glitter like blue diamonds.

Beyond the glamour of its grand hotels, Wailea is a completely planned resort community, with single-family residences, vacation condominiums, historic Hawaiian sites, quiet beaches, a shopping complex and a full schedule of activity options.

The resort's two championship golf courses...are almost legendary in golf circles. A third course...is scheduled to open in 1994.

Tennis, too, is a headliner sport at Wailea. In fact, the resort has been called "Wimbleton West." In the 14-court tennis complex, there are three championship grass courts and a tournament stadium that seats 1,000 cheering spectators...

With five beautiful beaches, the ocean action is almost endless... The waters are clear, perfect for snorkeling, and the reef areas abound in colorful tropical fish...

Sharing this sunny, dry end of Maui is the resort of Makena. Space and freedom are almost sacramental at Makena...

The Maui Prince is an oasis of civilization poised at the very edge of the Maui wilderness...

The landscaped grounds primarily reflect the bounty of the tropics. However, one quiet pocket is a complete contrast to the Hawaiian exuberance. A formal Japanese garden with sand, stone and carefully chosen plants invites meditation.

In the evening, music emanates from the open atrium of the hotel, drifting upward to all the floors. It might be Mozart. It might be "Amazing Grace," an aria or Broadway medley, but it adds a grace note to the scene, as the sun sinks, coloring the sky cerise.

Makena, too, offers great golf. The 18-hole championship course... Another 18 holes...will be completed this year...

Makena's beach is a quarter-mile smile of gleaming sand freshened by breezes and fringed in palms.

Put the two neighboring resorts together, Wailea and Makena, and what you get is a fabulous Fun Coast that is often called Hawai'i's Golf Coast.

The two resorts share the grandeur of this end of Maui, the space, the freedom and beauty...

Makena Stables takes riders exploring the slopes of Haleakala, through the volcanic meadows of historic 'Ulupalakua Ranch to Hawai'i's only commercial winery, Tedeschi Vineyards...

Rose Ranch is now 'Ulupalakua Ranch and has retreated upland, leaving the shore free for fun seekers.

Just past the resort area, where the road gets rugged and nothing is tamed... (Ariyoshi 1993:47-49)[plates 4.2, 4.5]

A survey conducted by a tourist industry publication also validates how central these images and symbols are to the tourist experience:

60% of the tourists surveyed were on their first visit to Maui;

The most common activities were attending luau, snorkel cruises, land tours or water recreation;

64% visited at least one art gallery;

98% said that they will return to Maui, and possibly even more significantly 28% said they were planning to move to Maui;

The top five positive points they had for Maui were the beautiful scenery, the climate, the ocean, the friendliness of the residents and the snorkeling opportunities;

The top five complaints were the scale of commercialization/development, the high prices, the traffic, the difficulties of renting a car and the road conditions. (Anon 1991:27)

Heaven may, in fact, be more stunning than the new Grand Hyatt Wailea, but it's only hearsay.

We are proud to announce the opening of the Grand Hyatt Wailea. Few resorts anywhere have dedicated as much to your entertainment and relaxation.

From the moment you enter, passing cascading waterfalls set in ancient cliffs formed by Haleakala herself, you're immersed in Hawaiian history and tradition. You're awash in tens of thousands of rare and exotic flowers and pampered like guests from a by-gone era.

Mosaics and frescos, around almost every turn, relate Hawaii's history, as do the bronze statues that seem, literally, to be everywhere. All are original. All have a story. And all, using the famed Wailea coastline as a backdrop, are designed to make a lasting impression.

But more than a gallery, the Grand Hyatt Wailea is a feast for the senses. You'll marvel at the crystal reflecting and swimming pools. And be drawn inexorably to an inner-connected series of rapids, waterslide, in-pool bar, and the world's only water-powered elevator.

Afterwards, you'll dine in one of our exquisite restaurants. And retire to a room so elegant, you may forget your excitement at doing it all again tomorrow.

Kama'aina, call now for a special rate through December 19, 1991. Few destinations are capable of impressing a resident of paradise, don't miss this one. To make reservations, call 1-875-1234.

HYATT

FIGURE 4.2

Advertising Image of Hawai'i as Paradise

R.B. 9/94

The images noted above provide a basis for contrast to those perceived by non-residents when viewing Kanaio-A'uahi. In the tourist literature East Maui has two diametrically opposed images: one of Hāna, Kipahulu and related features, the classical image of wet, tropical, Polynesian Hawaii; the second, the cosmopolitan, sophisticated Mākena-WaiLea image seen above. These two images dominate the tourist industry view of east Maui. In over 30 picture books, tourist brochures and travel guides about Maui, not a single picture of Kanaio-A'uahi was noted. While 'Ulupalakua Ranch has become a minor tourist location both by virtue of its picturesque surroundings and the presence of the Tedeschi Winery, it is frequently described as "the end of the road" till one reaches Kaupō (or more accurately Kipahulu). The area between is

> ...many miles of "washboard dirt," passing through free-ranging cattle country, is desert-like (in places reminiscent of southeast Arizona) and virtually uninhabited. Traffic is sparse, there are no emergency telephones, no water, and the nearest mechanic is in Kula, many lonely miles distant. If your axle breaks or you run out of gasoline, it may well be the next morning before you can hope for help. (Kepler 1987:73)

The image of the Frontier again appears, but in the tourist context it is as an area to avoid and fear. The highway's elevation and substantial distance from the coast as it passes through Kanaio-A'uahi, combined with the recent *a'ā* flows and unusual and sparse vegetation (largely *wiliwili* groves) does not fit either of the images developed by the media for East Maui (plate 4.5). The result is that Kanaio-A'uahi is an area of risk sandwiched between the lush tropical images of Hāna and the oasis image of WaiLea (plates 4.3, 4.4).

Yet in many ways Kanaio-A'uahi contains the physical attributes that have made other successful tourist destinations in Hawai'i. It has the same attractions of scenic view, good climate, constant winds, and a high number of sunny days. Beaches are nonexistent, but then beaches are largely absent on the Big Island's Kona "Gold Coast" and that has not slowed development. As pessimistic as Farrell's (1982) predictions appeared at the time in the early 1980s, he would be shocked at how optimistic his predictions turned out to be versus the reality of the middle 1990s.

A key aspect of tourism icons in the Mākena-WaiLea developments is the lack of any contextual relationship with either the past or contemporary cultural landscapes of the region. This can be seen most clearly in the earlier quote describing the "flagship developments" for WaiLea and Mākena. Of interest is the oasis image, which of course requires a wild, untamed and hostile landscape beyond the hotel (Kalo'i-Kanaio), with the hotel the sanctuary of comfort and culture. The ride to Hāna thus becomes an adventurous

expedition rather than a simple sight-seeing trip. But the oasis image also acts as a means of segregation between the residents in places like Kanaio and the tourist--no positive values or images are presented for Kanaio-A'uahi:

> ...road trails off into wilderness and Maui reverts to its wild and free self, where the hills are tawny, thorny and unyielding, and the black lava coast surrenders begrudgingly to a jubilant cobalt sea." (Ariyoshi 1993:47)

This shifts residents in Kanaio from the level of the Frontier (a positive and romantic image) to that of marginal inhabitants of the Empty Quarter, the wasteland one transits to more attractive locations. This devalues both the place and the people. Ironically this may be the single major factor which can preserve Kanaio-A'uahi from immediate development. The image of the Empty Quarter makes Kanaio-A'uahi unattractive to developers, especially the more pervasive, small, upscale estate forms found in Kula, which have capitalized on the Frontier image as a major selling point. While land costs are lower in Kanaio, the lack of developed infrastructure and perception of a harsh, unattractive environment will make resort homes a hard sell.

The State of Hawaii and the Empty Quarter

The dialog between State agencies and Kanaio residents has not been a happy one. Several issues have resulted in friction, the first being that of legal claims to land, which is also tied to appropriate taxation. The second is the State view of its obligation as steward to the public interests, representing the People of Hawaii in contrast to the needs and interests of Kanaio residents. The third is the State's desire to increase revenues and increase job opportunities, especially in the area of tourism, which has been formally espoused as the only viable area for economic development in Hawai'i (Tanji 1993b, Huetz de Lemps 1989, Farrell 1982). The last area of contention is the State's responsibility to provide infrastructure needs, both in terms of energy (the Geothermal Project), road, and water development, all of which are strongly supported by the tourist and development interests and opposed by a majority of Kanaio residents.

It is worth noting that in Hawai'i State bureaucracies are highly centralized and almost exclusively housed in Honolulu. Almost all State business is conducted in Honolulu, and effectively all decisions are made in Honolulu. No evidence was found to indicate that any major State decision-maker, on any issue impacting Kanaio, have ever traveled to the area. The situation is very much one of "remote control," a sore point historically with all the other

islands. There is a very strong attitude of being outside the decision-making process, and it is not by accident that on O'ahu, the other islands are called the "Neighbor" islands or the "Outer" islands. In terms of power and decision-making the second title is certainly accurate. To State decision-makers and planners in Honolulu, Kanaio-A'uahi is part of the Empty Quarter, a place without a visible constituency. It is symptomatic that one of the largest contiguous Hawaiian Homes parcels in the State is found bordering these *ahupua'a* in Kahikinui (22,000 acres), as Hawaiian Homes land is traditionally in areas of limited economic interest.

The Uwekoolanis and the Homestead Issue

The State (and to a lesser extent County) bureaucracies take their stewardship of the land in this area lightly as long as it is not threatened, which is only to be expected within the image of the Empty Quarter, as the land proper is seen as having little if any real value. The State is the largest landowner in Kanaio, though as has been mentioned earlier title to some of this land is contested with past and present residents. However, a recent challenge to the State's control over the land came when a member of the Uwekoolani family, returning to Kanaio from years living on the mainland , decided to move onto land within the eastern section of the Kanaio Homesteads (map 1.2, plate 4.2) in a parcel formerly owned by relatives. Without awaiting resolution of the legal challenges, he proceeded to move "back" on the land, which the State insisted had been repossessed for non-payment of taxes many years earlier. As in most Homestead parcels the ownership issue is clouded by confusion and poor records. In the State's view the land was leased to 'Ulupalakua Ranch as part of their general lease of most open land in Kanaio. However, the Ranch refused to get embroiled in the dispute.

As part of the open lease, this section of east Kanaio was not fenced, largely because there were so few cattle in the area, as this Homestead parcel is located on top of the 1760 flow, and consists of very rough *a'ā* lava with a few small *kīpuka* with good soil. Despite the lack of cattle, a number of goats and some pigs roam at will through the property. As the Uwekoolanis moved on to the property, they bulldozed an access road and started to fence in areas for pasture (plate 4.2). A small garden was started, and intensive hunting of the goats and pigs began. Alarmed by the permanent nature of the settlement, the State moved to protect its primary landowner status, and took the family to court. This had been anticipated by the Uwekoolanis, who assumed that the issue would be resolved on legal claims to the land. However, the State took another tack, and instead declared a section of the

Homesteads to be a Natural Area Reserve to preserve endangered dry forest species. This reserve just happened to include the parcel claimed by the Uwekoolani family.

At one level the State's move was legitimate, as Kanaio-A'uahi does contain the largest extent remnant dry forest in the state, though this is actually in A'uahi, while the Reserve is in Kanaio (Chapter 1). However upon closer examination, the State's argument appears specious for two reasons. The first is the lack of any protection or concern displayed by the State Department of Land and Natural Resources prior to the Uwekoolani resettlement attempt. The area was given over to pasture lease, and the Department apparently had no problem in the past with the widespread devastation by grazing animals, especially the goats, which roamed uncontrolled throughout the area. This despite repeated warnings by botanists at both Federal and County levels about the need to preserve the area.

The second flaw in the State's argument is the timing between the development of environmental concern and the Uwekoolanis interest in using the parcel. In many ways the movement of the Uwekoolanis into the eastern Homesteads, their fencing and hunting of goat and pig, was the first action taken by anyone in the last 100 years to protect the endangered plants, though it was not altogether altruistic.

The decision to make the area into the Kanaio Nature Area Reserve provides yet another example both of the concept of the Empty Quarter and the distance between decision-makers and involved parties (Murphy 1993). Notable is the inclusion of a section of land which was not of interest to professional botanists (in particular the same ones who had lobbied unsuccessfully in the past for protection of this area), based on input from the Nature Conservancy rather than any viable data. According to the "Process for Designation of Natural Area Reserves" provided by Department of Land and Natural Resources, Forestry Division:

> There are currently 19 Natural Area Reserves protecting approximately 110,000 acres of Hawaii's most valuable natural heritage. The first, Ahihi-Kinau on Maui was designated in 1973; the latest, Kanaio, also on the island of Maui, was designated in 1991. (Forestry Division:1)

The procedure reflects the distance between the agency and Kanaio residents. There is a Natural Area Reserves Commission which acts as an advisory group to the Board of Land and Natural Resources, which makes the final determination. This is then sent on to the Governor, who signs the reserve into existence with an Executive Order. The process begins with nominations made to the Natural Area Reserves Commission at public meetings. Then:

3. Staff refine the nomination and prepare it for public hearing on the island where it is located. This may include an on-site visit to the proposed site.

4. A public hearing is held on the particular island, preceded by legal notification of newspapers and circulation of the nomination to interested parties.(Forestry Division: 3)

There is no evidence that an on-site visit was conducted during this process for the Kanaio nomination. A key factor is that since the areas are considered to be on State property, there is no formal need to notify contesting parties, merely interested ones. Other than contesting the recommendation at the level of the Board of Land and Natural Resources, which would require substantial effort and preparation, this is the only public input required. While fulfilling the letter of the law, it allows interested parties (such as Nature Conservancy) to pursue agendas given their expertise in the political system which may not be readily available to other parties such as the Uwekoolani family. Unfortunately, once the Reserve's boundaries have been signed into Executive Order, despite their suspect nature, they can only be changed by:

8. Any changes to a Reserve, such as re-designation or modification of established boundaries also requires a public hearing process before any significant action is taken. (Forestry Division: 3)

This would obviously require expert botanical witnesses, lawyers, and money, not to mention constant trips to Honolulu. When one examines the criteria for inclusion described below, the inclusion of the contested parcel becomes even more suspicious:

Scientific Value: Each Natural Area shall have significant potential for scientific study, for teaching, for preservation of distinctive biota or other natural features, or for preserving natural genetic material. The description of a proposed areas shall include details of the scientific attributes of the area.

Administrative: Each Natural Area shall be identifiable on maps and on the ground. It should be reasonably protectable from pests and from physical damage and, legally, from encroachment. Access to the area should be in conformance with the nature and purpose of the area...

Size of Areas: Each Natural Area shall be large enough, but no larger than necessary, to accomplish the particular purpose of establishing that Natural Area. A desired size is that which will provide essentially unmodified conditions in the interior portion. The cost and feasibility of protecting the area will have a bearing on the size.

Some areas may be less than an acre while others may exceed 10,000 acres, where a special need is demonstrated. (Forestry Division: 2)

The contested parcel does not appear to fulfill the criteria above, but the struggle to remove it from the Kanaio Natural Area Reserve would be cost prohibitive, as this still would not resolve the issue of the ownership of the parcel. The sudden invocation of environmental issues in this case appears to be a rather neat legal move to side-step the still unresolved issue of real land ownership, as any major long-term concern about the protection of an endangered habitat. This can be seen in the State's subsequent efforts to protect the area, which so far has been limited to several signs warning along the Highway warning against trespassing in the Kanaio Natural Area Reserve. As of mid-1993 no fences have been put up, nor has any eradication effort against the once-again uncontrolled predation by goats been mounted, despite the inclusion of the area as a reserve in 1991. The situation is back to the former status quo, and the Empty Quarter has temporarily returned to silence.

The Implications of the Geothermal Powerline

It would appear to be somewhat of a puzzle as to why a State agency would react so strongly to a relatively minor squabble about a parcel in the Empty Quarter over which they apparently had little interest. But this story becomes more complicated, as a second agency was also interested in the same sections of Kanaio-A'uahi. The interest revolved around State plans to develop geothermal power plants on the Big Island and Maui, despite widespread vocal (and occasionally violent) opposition. The initial geothermal development was in the Puna section of the Big Island. The first phase of the project was intended for Big Island consumption, but it was planned to expand this into a system designed to carry generated power from the Big Island over to O'ahu, where the power demand is the greatest (with 90% of the population, the majority power consumption, and of course all the State bureaucracies).

The geothermal system under discussion was first proposed in detail in the late 1970's. After initial studies showed the feasibility of the concept the then-titled Department of Planning and Economic Development,(now called the Department of Business, Economic Development and Tourism) began to move towards development and completion of the project. From the first formal summary (Decision Hawaii 1988) the goals of the project remained remarkably consistent. A series of geothermal power generation stations in Puna on Hawai'i would generate a total of 500 MW (megawatts) of power which would then be carried underwater and overland, island-hopping to Kaneohe, O'ahu, where they would be

incorporated into the O'ahu power grid to add to Hawaiian Electric's existing power sources. The 1988 study estimated the cost of the total project at $1.7 billion (1986 dollars). The transmission system would consist of three underwater cables and two (actually four) overland cables carried on poles. Construction was originally planned to begin in the late 1980's, with the first plant delivering power to O'ahu by 1995 and the final plant on-line and the system generating 500MW by 2006. It was estimated that the system would generate 4.38 million kilowatt hours annually or the equivalent of 7.025 million barrels of fuel oil for Hawaiian Electric on O'ahu (all O'ahu power generation facilities are oil-burning), resulting in a savings of $346 million annually for the Hawaiian Electric Company, much of which would be returned to consumers in lower rates and lower dependence on foreign oil sources. The overland transmission lines portion of the project would cost 11% of the total cost for a total of $184.9 million (1986 dollars) (Decision Analysts Hawaii 1988).

The final summary concluded that the project was economically feasible. The impact on Maui was not considered to be of major significance. As the 1988 assessment notes:

> In order to simplify the analysis, Maui is excluded from consideration; however, in practice, the inclusion of Maui would either have no effect on the economic feasibility of the geothermal transmission system, or would enhance it. (Decision Analysts Hawaii 1988:ES-2)

While there has been widespread opposition to the project, it has focused almost entirely on the power-generating plants, as noted by Frierson (1991:217-218):

> ...The developer was asking for zoning to permit enough wells to generate up to 250 megawatts of electricity. Current electrical needs for the Big Island are less than half of that amount. Campbell Estate [the developer and landowner], it seemed, was banking on...the Deep-Water Cable.
>
> Since the early 1980's, the state had been supporting the idea of a deep-water cable to carry geothermally generated electricity from the Big Island to Maui and O'ahu... The cable...would carry 500 megawatts of "Pele Power," as the proponents were calling it, through the longest and deepest-laid underwater power conduit in the world in order to meet O'ahu's soaring energy needs. Even though costs would be extremely high--and probably would be passed on to the public through taxes and rates--O'ahu's power monopoly, Hawaiian Electric, was arguing that the cable was a healthy move toward energy self-sufficiency for the state.

Cable opponents pointed out that not only would Hawai'i County...be bearing the environmental impact of a project that would benefit another island... They argued that both the rift zone where the wells would be located and the ocean floor the cable crossed presented high geologic risk both from eruptions and earth movement.

State officials on O'ahu supporting the cable project seemed singularly blind to the geologic risks... In 1988 Senator Daniel Inouye suggested in an interview that the "destiny" of the Big Island should be to become the "energy source" for O'ahu and Maui. One recognizes in this statement...the common urban Western attitude toward land as expendable resource.

During the initial planning stages there were multiple options on placement of the section of the overland lines that would transit Maui (a total of 7 were evaluated). Meetings were held with the various county agencies that would have interests or concerns about the project. Maui County's reaction was not particularly favorable to the project, which is not surprising since Maui stood little to gain from the project:

> Concerns were expressed relative to interference with fishing, particularly on Penguin Bank, trenching, land point selection, land requirements for shoreside facilities, visual impacts of overhead lines and social opposition to geothermal development. (Krasnick and Chapman 1984b:55)

From the available documentation it appears that this was the last indication of solicited input from Maui County agencies into the project, though none of the reports contains actual documents from Maui County authorities. By 1987 the environmental studies were becoming much more detailed and it is apparent that the powerline placement had apparently been decided upon, though the procedures by which this decision was made are not documented. The final design calls for the line come ashore at Huakini Bay (Nu'u) and parallel the Pi'ilani Highway until it reaches 'Ulupalakua where it would drop *makai* to 'Āhihi Bay (Mākena), where it would go back underwater over to Kāne'ohe, O'ahu (map 1.1). In the 1987-1988 environmental assessments elevation had not been finalized, and the maps show the line being in a zone from approximately 200'-1800' elevation from Lualailua Hills through to 'Ulupalakua.

The rationale for the overland component to the project was made clear in a 1986 report:

> An overland route on Maui would save money in cable costs and avoid a very hazardous marine segment. The lines traversing from Huakini Bay to Ahihi Bay on

Maui's west side would be inland rather than along the coast. The area is rural in character and is entirely within the Agricultural Land Use District. (Krasnick 1986:9)

This section of the powerline would have been approximately 20 miles (32 km) long. Despite some initial delays due to the development of new technology in the geothermal power plants (the Puna Geothermal Project), and the construction of a submarine power cable capable of surviving the great depths, especially in the 'Alenuihāhā channel, by 1989 the project was proceeding close to the projected timetable. However, a number of legal challenges, along with growing public opposition, began to force delays in the other phases of the project.

Despite mounting opposition from different parties the Federal Department of Energy (who were co-sponsors of the project) assumed that the State was continuing with the project. Legal challenges forced the Federal agency to fund initial archaeological and cultural resource surveys, which were begun along the east Maui portions of the proposed powerline in 1993 (Erkelens 1993, personal comm. 1994).

However, in 1989 the State (1994 personal comm.) changed its stance on at least the long-distance transmission line portion of the project to the following:

Geothermal Energy Policy Statement [Governor of Hawaii]

The State of Hawaii currently supports geothermal energy as a potential energy sources exclusively for the island of Hawaii. As such, the State supports the efforts of Puna Geothermal Ventures and True/Mid-Pacific Geothermal Venture to explore, develop and generate geothermal electricity in a safe and environmentally acceptable manner limited for use to the Big Island.

The State of Hawaii is not taking any action to support a large-scale geothermal and undersea cable transmission project to export electrical energy to the other islands, and is not aware of any present efforts, public or private, to undertake such a project.

The federal government has been mandated by the federal court to prepare an Environmental Impact Statement (EIS) for a conceptual "Hawaii Geothermal Project (HGP)" consisting of a large-scale (i.e., 500 megawatts) development of geothermal power on the Island of Hawaii for transmission to Oahu and one or more of the other islands in the State.

While the State will continue to provide information and cooperate with the federal government in the preparation of the EIS, the State's position is that there is no such project under consideration at the present time. (Department of Business, Economic Development and Tourism 12/92 letter)

Though the Department of Business, Economic Development and Tourism contact stated that the State had withdrawn in 1989, there appears to have been a breakdown in communications at several levels. The Department of Energy, pursuant to a Federal Court decision, was proceeding with the Environmental Impact Statement sections until May 17, 1994, at which time in the Federal Register it stated that:

> The Department of Energy (DOE) today withdraws its Notice of Intent to prepare an Environmental Impact Statement for Phases 3 and 4 of the Hawaii Geothermal Project as defined by the State of Hawaii in its April 1989 proposal to Congress. (Federal Register v.59 #94:25629)

Apparently at the same time Department of Business, Economic Development and Tourism and the Governor had decided to drop the transmission line phase of the project they were also pushing the project through Congress for Federal monies and support. The final project summary appeared in the Federal Register:

> The Hawaii Geothermal Project consisted of four phases: Phase 1-- exploration and testing of the geothermal resource beneath the slopes of the active Kilauea volcano on the Big Island; Phase 2-- demonstration of deep-water power cable technology in the 'Alenuihaha Channel between the Big Island and Maui; Phase 3-- verification and characterization of the geothermal resource on the Big Island; and Phase 4-- construction and operation of commercial geothermal power production facilities on the Big Island with overland and submarine transmission of electricity from the Big Island to Oahu and other islands. Phase 1 was completed in approximately 1986 and Phase 2 was completed in 1991.
>
> On February 14, 1992, the Department of Energy published a Notice of Intent to prepare an Environmental Impact Statement for Phases 3 and 4 of the Hawaii Geothermal Project. Public scoping meetings were held from March 7 through March 16, 1992, and an Implementation Plan was issued in April 1993.
>
> On December 8, 1992, the Governor of the State of Hawaii approved a geothermal policy statement issued by the Hawaii Department of Business and Economic Development and Tourism indicating that Hawaii is no longer pursuing or planning to pursue the geothermal/cable project that it had proposed in 1989. Thus, DOE considers the project to be terminated. (Federal Register v. 59 #94:25629)

The timing of the State withdrawal from the project at the same time that serious legal challenges demanding a formal, full-scale Environmental Impact Statement makes for thought-provoking discussion, but little substance at present can be gleaned from the available documents. Another example of the failure in communication was that there was never any formal attempt made to inform County agencies or interested parties of this change in position other than the Governor's Policy Statement, as Maui County agencies, advisors to the Office of Hawaiian Affairs, and all Kanaio residents were still under the impression the project was on schedule for completion in 1993 (field interviews). This lack of communication reflects both the "Outer Island" mentality frequently exhibited by State agencies and also the Empty Quarter image.

Of major interest to this study is the series of Impact Assessments generated in 1987, as these provide excellent examples of the bureaucratic logic employed in dealing with the Empty Quarter. In 1987 a visual impact analysis of the overland powerline was generated, which evaluated the possible impact of various configurations of towers and lines along the proposed route (DHM Planners 1987). They noted that in Hawaii there was no experience with lines to this size, as the largest current line in Hawaii was a 138 kv line on O'ahu, whereas the lines for the geothermal project would be 300kv (500 mw) lines. The methodology used to examine the visual impact of the transmission system was apparently taken from assessment procedures used by the Bureau of Land Management though no discussion was offered to justify the procedure. The methodology consisted of cataloging locations in terms of "pattern elements" (DHM Planners 1987:14) of form, line, color and texture. These were combined with pattern characters of dominance, scale, diversity and continuity for different landscapes along the route. The poles would be ninety feet high, with four lines, and a continuous right-of-way corridor would run underneath the transmission lines with an access road for construction, maintenance and repairs.

The consultants initially defined the differing visual qualities of the landscapes along the route and classified them into general landscape types. The consultants decided that most of Maui was the Hillside/Grassland landscape type:

> This is the dominant landscape type in the Maui corridor options due to the steep slope of Haleakala where the predominant landcover is a mixture of lava, scrub vegetation and grasses. This setting creates a variety in textures and colors in the backdrop which is very capable of visually absorbing a transmission line and Right-Of-Way. (DHM Planners 1987:40)

While the Kanaio-A'uahi section of the transmission line to the Hillside/Grassland landscape type, their own catalog picture uses Kanaio as the type-example for the Flatland-Ridge/Grassland landscape type. Given their own categories, the vast majority of the 20 mile overland segment would run through landforms similar to that portrayed in their picture for the Flatland type. Their assessment of the impact of the powerline on this landscape was not nearly as positive:

> ...Transmission structures in this zone will often be in silhouette against the sky or a distant background form with no visible texture. Therefore, towers in this setting will have higher than average visibility because of their contrast with the generally lighter tone of the sky...
> There would be little opportunity to hide transmission structures with natural screening... Overall, the potential for contrast...would be high. (DHM Planners 1987:35)

It should be noted that throughout their discussion of visual impacts they were assuming that the lines would not be near the existing Pi'ilani Highway but some distance away where the lines could be hidden in natural topographic features from general view.

The consultants were also concerned about the impact the transmission line would have on visibility from major roads. Their analysis of the Pi'ilani Highway on Maui was general in nature, as was the rest of the analysis, as they made no attempt to subdivide the physical or cultural landscapes in the 20-mile stretch. They felt that the primary use type was a combination of residents and visitors, that the number of users was low-to-medium, and that the average traffic speed was low-to-medium. There was no final formal statement on the overall impact of the line on road users other than that attempts should be made to hide the line behind physical features from road view as much as possible.

A second document prepared was generated by Parsons Hawaii, but dealing with general environmental concerns (Krasnick and Mansur 1987). This report is much more indicative of the Empty Quarter image in its analysis of the importance and place of Kanaio-A'uahi (and in fact all of southeast Maui). The report analyzed environmental impacts in several discrete categories, but most disturbing is the extremely generalized nature of many of the assumptions. The authors noted that Maui would be evaluated as:

> Where an indeterminate area would be affected, such as with socioeconomic impacts, entire islands or the State are generally considered in the discussion. (Krasnick and Mansur 1987:66)

Thus social impacts of the project were not evaluated within the context of directly affected communities as Kaupō, Kanaio or WaiLea, but the southeast Maui, the area impacted, was subsumed into the entire island. Specific categorical assessments of the impacts on Maui are also fascinating in that they reflect a very similar attitude to that noted earlier in the tourism literature. For agriculture,

> The Maui corridor passes through neither prime nor unique agricultural lands, but includes small areas of other agricultural lands. (Krasnick and Mansur 1987:82)

For recreation, the only portion of the impacted area noted as a recreational opportunity area is the 'Āhihi-Kinau Marine Area Reserve. The rest of this section of Maui is seen as

> ...an opportunity area that has been identified or recommended, but is not necessarily recognized or favorably endorsed by the implementing agency...
>
> Similar to the adjacent beaches listed as potential resources, the coastline is without amenities except for the road. Nevertheless, the coastline is a popular recreational area as is, though visited by few numbers of people on a frequent (i.e., daily or weekly) basis. (Krasnick and Mansur 1987:85)

In both cases the frequency of use becomes the key factor in evaluating the resource. Their summary concludes that this area is very rural in character, with very low population density, and the nearest urban center is WaiLea. There is no mention of either the Kanaio or the 'Ulupalakua communities throughout the entire document. Most interesting, especially in light of the struggle between the State (Department of Land and Natural Resources) and members of the Uwekoolani family is the botanical assessment in this document. They first describe this section of Maui as "non-forest" land (Krasnick and Mansur 1987:83). This is followed by a more detailed discussion:

> Southern Maui has a variety of native plants growing along its coastal shore, but low elevations generally consist of dry land that has been used for grazing and has been disturbed from its natural state. In the higher elevations are a few special areas that have more vegetation, such as the Auwahi forest at the 4000 feet elevation. In the deeper and larger gulches, such as the Manuwainui Gulch and the Pahihi Gulch, are the only pockets of vegetation found along the study corridor. No rare or endangered plant species have been recorded in the Maui study area (DLNR, 1987). (Krasnick and Mansur 1987:97-98)

Yet within 5 years a branch of this study, which cited the Department of Land and Natural Resources as a source, the same agency would find that rare endangered dryland plants of sufficient significance existed to declare the Kanaio Natural Area Reserve. The lower boundary of the Reserve is only 100 feet *mauka* of the proposed powerline easement. Between 1987 and 1991 the position of Forestry Division and the Department of Land and Natural Resources on the significance of the botanical complex in Kanaio apparently changed drastically, though no formal study of the *ahupua'a* as a whole has ever been undertaken outside of Resnick (1977) to define the botanical complex, nor has any study ever been done in A'uahi to determine its botanical inventory, despite the fact that it is constantly cited by both Rock (1913) and Lamb (1981) as the final repository for a number of unique dryland forest species.

The State's professed disinterest in pursuing the Geothermal project makes the quick reaction to the Uwekoolani land issue (the transmission line would pass within 200 feet) interesting, especially given the same agency's lack of concern about the impacts of transmission system construction at the same location just five years earlier. While the contested parcel is just *mauka* of the Highway, another Uwekoolani claim to land, is to the parcel just *makai* of the Highway. If they regained control of this *makai* parcel it would be one of the few spots along the Maui section of the powerline where the State would be crossing over land it did not control, as the rest of the alignment is State owned property leased out to various ranches.

The cost to the State of losing the Uwekoolani claim, especially as at the same time the State was hoping to generate an adverse impact statement for the project, and thus avoid both an Environmental Impact Statement and public hearings (private comm. 1994), would have resulted in increased costs, time delays, and unwanted public exposure.

Currently it is unclear how much the Geothermal Powerline project was tied to other interests the State has occasionally mentioned for the region. The Geothermal project included a 50 megawatt diversion to Maui, which was intended to provide for present and future energy demands on this section of Maui. Despite the lack of any documentation, in the planning reports there are occasional references to the development of similar geothermal plants directly in Kanaio (Krasnick and Chapman 1984). So the interest in geothermal power is not limited to long-distance cables.

All of this has ominous repercussions when one considers the State's formal position on future development for the island, which is to be tourism-based. That the same agency responsible for the Geothermal Powerline project is also in charge of tourism development does nothing to ease local fears. Though no plans have appeared, much of the Kanaio community is convinced the State has plans to develop this section of Maui into another

Kona Gold Coast region. As discussed earlier it contains all the necessary physical attributes: isolation from the more mundane areas; superb tourist weather; long lines-of-sight including other islands, sky and water; and most important, land controlled by the State which could be leased out at considerable gain to the State coffers. A minor advantage is the very small resident population, which may suggest to some planners that opposition to such development would be muted at best.

A belief common in Kanaio is that geothermal development (whether powerline or on-site) would be only the first phase of tourism development. The powerline would require a substantial upgrading of the existing roadway, making access much easier, especially once the new Kihei-Kula Highway is constructed. Power would be readily available, and water development, given the close proximity to major water sources in Kipahulu-Hāna, would be much less costly than continued expansion in either Kula or Kihei-Mākena. Given the lack of interest the State has shown towards Kanaio residents, concerns that such an agenda exists appear legitimate. It is a simple equation between the demands of the many (and powerful) versus the wants of the few (and invisible). In the evaluation of the various documents generated by the Geothermal Project there seems little doubt as to what the eventual outcome will be for those residing in the Empty Quarter.

Competing Images in the Near Future for Kanaio-A'uahi

As elsewhere in Hawai'i, Kanaio-A'uahi is in the midst of all encompassing change. The struggle between elements of change and those of the past will only become more intense as the space available to avoid these conflicts disappears. Thirty years ago resort development was limited to two areas--Lahaina-Kaanapali (a nine mile stretch) and Kihei (a three mile stretch), while residential and commercial development was concentrated in Wailuku-Kahului. Today an unbroken resort strip extends from Kapalua down to Waianukole on west Maui (for twenty-one miles) and from Ma'alaea to Mākena (for twelve miles). There are now 11 golf courses on Maui, almost all located in these two resort strips (Oliver 1993).

In a twenty-five year period, the number of visitors to Maui has risen from 221,411 in 1966 (Farrell 1982) to 2,300,000 in 1990 (Halas 1991). Rooms at the newest hotels in WaiLea (the Grand Hyatt Wailea and Kea Lani) go for $250 to $7500 a night (1993 rates). In 1991, the resident population of Maui was 97,200 and the daily tourist count 39,500, which meant that on any given day 28.9% of the island population consisted of short-stay

tourists (Halas 1991).

At this point it is appropriate to discuss some of the predictions and recommendations made by Farrell in his 1982 examination of tourism on Maui. He noted that by 1982 there were large-scale differences in the ethnic mix of the resort areas and major jumps in population (tripling in 10 years) (Farrell 1982). He saw a major pattern developing in housing:

> Developers cater mainly to middle incomes, the rich, and the very rich. During the past few years even buyers in the middle income range have been eliminated by high condominium prices. During the buoyant conditions of fast growth development served, unfortunately, many local, modest income speculators. Because in general, in the most desirable parts of Hawaii, developers provide accommodation well out of the reach of the bulk of the population, great social distance may be created between resident occupiers who are most frequently in-migrants and local people or their families who, as the result of development, are often forced to live elsewhere in areas of lower land values or lower rents. (Farrell 1982:82)

A large proportion of the Lower Kanaio community (and many of the Upper Kanaio community as well) fit this prediction.

Farrell also noted the potential for major catastrophic growth in the WaiLea-Mākena area:

> In 1976 there were 3,500 persons in the Ma'alaea-Kihei-Wailea region. It had 2,800 condominium units, 800 or more of which lay vacant or unsold. Nevertheless (one might be permitted to gasp), zoning still allowed for over 30,000 units--thirteen times the 1976 inventory. On a conservative basis of 1.8 persons per unit, a 50 percent occupancy rate, and the State Tourism Plan formula for employment, the future tourism-related population of the area could be 60,000. (Farrell 1982:159)
>
> ...the Maalaea-Makena resort region, the largest in the state with almost 5,000 units completed and 37,000 units officially the present ceiling. Outside Waikiki no other region comes close to it. (Farrell 1982:286)

The ratio of tourists to residents was 20:1 in 1982, and the most recent figures from the State of Hawai'i show that the ratio has grown to 25:1 by 1992 (Department of Business, Economic Development and Tourism 1994 figures). The highest ratio at which tourism does not generate major stress is 2:1. But as Farrell (1982:225) notes, this is merely indicative of

an area of greater concern:

> Analytical discussion masks the tensions that exist between the groups which are simplistically called "the haves" and the "have nots." This implication of exclusively economic reasons for disharmony between two groups is patently not true. There is a great gap between the affluent and the poor. The tensions also exist between haoles and non-haoles, between immigrants and oldtimers, among ethnic groups, and among "locals," in-migrants, and the military. Tourism not only provides irritants but also emphasizes and brings into sharp relief a host of social and economic ills initially unrelated to it but attributed to it by many. The situation now is so bad that perceptive long-time observers see conditions as volatile and dangerous.

Given the Kula-style developments, which postdate Farrell's research, the conditions have become worse. A number of areas that were refuges for lower and middle-income level residents, especially part-Hawaiians, have been swallowed up in the complex development growth cycle.

A major change not visible in the early 1980's was the shift from condominium developments to more expansive (and expensive) single-family dwellings. It could be argued that while a condominium has a large number of wealthy occupants, the units proper do not take up much space and the development as a whole is restricted spatially and visually. On the other hand developments such as Kula 200 take up large tracts of land, and have enormous mansions scattered over the landscape in styles approaching and sometimes surpassing the ostentatious wealth of former plantation owners. Such symbols of inequity only bring Farrell's concerns closer to reality. As he noted back in 1982:

> Rich mainlanders appear to flaunt their affluence in the face of less fortunate residents. This situation has a basis in fact. Tourist industry employees are not well paid and comparisons are made between their income level and the incomes of the affluent who visit Hawaii... In 1977 the median family income of visitors to Hawaii was around $22,000, that of Hawaii residents one-fifth lower, while that of Hawaii visitor industry employees 12 per cent less still. The income disparity then between visitors and industry employees taken along with the high cost of living, high land values, and the necessity for several persons in the same family to have jobs is enough to provide a predisposition toward discontent. The perceived income disparity alone is not the problem. What is a problem is the disparity exacerbated by the marked differences between two societies. (Farrell 1982:235)

As bad as conditions were in the early 1980s recent trends provide a greater potential for conflict. New migrants purchasing a $700,000 piece of land and placing a $2,500,000 home on it, and living here as part-time residents, are a much greater source of stress and threat than a part-time condominium owner in a isolated resort setting, if only due to their greater visibility.

In addition the dependency on such a fickle industry comes at great risk, especially when the economic stability requires continued growth (Halas 1991). As Farrell noted this was fraught with dangers:

> Scale is overwhelmingly important. Within a Hawaiian community, whether or not tourism enhances or is subversive largely depends on the scale of activity. Most persons and communities can tolerate tourism on a modest scale. Once the scale exceeds a limit, which will vary with the type of tourism, the ratio of tourists to local people, and the extent to which tourists financially support the community, tolerance becomes another matter...
> With large-scale tourism or constant exposure to tourists, hospitality may easily wear thin, especially where tourists exist only as faces in a crowd or symbolic sources of income. The predisposition for amicability, nevertheless, remains, but the question is for how long? It is a valuable asset in need of nurturing... Like all relationships it needs working on and the application of respectful reciprocity. (Farrell 1982:232-33)

Farrell's recommendations were simple and could have easily been implemented: restrictions on future growth; all planning be community-based; and that social impacts become a major factor in all planning decisions. He also pointed out that the economic sector needed to diversify to reduce the overdependence on tourism. Except for limited community involvement in planning at the County level (Tanji 1993a, 1993b, for the positive, Hamilton 1994 for the negative), none of Farrell's recommendations have been implemented. Kihei-Mäkena has grown, development has spread to most rural areas such as Hāna, and social impacts have yet to be addressed as major planning issues.

Failure to heed his advice means that for the present and short-term future tourism will continue to be the only major economic option for Maui. However, as Farrell predicted, the strain both on residents and the general infrastructure has reached the breaking point in many areas. As one resident noted:

> If the present trends continue, the increase in the number of tourists becomes stunning. The most recent Hawaii Visitor 's Bureau analysis estimated that:...HVB

projects approximately 80,000 new hotels, rooms and condos are planned for construction over the next several years. This increase in accommodations would require about 13 million visitors annually by the year 2000 to maintain an (average) occupancy level of 81 percent. (Halas 1991:12)

We have to analyze the costs (of growth) not just in terms of the additional physical infrastructure that will be required, but the cost of the social infrastructure as well. There are many hidden effects: higher crime, strain on our roads, schools, parks, demands for government services, police and fire protection. The physical part is only the most obvious component that comes with the surge in population. (Halas 1991:36)

More striking than the increase in the tourist count is the increase in the number of residents, up from 38,691 in 1971(Armstrong 1983) to 97,200 in 1990. As was noted by Halas(1991):

Maui...is already the fastest growing county in the state. It has grown four times faster than the national average in the last ten years. (Halas 1991:36)

All of these statistics signal profound changes for Maui. One effect is that with the increasing affluence of new residents, combined with the huge amounts invested in resort developments and commensurate tax increases, there has been an erosion of areas economically accessible to long-term residents of lower income brackets. Kanaio has become one of the few remaining areas that Farrell saw as refuges from the uncontrolled cost of living. This has become a major impetus for migration to Kanaio--the desire to still own property and at the same time be part of a lifestyle unavailable in Lahaina or Kula now, that existed everywhere on Maui only twenty years ago. This squeezing out of the local population is occurring on the other islands also, but Maui's case is possibly more dramatic given the tremendous increase in number of residents and the direct impact of tourist development.

Given the State's position that for the near future, tourism is the only viable economic option in Hawai'i, these trends will continue. While sensitivity about the social impacts of tourism are increasing (Buck 1993, Trask 1993), the lack of interest by State planners and administrators in pursuing alternative paths to economic stability, or even to heed the warnings and recommendations of specialists such as Farrell, will leave these as academic exercises rather than planning guidelines. At present the most positive view of Maui's future is:

> As the Island's four new luxury resorts come to fruition, Maui County must resolve the question of future development. There is already a wealth of accommodations for any traveler's needs and wants, and these four are the last hotels to be approved before the Maui County Council's Interim Restrictions on development were effected April 1st of this year.
>
> But this is, at best, a temporary measure. With the completion of the General Plan and individual Community Plans, Maui will hopefully provide for controlled growth, and include avenues for developers to give back to the communities, through improved roads, schools, parks and housing.
>
> We are indeed fortunate to live here, and as hosts, we are often called upon to share our good fortune. It may not always be convenient, but in the long run it will be interesting to meet those who have come to enjoy the view. (Whitney 1991:61)

Even in a relatively positive view of the future, pressures of new residents, tourism, and jobs will increase the difficulties for Kanaio residents. Three issues appear to be central to the competition between images for control of the cultural landscape in Kanaio-A'uahi.

Tourism and the Frontier: It is likely that the next few years will witness increased tourism in Kanaio-A'uahi, especially in the form of recreational opportunities. Given present conditions at Kanaio-A'uahi the only direct tourism-related activity would appear to be in the use of the dry forest remnants as ecotourism, or increase in ritual use of the Buddhist temple. If ecotourism is economically feasible, it is possible that the Kanaio Natural Area Reserve and surrounding area could become a site for educational tours.

An expansion of current tourist activity is in traffic traveling through Kanaio-A'uahi. At present a considerable number of bicyclists use the main highway for bicycle tours, a rapidly growing phenomenon. As the highway has been improved the number of tourists driving to Hāna. If the proposed Kihei-Kula highway is constructed this will result in significant increases in traffic along this route, along with more casual sightseeing.

This could provide some economic opportunities for residents. One resident noted that another had already considered opening a wayside food and drink concession with bathrooms in Kanaio along the Highway as such places (especially the bathrooms) are in short supply on the long drive from Hāna to Kula. If the tourist traffic increases this may become a viable venture. The short-term effect of the traffic increases is the increased difficulty and time required to travel from Kanaio, into Kula for work, school or shopping.

Energy and the Empty Quarter: At present the Geothermal Powerline project appears to be a dead issue. However, if fuel oil prices rise, or energy demands on Maui outstrip the ability of the utility to provide sufficient electricity, the plans for a Maui facility will likely be resurrected. If such a project becomes feasible, then the image of the Empty Quarter will return, as Kanaio is the most likely location for such a facility.

Kahikinui and Hawaiian Homes: Though Hawaiian Homes land is in nearby Kahikinui rather than in Kanaio-A'uahi, the increased use of this 15,000 acre area will have a direct impact. The present mood by interested parties for use of the Kahikinui property as reported at meetings revolves around development of the property for homestead or residential use (Eager 1992a). At present there are only a few residents in the entire *moku* of Kahikinui, so this would result in a major increase in population. As infrastructure demands are met, it is likely that available land in neighboring *ahupua'a* (such as Kanaio-A'uahi) will also increase in value to provide additional residences or services to this population. This increase in land costs and increased interference by State and County agencies will result in many of the same impacts Kanaio-A'uahi that tourist development will generate collapse of the Frontier image along with increased costs and regulation. Whether through tourism or residential development the various bureaucracies will have achieved their goal, to tame the Empty Quarter and improve it into an area reflecting dominant values of economic success.

Internal Pressures of Land Access

As has been true for hundreds of years in Kanaio and A'uahi, the two major issues that fracture the Kanaio community and strain social relationships are access to water and land.

Water: Surface water is rare in Kanaio, as it has been for hundreds of years. Kanaio in 1994 is significantly drier than it was in 1700. Competing populations of people, cattle, goats and horses struggle to find sufficient water in this dry environment. Seasonal rainfall has been erratic in the last 30 years, and drought has plagued the entire Honua'ula area for much of the last 10 years. When the residential populations was small the demands could be met with a combination of the Kula Pipe Line and the large *mauka* Reservoir in Kanaio.

With the increase in residents since the middle 1980s, water has become more scarce, and water pressure in the small waterlines which snake down the slopes have dropped. Human use includes gardens, pets and other auxiliary functions, and so water consumption tends to multiply as new residents set up house. A constant question asked by residents was whether I was looking for underground water, and even if I was not, did I know of maps or

other indicators of untapped water sources in the immediate area. This concern is well-founded. Water shortages have become a perennial problem and major political issue for all of east Maui, with open conflict between the older established agricultural community and the recent migrant residential estate community (Tanji 1993a, Eager 1992a, 1992b, 1992c). Though Kanaio does not yet have the problems of large-scale development the tensions are the same.

It is possible that this issue may be resolved through a combination of factors:

The increase in the residential population has put pressure on reducing the pasture and size of cattle herds in the *ahupua'a*. As 'Ulupalakua Ranch controls A'uahi, that area is not open for pasturage to Kanaio residents. A significant proportion of Kanaio, on the recent *a'ā* flow, are not suitable for cattle in any form. As residents continue to move into Kanaio, they are competing with cattle. The number of cattle will start to decrease as owners will have to both water and feed, instead of the old system of open range, significantly increasing the cost of keeping cattle.

The conflict between LLL Ranch and residential cattle is an example of this situation. The numbers of cattle will have to be reduced unless people are willing to spend a much more significant portion of their income on cattle rearing than they have had to in the past.

As more people move into the area, the tolerance for wild goat depredations of gardens and general presence in Kanaio will also decrease. At present the majority of wild goat herds are already in less trafficked and also less hospitable new *a'ā* sections of the *ahupua'a*. Though hunted by individuals and 'Ulupalakua Ranch the numbers in the herds are high. There will likely be an increase in hunting by individuals looking both to reduce a pest and at the same time supplement meat intake, especially if there is a decrease in the number of cattle.

A second factor is a rapid rise in the number of trees. Most of the long-time residents (1970s) noted that there had been a significant increase in the rainfall and moisture levels in the last 8 years, even though overall conditions in east Maui were poor due to drought. It appears likely that the return tree cover may be the major factor for this change, as it was specifically noted by a large proportion of the residents. This is also supported by Resnick's (1977) research. If this pattern continues, and rainfall (and more importantly mist catchment) increases, then some of the water demands (at least for crop watering) may not increase as much as expected.

Land: In the near future the main area of social friction in Kanaio would appear to be the role and place of new residents. The number of returning families is increasing yearly, yet the available land area has not increased, nor has the infrastructure (especially water and power) needed to handle such an increase. The population increase is playing havoc with

many of the treasured images of Kanaio, both of Home and Frontier. Without some sort of collectively-accepted council or leader(s), this conflict will become more visible as long-term residents feel themselves squeezed out of their rights by new arrivals, but equally frustrated in the fact that most of the new arrivals have some genealogical legitimacy to the land. The loss of the Uwekoolani case against the State, which could have opened up land in both east Kanaio Homesteads and also further parcels in west Kanaio Homesteads, indicates for the near future growth will have to come on the lands already occupied and in most cases shared by family groups. Movement by Lower Kanaio families into contested Upper Kanaio lands will continue, causing further friction between Lower Kanaio and Upper Kanaio residents. If return migration continues the character of contemporary Kanaio will change, either in the complex social forms the community operates within or in the values expressed and played out by residents. In the near future control of and claims to land will continue to be the major topic and source of stress within the Kanaio community.

Concluding Views of the Cultural Landscapes of Kanaio-A'uahi

Several issues relating to land use and commonly-held assumptions about land in Hawai'i came under examination during this research. Several of these are assumptions frequently used by planners, while others have been points of intellectual discussion. The highlighting of these issues is a good example of the value of grounded process, as these issues were not part of the original research design, but persistently reappeared in the cycles of code and memo development (figure 2.3). The success or failure of these themes to provide organizing categories for the field data was instructive and warrants a short discussion.

Fallacy of the concept of shared use

A theme common in development circles is the concept of shared use. This has gained in popularity with the increasing demands of various identity groups (often ethnically-defined) for control over resources. Shared use is seen as a way to mitigate the friction and competition between minority and majority groups with divergent interests in situations with limited space and resources. In Kanaio-A'uahi this concept is more one of rhetoric and media image than reality. As noted in the discussion about the Geothermal Powerline, the concept is more accurately defined as minority groups being allowed to entertain themselves with activities/values on the landscape that do not impinge on State (majority) needs or goals.

The problem is that State needs and goals change. The Kanaio Homesteads were set up in the early part of this century as the Territory (State) was interested in obtaining revenue from marginal lands, expanding the local food production base, and reversing the migration from rural areas to the urban centers (Sahlins 1992). Individuals were encouraged to move back into the Homestead parcels to keep these marginal lands productive.

In the latter part of the same century the State does not want the same groups moving onto the same land, as the goals and interests of the State (majority) have changed. A good example in action is the State's eviction of the Uwekoolani family off the land with the logic of protecting endangered plants at the same time they (the State) continue the lease the land to ranching interests. Within the same period the State was willing to allow the Geothermal transmission line to be constructed through the area. At no time did the concept of shared use as a point of negotiation to resolve the dispute get brought up by the State agency. The State's definition is more accurately multiple uses, but only those which fulfill the States' criteria. Obviously shared use does not equate to equality in power to decide appropriate use, therefore the cultural landscape will still reflect the struggle between various interested groups.

The physical landscape as a passive force

The concept of the land as an active and animate force, which is on one hand basic to the New Age religious movement and avoided as folk culture by planning agencies is a key concept to understanding perception and arguments not only in Kanaio-A'uahi but elsewhere in Hawai'i. The Euroamerican, rationally-based view of the landscape as a passive playing field which people shape and modify to their specifications, while comforting to civil engineers and urban planners, is contradicted by the social evidence in Kanaio.

All groups that have a persistent presence in Kanaio-A'uahi see their link to the place not only in emotional terms but also with the place as a living presence. 'Ulupalakua Ranch's owners feel a strong emotional bond to A'uahi, and see the place as actively interacting with them. The Upper and Lower Kanaio communities, while disagreeing over many items, do agree that the place is an active agent. Whether it be imbued with the *mana* of ancestors and family (Lower Kanaio) or a more general Gaia-based concept (Upper Kanaio) the concepts are strikingly similar. This is especially true when it is realized that the concept actually shapes social interaction. A common pattern for dealing with possible conflict throughout Kanaio is with avoidance. The process is based in the belief that the place (i.e., Kanaio) will actively police the situation and chase away the offending party. Many residents gave examples of the success of this procedure, which imbues the landscape with an active

and animate presence.

This perception is being increasingly tested in two separate ways. Within Kanaio, the principle of avoidance is becoming increasingly difficult to achieve with the decrease in available space. The principle is only effective in areas with low population density where one can avoid the other party, or if necessary move elsewhere in the community. While a viable option twenty years ago, for most residents this option has disappeared.

The second test is in dealing with external forces. The belief in the power and active nature of Kanaio is limited to the residents of the place, and does not extend to government agencies. In contrast outsiders see the area as marginal and the Empty Quarter. While in the past this has allowed residents the freedom to go follow their own path, the counter is that when the area does become of interest to powerful outside groups they do not feel any particular reason to be concerned about such a small community. There seems to be a view in the Kanaio community that the place (Kanaio) will come through to resolve the issue as it has in interpersonal cases, protecting those it has invited to live in it and considers family. Regardless of the relative success or failure of the concept, the fact that it is commonly held by community members defines it a substantive issue. While metaphysically or rationally it might be in debate, socially it exists, as social patterns and interaction are based on Kanaio as an active, animate force rather than a passive, inert geographical feature.

Loss of the Frontier and Empty Quarter images

As noted earlier Kanaio and A'uahi are perceived as the Empty Quarter by most outsiders and even by a few residents. In the past this has been an advantage to some groups. To 'Ulupalakua Ranch it meant that improvements were not crucial as no one had great expectations for the land, so secondary use such as goats could be condoned or even encouraged, despite the fact that they competed with the cattle for pasturage and water. This lack of productivity also allowed the Ranch to remain the major player in Kanaio affairs for many years, with little external interference, as the Empty Quarter was not of interest to other groups.

To the bureaucracies and the tourism industry, Kanaio is a waystop between Kula and Hāna, of little interest and no economic opportunity. This meant that bureaucratic interest in development of the area is minimal at best. This can be seen in the continued utilization of Pu'u Pimoe as a firing range by the Hawaii National Guard, certainly not a indication of highly valued land. This has also meant that activities in the area are not heavily monitored.

To the residents this lack of interest has been very useful. As long as people have avoided areas or activities that threatened the Ranch (or to a lesser extent the military) they have been

pretty much free to do as they please. This allowed families to live in areas of questionable ownership and pursue lifestyles outside the norm. However, as these groups have become more settled, with improved housing, better road access, gardens and rapidly-increasing tree cover, unanticipated changes have occurred. Primary among these is the increasing attractiveness of "going back to the land ." This does not mean to traditional 17th century dry forest agricultural pursuits, but rather to a contemporary rural lifestyle. As residents have successfully made Kanaio more comfortable and attractive, these little changes have made the area even more enticing to both new migrants and returnees.

With the population increase and the visible changes on the landscape, the interest of various bureaucracies has been triggered, and the lifestyle freedom that made Kanaio originally so attractive will be lost. This can most clearly be seen in the increased number of disputes over land access and control. An increasing percentage of these issues are becoming formally contested, and invoke the bureaucracy at one level or another. For many individuals and families in Kanaio, the more they struggle to keep what they have, the more they will attract the formal interest of the very groups they were originally trying to avoid.

Given the present rate of change it is likely that Kanaio will be a fully-regulated community with inspection and intervention from all appropriate agencies in the next five years if not sooner. This will undoubtedly change the character of the community, and may result in an increase in outmigration. The major factor mitigating against large scale outmigration is the lack of suitable alternative locations. In many ways Kanaio-A'uahi can be seen as the end of the road on Maui for individuals seeking places unfettered by most bureaucratic regulation, so in most cases individuals will adjust to the changes rather than try to avoid them.

Impact of the *moku* on the cultural landscape

In the introduction it was noted that the *ahupua'a* of Kanaio and A'uahi were chosen in part due to their being border units in two contiguous *moku*, Honua'ula (Kanaio) and Kahikinui (A'uahi). The results of this study show that the traditional landscape varied little between these two *ahupua'a*. The density and placement of the pre-western cultural landscape is nearly identical within variations in natural features, as both *ahupua'a* contain several concentrated settlement areas surrounded by dispersed habitation areas, all based on dryland agricultural production. Coastal resource exploitation was significant but likely only a supplemental force in survival during this period. A defining factor appears to have been related to the locations of the recent (1600 to 1800 A.D.) lava flows that border Kanaio. These flows act as border features between Kanaio-A'uahi to the east, where the recent *a'ā*.

CHAPTER 5

GROUNDED PROCESS AND CULTURAL LANDSCAPES

This study had two aims. The first the concern of the third and fourth chapters, was to describe and interpret the cultural landscapes, past and present, that make up the elephant of Kanaio and A'uahi *ahupua'a*. The second goal, and the focus of the first and second chapters, was to assess the viability of applying concepts derived from various approaches current in cultural geography to a single research setting. Two criteria guided this second objective. First: the ability of each concept to contribute usefully to field enquiries or according to an early image, to help describe the elephant of the cultural landscapes of Kanaio-A'uahi; and second, how far different concepts can advance a research framework reflective of several different theoretical stances.

An appropriate methodology was crucial to coordinate and integrate various concepts in cultural geography towards understanding a particular cultural landscape. The theory of grounded process, shortened to 'grounded process' throughout this study, was chosen for its emphasis on in-field development of both research questions and incipient answers. On the one hand, this provided the strategic flexibility to apply different concepts and their methodological dimensions at appropriate points in the research sequence without, on the other, challenging the integrity of the overall project.

To return to the parable of the blind men and the elephant, its moral is the inability of the blind men to realize that individually, *they had an insufficiently broad view to describe an animal as immense and as complicated as an elephant*, not that they were inaccurate in their descriptions. This parable applies equally to most academic disciplines, but none more so than cultural geography, given its tremendous diversity of subject matter and lack of theoretical cohesion. Advocates for discrete theoretical stances become the blind scholars, each with a clear but restricted view of the subject matter, in this case the elephant of the cultural landscapes of Kanaio-A'uahi.

Some of these concepts are rooted in current intellectual fashion, some in measurable phenomena, some in intuitive and emotional reactions to images and places. Common to all, however, is an intellectual inability to apprehend complex phenomena in sufficiently holistic fashion. This is where grounded process, with its eclectic concern with various forms of information can provide the integrative glue that the blind men were lacking. Intellectually,

it is not the only alternative methodology; rather that for a single researcher trying to piece the elephant's various parts, it provides a simple yet powerful analytical tool.

The sequence of identifying, defining, and examining categories and memos forces a comparison of various sources and forms of information, as well as helps incorporate details as they become available from newly introduced approaches, without disrupting the original intellectual constructs of the elephant. A constant flow of information becomes additive, rather than a means of validating or challenging presuppositions, as in the implementation of the scientific method. Such a research strategy encourages diversity and flexibility of data collection, analysis, and interpretation, at the end resulting in a far more complete description of the elephant. If, in scholarly enquiry, the scientific method strives towards greater specificity, then the grounded process pushes towards greater generalization. During the initial phases of field research in Kanaio-A'uahi, there was a conscious interplay between choosing concepts and identifying appropriate codes and memos (table 2.1). As the applicability of one concept to particular field data was seen to be exhausted, then another would be chosen for further investigation. This additive process means that it is impossible to nominate which concept contributed most to different chosen codes and memos for comprehending particular sections of the elephant. In, what follows, the cultural landscapes for the *ahupua'a* of Kanaio and A'uahi will be discussed in terms of the relative contribution made by different concepts in cultural geography when filtered through the lens of a single researcher.

Genres de vie

On closer examination, the *genres de vie* approach is far less a formal theoretical construct for cultural geography than a focussed orientation that provides a consistent philosophical basis for research. The lack of both formal concepts and an integrated methodology made its rigorous assessment impossible throughout the project. As presently articulated in the literature, the *genres de vie* approach is neither sufficiently explicitly nor intellectually rigorous to specify questions for primary investigation. Paradoxically, it is this same lack of formal clarity that renders it as intellectually eclectic as the theory of grounded process.

As noted in the second chapter, the need for a philosophical frame of reference for field research led to *genres de vie* being chosen for the initial phase of primary enquiries. At one level this approach provided an intellectual logic for combining concepts derived from various theoretical stances, as well as their particular methodologies. Basically, however, the formal contribution of *genres de vie* was limited to this initial phase of research, since the absence of specific modes of explanation made difficult its ongoing application to codes and memos as

the amount of primary data burgeoned. In short, the distinct lack of conceptual and technical specificity of *genres de vie* is both its great strength and cardinal weakness. It facilitated a flexible and integrative way of viewing changes in cultural landscapes, being in many ways a viable alternative to grounded process.

Conversely, without a rigorous conceptual structure or formal methodology, researchers are left to their own predilections as to which modes of explanation are appropriate in given situations of field enquiry. So little intellectual direction can lead to inefficient use of field time and, far more critically, encourages idiosyncratic analysis of cultural landscapes. Technically, the absence of a clear conceptual structure for *genres de vie* allows a myriad of field methods to be attempted but, without any intellectual logic to justify their particular use, makes the integration of subsequent primary data circumstantial at best. Especially for the inexperienced researcher, it is possible to travel down many blind alleys in the quest for what appears to be pertinent information or, worse, spend most research time on a single technique without realizing the great strength of *genres de vie*--a balanced, overall discussion of the area under examination.

First Concept: Human-Environment Relationships

This concept, based on the premise that the cultural landscape reflects the complex and everchanging relationships between human occupance and physical environment, was the first applied to archival and field data for Kanaio-A'uahi (table 2.1). It was central to identifying and defining codes and memos pertinent to understanding both past and present cultural landscapes in the study area, especially their persistence and change over time. Given the ability of rational approaches within the human-environment school to deal with quantitative and measurable information, this approach allowed Kanaio-A'uahi to be compared with other areas of Maui, the rest of Hawai'i, even the Pacific Islands in general. It also facilitated the definition of categories of present and future land use.

As anticipated, the concept of human-environment relationships was an effective way to organize material from many different sources. A case in point was the implications of the distribution of dry forest (Resnick 1977) for the presence of numerous agricultural features established during archaeological survey, since these were areas of food production yet clearly not supplied regularly with surface or spring water. Other patterns of field data, contradictory upon initial categorization, became comprehensible through the application of this concept.

Appreciating the image of Empty Quarter held by numbers of external agencies, who rarely visit Kanaio-A'uahi, owed a great deal to the utility of the human-environment

approach (Chapter 4). This and similar concepts provide the logic with which such nonresident groups operated, and which, in turn, clarified decisions, assumptions and about managing or controlling this Empty Quarter. As an intellectual tool to discuss such issues as the local development of tourism, changes in land zoning, preservation of the environment (Kanaio Natural Area Reserve), and the routing of a geothermal powerline, this concept was invaluable.

Competition and conflicts about contemporary land use, both within the Kanaio community and between Kanaio residents and 'Ulupalakua Ranch, generated a great deal of information about economic decisions in the areas. The human-environment concept facilitated discussion about how ranching interests and the increasing residential population of Kanaio were competing for basically the same land. It clarified, for instance, why particular key locations and landscapes had experienced so much human modification and why other locations, like the dry forest remnants in east Kanaio-A'uahi, had remained largely intact. In Kanaio-A'uahi, as elsewhere, economic issues dominate much local discussion and are a major source of group conflict, so that the concepts of human-environment links was key to defining explanatory codes and memos that became so central to discussing changes in cultural landscapes since the Second World War (Chapter 4).

As anticipated, the critique by cultural geographers that this concept is unable to illuminate issues relating to group values and personal attitudes towards land was reaffirmed. Beyond the contexts of economics or regional planning it did not shed any light on people's interest or disinterest in parts of Kanaio and A'uahi, especially if these were couched in terms of ritual or personal belief. The same was true for the archaeological domain, since ritual sites or ground features whose functional character was ambiguous were unintelligible in terms of this concept.

Somewhat surprisingly, threat of physical hazards (wind, water, volcanic activity) and the previous responses of residents were unimportant in local conceptions of cultural landscape. Lack of surface water, although critical, is alleviated by tapping it from the Kula Pipe Line for a limited supply. Often, voluntary systems of sequential rationing are necessary because of low pressure, but community access to water is not a visible concern. Extraordinary high winds, major floods, or volcanic activity occur so infrequently from one generation to another that these are seen as future "acts of god" rather than situations to be addressed immediately. Similarly, the limited use of the coastal zone for recreational fishing likewise meant little interest in high surf or near-shore conditions unless a specific trip was contemplated. In modern Kanaio, economic and social needs are dominant, so that natural hazards only become part of the world view during abnormal conditions. Apart from stories about winds

and floods, recent experience with natural hazards has been so limited that little could be elicited about future and potential responses.

Second Concept: Cognitive Maps

To identify codes and memos that might establish links between cognitive images and cultural landscape required details most likely to come directly or indirectly, from interviews. Some archival materials, specifically the Ashdown papers (1977a, 1977b, 1970), the Sterling manuscripts (1966-71), and the interviews with Sam Po (Chapman and Sterling 1968, 1966, Newman and Sterling 1971, Pukui and Williamson 1966, Sterling 1968, 1967a, 1967b), contained information that might have been illuminated by the concept of cognitive maps and indepth interviews were conducted with several residents for the same purpose. Apart from the need for particular kinds of information, a second limiting factor in applying this concept came to be a significant lack of contextual information.

The interviews that Peter Chapman did with Sam Po were rich with Hawaiian names and images of place, especially in lower Kanaio. This fact, at the outset of field enquiries, was thought to have great potential for establishing continuity between past residential patterns and the contemporary community, especially since in Lower Kanaio the two populations are both genealogically related and socially linked (table 2.1). Several impediments worked against this early promise. First, it was difficult to obtain accurate translations to the names located by Sam Po and, second, to establish any contemporary use of the same naming patterns. These same difficulties arose in the interpretation of the Sterling manuscripts (1966-71), especially in the persistence of places mentioned. This inability to link cognitive patterns past and present of landscapes in lower Kanaio was unexpected, since less than twenty years has elapsed between fieldwork and the Sam Po interviews (1966-71), most residents were aware Peter Chapman had held these discussions, and, in fact, several knew Sam Po personally.

This failure illustrates the exponential loss of information among peoples and in societies such as Hawai'i, where many crucial details are still oral and familial rather than written and public. A further limiting factor to the application of cognitive mapping was the consequent dependence on contemporary sources. With greater depth of traditional literature, personal facility with the Hawaiian language, and clear continuity of naming principles between past and present, this approach could have become central to a holistic reconstruction of the elephant's parts. Even so, the concept of cognitive map was a key contributor in two major categories: place perception of legitimate and vested ownership; and the links between naming principles and precepts of cultural landscape. This was especially so when analyzing

communities, contemporary images of place in Kanaio-A'uahi and the connections between Lower and Upper Kanaio (chapter 4)

In the final phases of field research, several memos pointed towards some distinct shifts in naming places that appear to have occurred since Sam Po was interviewed. With few exceptions, coastal names are not currently used by residents. Within the contemporary community, naming is based on general orienteering by physical features (Pu'u Mahoe, Pu'u Pimoe, Lualailua Hills), road intersections, public structures (Buddhist temple, Honua'ula Church), and individual residences (the Goodness House, the Burns House). In common with Hawai'i in general, this suggests a loss of traditional place names based on ritual and ancestral ties to places whose names frequently are tied to social relationships and features of human occupation.

Third Concept: Conceptual Landscapes

The conceptual landscape, a key notion within the landscape as signifier tradition, is based on the premise that all material aspects of a society's culture, even the built environment, reflects the beliefs and values of the group. Given the various ethnic communities that make up Kanaio as a place, combined with the early record of Hawaiian tradition in its various archaeological features, the conceptual landscape was an early choice when identifying codes and memos (table 2.1). As fieldwork progressed and the complex patterns of multiple cultural landscapes came increasingly to light, so this concept become one of the dominant in the project. During later phases of primary enquiries, especially indepth interviews, it was clear that beliefs and values were major determining factors for much of the attitudes that underpinned individual and collective action within Kanaio-A'uahi.

The particular beliefs and values that define and bind together the very different communities of Lower and Upper Kanaio, as well as the unifying attitudes and feelings held by both groups of residents about Kanaio as a place, could only be understood through the notion of the cultural landscape as conceptual landscapes. Its great strength was the ability to clarify why Kanaio-A'uahi is so valued by such a diverse set of people, thus exposing the logic that underlay the thinking of community members, in both an individual and collective sense. Kanaio as a place is held together and identified by icons and symbols that in turn define and bind community members, and lies at the heart of different contemporary landscapes as discussed in the fourth chapter. The same concept was expanded to explain how the community has created key symbols and categories of images as territorial

statements upon which ongoing struggles both within itself and with external agencies focus (chapter 4).

However, as pointed out by previous critics, the conceptual landscape is not without serious limitations. For Kanaio-A'uahi, it was the assumption that the environmental parameters of a place are an inert playing field, upon which various groups struggle for ascendancy and control. In fact, this physical landscape is anything but inert or passive, especially given the overriding constraints of surface water and soil. To ignore such factors severely compromises the ability of the conceptual landscape to apprehend the complexity of human-environment relationships and in so doing, to appreciate the elephant that is the cultural landscapes of Kanaio-A'uahi.

Fourth Concept: Landscape as Signifier

The premise of landscape as signifier is that the placement of structures, especially those of symbolic and ritual importance, reflect geomantic principles and in turn, the ritual worldview of the society. Since geomantic descriptions abound in early Hawaiian materials (Haleole 1863, 1862, Waialeale 1834) and more contemporary manuscripts (Chapman and Sterling 1966, Newman and Sterling 1971, Pukui and Williamson 1966, Sterling 1968, 1967a, 1967b, 1966-71), this concept appeared highly appropriate to the early ordering of codes and memos and, especially for interpreting archaeological features in the two *ahupua'a*. Anecdotal evidence from Kanaio also suggested that spatial patterns of residential land use, and of the nature of landscaping signified ethnic differences within the community.

In fact, the applicability of this concept was limited in several ways. First, for the precontact cultural landscape in Kanaio-A'uahi there existed no detailed descriptions of land in dry-land forest as distinct from nearby agricultural production (Resnick 1977, Handy and Handy 1972, Handy 1940) in turn critical to understanding whether specific sites and patterns of location were defined by pragmatic considerations, technical demands, or ritual worldviews. Since agricultural production dependent on the location and density of dry-land forest is unique to Hawai'i, argument by analogy from similar environments could not be attempted. Similarly, the absence of any comparable agricultural use at present, or of a parallel dry-forest expanse sufficiently great to construct plausible models, limited description to a few early sources about Hawaiian plants (Handy and Handy 1972, Handy 1940). Such material was an insufficient basis to specify any codes or memos that might account for the location and placement of archaeological sites.

Second, as the sequence of codes and memos continued to shape field research from the initial phases, it became clear that to collect sufficient information to apply the concept of

landscape as signifier would require enormous investments of time. The detailed mapping of discrete items on the land and their spatial arrangements that would be necessary have no great utility for or transferability to other key concepts, let alone whether those resident would be willing to allow such detailed field activity. Several families occupy land that is at least contested and the construction of their residences did not necessarily follow approval from some distant bureaucratic process. While this research had considerable support at the level of the whole community or smaller groups, to have shifted the emphasis to the level of the particular family or individual resident likely would have generated visible tension throughout Kanaio-A'uahi.

A host of ethical, legal, and bureaucratic implications also would have confronted residents and researcher had detailed records of both location and type of house construction become available to external agencies. The ethical complications to such sensitive information is not discussed in the literature on landscape as signifier, nor is it likely that the Kanaio-A'uahi situation is unique. In the end, the huge investment of time involved, the lack of sufficiently detailed source material (especially for precontact landscapes), and the need to maintain good working relations with as many members of the community as possible, meant that this approach was abandoned about the middle of the research sequence. While the concept of landscape as signifier has intellectual value and promise, the cultural landscapes of Kanaio-A'uahi research was not a suitable topic for its application.

Fifth Concept: Experiential Landscapes

This concept assumes that all research has imbedded within it the conceptual and cultural biases of the investigator and, in particular, that all information becomes filtered through the perceptual and social frameworks of the individual. Of all concepts used in this study, that of experiential landscape was the most difficult to apply--technically, through the need to make daily diary entries in a personal field diary and socially in the shift away from conventional roles of researcher and from conventional concepts of privacy. For someone trained in the western scientific tradition, where the researcher is distanced from the ongoing study, this constant repetition of writing down daily field experiences is challenging. These diary entries continued throughout the various field phases (table 2.1, appendix II) and the resultant information became important to implementing the theory of grounded process (figure 2.3).

Despite difficulties of implementation, this approach focuses attention on the perceptions and biases of the fieldworker, a dimension of scholarly activity often ignored or glossed. Describing in a personal diary situations and impressions as they occurred each day in the

field was not only critical to identifying and refining categories and memos but also, more importantly, helped to highlight problematic areas at different stages of the research that had not been considered (figure 2.3). Such a wealth of detail operated as a form of checks and balances when implementing grounded process as a organizing method, which in itself lacks an effective structure and has the potential to become self-validating (chapter 2). The concept of experiential landscape in part provide such an inherent structure as diary entries are read and reread, examined and reexamined, for lines of enquiry abandoned or not pursued.

Although effective, the original rationale for introducing the concept of experiential landscapes into primary enquiries was different. It was to establish the perceptions and understandings of a place, Kanaio-A'uahi, and whether these had changed over time--a less useful idea, in that these particular cultural landscapes were those of residents rather than the investigator. The implication that an outsider's worldviews of the landscape reflect those of any resident assumes a level of shared experience confined to interacting only with physical aspects of the overall environment. In any community like Kanaio where oral traditions predominate, residents have emotional and ritual links to the land that are particular to themselves and not shared by outsiders, including research workers. At this level, the concept of experiential landscape is overly naive and glosses a highly diverse area so that, at the end, the complex reality of the Kanaio community becomes lost from view.

Sixth Concept: Time-Space Allocation

Given the assumption that individual patterns of travel on a landscape reflect personal and social decisions about the use of time, it was thought that the notions of time-space allocation would be a key organizing concept during field research. This was especially so since wager earners must transit every day from Kanaio to other locations on Maui and to make basic purchases in a community without stores involves a drive of at least two hours. All schools are located at equivalent distances, making Kanaio in many ways a bedroom community for parts of Kula. Yet other advantages for a time-geographic study of Kanaio-A'uahi seemed to be the comparative lack of transportation corridors (only one highway) and of various modes of transport (cars or trucks).

A further expected advantage of applying time-space allocation is that it would tend to level socioeconomic distinctions between various groups within the Kanaio community through being rigorously quantitative in implementation. Collecting details about individuals and daily travel portrays real world patterns in the personal allocation of time and space and, for this reason, would emphasize common issues tending to unify the Kanaio

community, regardless of contrasts in ethnic identity or value systems. Consequently, a significant period during the middle stages of field enquiry was given over to obtaining travel data to implement this concept. Unfortunately and paradoxically, this was an impossible goal to achieve in the time available.

As with the concept of landscape as signifier, the number of hours needed to collect detailed data that could be used for only one concept was not an efficient use of limited field time. A second and unanticipated impediment was the tremendous demands placed upon Kanaio residents to keep detailed and accurate activity diaries--a demand that was seen to be unreasonable when other field techniques meant intrusions into daily routines. It also became clear that, for at least some participating residents, patterns of daily travel in the short run would be changed once it became obvious what was being revealed. In short, time-space allocation is an example of a concept that, on one hand, offers great promise for organizing quantitative data in unique and valuable ways but, on the other, is so demanding in the amount and detail of data required as to severely limit its applicability to real-world studies.

The Validity of Grounded Process

A second major goal of this research was to assess the applicability of the theory of grounded process to examine the changing cultural landscapes in the neighboring *ahupua'a* of Kanaio and A'uahi. To this end, several concepts from different theoretical schools within cultural geography were considered, an intellectual stance criticized in the literature for its lack of philosophical purity (Johnston 1990) and for the absence of some central organizing principle to allow the effective implementation of diverse concepts (Gregory et al 1994, Bird 1989, Norton 1989). The ability of grounded process both to manipulate and control information through the prisms of quite different concepts is seen in the discussion of cultural landscapes in Kanaio-A'uahi, whether traditional or contemporary, pristine or constructed (chapters 3 and 4). Grounded process as an organizing principle and an alternative to the scientific method was the key to the success of this research project. It allowed each concept to be addressed separately and independently, and to yield both methodological and explanatory possibilities for data under examination. This range of concepts, far from offering competing views of intellectual reality, became the means to attain complementary interpretation of the information collected in the field. Consequently there was no support for Johnston's (1990) position that theoretical approaches and their constituent concepts are philosophically exclusive.

In several fortuitous cases, concepts chosen not only provided intellectual alternatives for identifying and refining codes and memos to apprehend the cultural landscapes of Kanaio and A'uahi, but also created a valuable set of checks and balances in the tension between theoretical goals and field realities. This was especially true of the concept of experiential landscapes, which contributed far more to an acknowledgement of how one concept could consume far too much of available research time and much less to discussions about existing cultural landscapes. This emphasizes an important point: that for grounded process to be applied successfully to the study of cultural landscapes requires a number of diverse concepts, chosen carefully to reflect theoretical stances that are competitive rather than complementary. Without any such conceptual matrix and any such structure of checks and balances, grounded process can easily become a validation of eloquent preconceptions. It is only by constantly injecting new concepts that continually require major reworking of information contained within existing codes and memos that grounded process exhibits its particular ability to address interpretation, understanding, and explanation in new and exciting ways.

The ultimate goal of grounded process is to specify theoretical statements that not only reflect the overall research experience (figure 2.1) but also represent organizing principles for further cycles of field enquiry and conceptual analysis. As follows:

1. The dynamic nature of cultural landscapes is reflected in the persistence of past representation, or portions of them, into the present. Cultural landscapes are as much reflections of the past as statements of the present and great depth of both chronological and social time is a necessary condition for their contemporary understanding.

2. Cultural landscapes conceived by competing groups apparently do not exist in isolation. Instead, they interact with each other and often this perceived presence helps shape the actions of competing groups in both the creation of both landscape images and territorial symbols.

3. Discrete cultural landscapes are held by different groups interacting within the two *ahupua'a* of Kanaio and A'uahi. While the physical parameters do not change, the cultural images and symbols with which each group imbues the landscape reflects the values, attitudes, and beliefs central to the wordview and sense of identity of that group.

4. Significant points of congruence in the attitudes of various groups towards Kanaio and A'uahi is not surprising, given that they are interacting within the broader compass of contemporary American culture at the same point in time. What is more striking is the wide

divergence of values attached to various places on the cultural landscape and how these lead to major differences in group and personal actions taken towards the landscapes of Kanaio and A'uahi.

5. The results obtained support the initial premise that there exists within the residential population simultaneously in Kanaio-A'uahi an extremely complicated pattern of divergent cultural landscapes. The complexity of these various landscapes reflects both their creation and continuous conflict and struggle about them. All this ferment has occurred within a relatively small area whose physical and social boundaries are unambiguous.

6. No single theoretical approach, its constituent concepts and imbedded methodologies, would have been sufficient to elicit the complexity of cultural landscapes in contemporary Kanaio and A'uahi. Only an intellectual stance able to incorporate concepts of diverse theoretical origin and structured through grounded process could have achieved some comprehensible understanding within the limits of fixed time and finite resources.

Future Examination of the Elephant

A major difficulty in using the theory of grounded process is the absence of closure in research. Given the cyclic nature of data, categories, codes, and memos, enquiries have to be concluded more on the arbitrary basis of cost and time rather than by any rigorous intellectual criteria. Some parts of the elephant, although originally listed at the start of research enquiries, still are poorly known. As noted during the theoretical discussion (chapter 2), grounded process has the continuous ability to highlight new and possibly profitable directions of research throughout the lifeline of a particular project. With respect to the various cultural landscapes and perceptions of place found in Kanaio-A'uahi before, now, and into the future:

1. A careful synthesis of the genealogies of Kanaio and A'uahi residents needs to be completed by building on the detailed work done earlier in the century by E.D. Baldwin and L.J. Watson, among others. The various interrelated families making up the community of Lower Kanaio have compiled a detailed genealogy, which needs to be correlated with records of the probate court, former tax documents, and other archival materials. Given the poor state of existing documentation about Maui from the period of the monarchy this will require

a great amount of archival investigation of such manuscript materials as old church records that may still be available, but not for many years more.

2. The homesteads process as it pertains to the two *ahupua'a* of Kanaio and A'uahi, needs similar clarification. For these communities, it remains unclear precisely what was the homestead process, by what means were lands allocated, and what proofs of prior use were offered in support of family claims. Further archival enquiry into records from the late monarchy, republic, and territorial periods into the 1940s to determine both land ownership and loss of access to land became increasingly a contentious issue as this research unfolded. Similarly, this situation has concerned for many years those Kanaio residents intending to make future land claims based on homestead criteria and requirements. During legal hearings, missing but necessary documents may come to light. More properly, a systematic search for missing documents, and a careful synthesis of existing ones, is crucial to understanding how residents' worldviews of Kanaio changed during the 1880-1940 period and how, in turn, this led to the conception of Kanaio-A'uahi land as the Empty Quarter among governmental agencies.

3. The unsolved question, which now appears to be closer to resolution, is what happened to various inhabitants of Kanaio-A'uahi who were present before inmigration occurred during the 1780s and from which the present community of Lower Kanaio claim descent. Their apparent demise or disappearance must relate, in one form or another, to the depopulation of A'uahi. Again, evidence may exist in various archival sources. A recent project by Carol Silva of the State Archives and others to collate and index newspapers published in the Hawaiian language from the 1830s may be one source for these events, perhaps in addition to early church records. Again, this will involve a time consuming search of the archival records but increasingly, detailed knowledge of land access during these early times is critical to resolving contemporary issues for Hawaiian peoples in places like Kanaio-A'uahi.

4. Another use for various early records would be to achieve improved understanding about local values and attitudes towards Kanaio-A'uahi before the 1840s. Specifically, what lies behind the coastal names revealed by Sam Po; a more detailed account of the Pamano legend given its possible centrality to the ritual complex in Kanaio; and what are the various place names and categories of images that refer to various *heiau* throughout Kanaio and A'uahi.

The lure of Kanaio-A'uahi, its physical beauty and its people will always make the prospect of continuing enquiries seem like leisure rather than work. Resources available from both community members and former residents mean that this particular project on changing cultural landscapes has uncovered no more than the top layer of a rich iode. Information from field enquiries, combined with archival documents, hopefully have provided clarity and unknown detail to the various perceptions and values that account for the diverse cultural landscapes of two adjacent *ahupua'a* in southeast Maui.

APPENDIX I

THE CULTURAL LANDSCAPES OF THE PAST IN KANAIO-A'UAHI

The Physical Evidence

While no formal detailed archaeological survey has ever been conducted in either Kanaio or A'uahi, in 1930 Winslow Walker conducted a survey of major sites on the island of Maui under the auspices of the Bernice P. Bishop Museum. Unfortunately while the manuscript was completed in draft form, it was apparently found unacceptable for publication and has thus languished in the Bernice P. Bishop Museum archives. In the 1960's Elspeth P. Sterling compiled all available archaeological, legendary and interview sources for a compendium of archaeological and legendary Sites of Maui in the same format as the volume on O'ahu that she and Catherine S. Summers had completed and published in 1978 for the Bernice P. Bishop Museum. This work was supplemented by interviews and place-name mapping conducted during the Bishop Museum sponsored survey of sections of Kahikinui in 1966-1967 under the direction of Peter Chapman. Unfortunately, as with the Walker work of the 1930's, neither the Sterling "Sites of Maui" nor the Kahikinui research was ever completed and published. Thus while there is a fair amount of material available that refers directly or indirectly to Kanaio-A'uahi, it exists in fragmentary form without any synthetic discussion or analysis.

The major source used in this discussion of prior archaeological work is the E.P. Sterling ms., as she was working with Peter Chapman in collecting material on Kahikinui, and thus her manuscript files contain the majority of information available through 1980 including the earlier work of Walker and others in Kanaio-A'uahi.

The other sources that directly discuss the study area are varied in nature: the first is the various writings of Inez Ashdown, a long-time resident of the 'Ulupalakua area and very familiar with the Kanaio-A'uahi area. The second source are the files of the Office of Historic Sites, Department of Land and Natural Resources. In the 1970's they conducted a series of very quick reconnaissances on this entire section of the island of Maui for the purposes of re-checking the condition and preservation possibilities of various sites discussed in the earlier Walker (1931) research. The goal was to develop an initial database of archaeological and historical sites suitable for the State and National Register of Historic

Places. Unfortunately the work is rather skewed as time and staff limitations forced the work into areas of minimal effort, thus the coastal regions, with easily-visible site complexes became the emphasis of the study.

In order to more easily visualize the patterning of the archaeological record in Kanaio-A'uahi, the sites have been organized into functional types (as defined by Sterling and others) rather than just by *ahupua'a* location. The site numbers given are arbitrary location numbers for the purposes of map identification (see Map II-IV). Unless otherwise noted all the following information is directly abstracted from the Sterling ms files. Sites noted with asterisks are in bordering *ahupua'a* (Kalo'i to the west and Lualailua Hills to the east) outside the formal boundaries of the study area.

Location Code

To preserve the anonymity of the sites, but at the same time provide some orientation to their location, the following coding system has been used for this study:

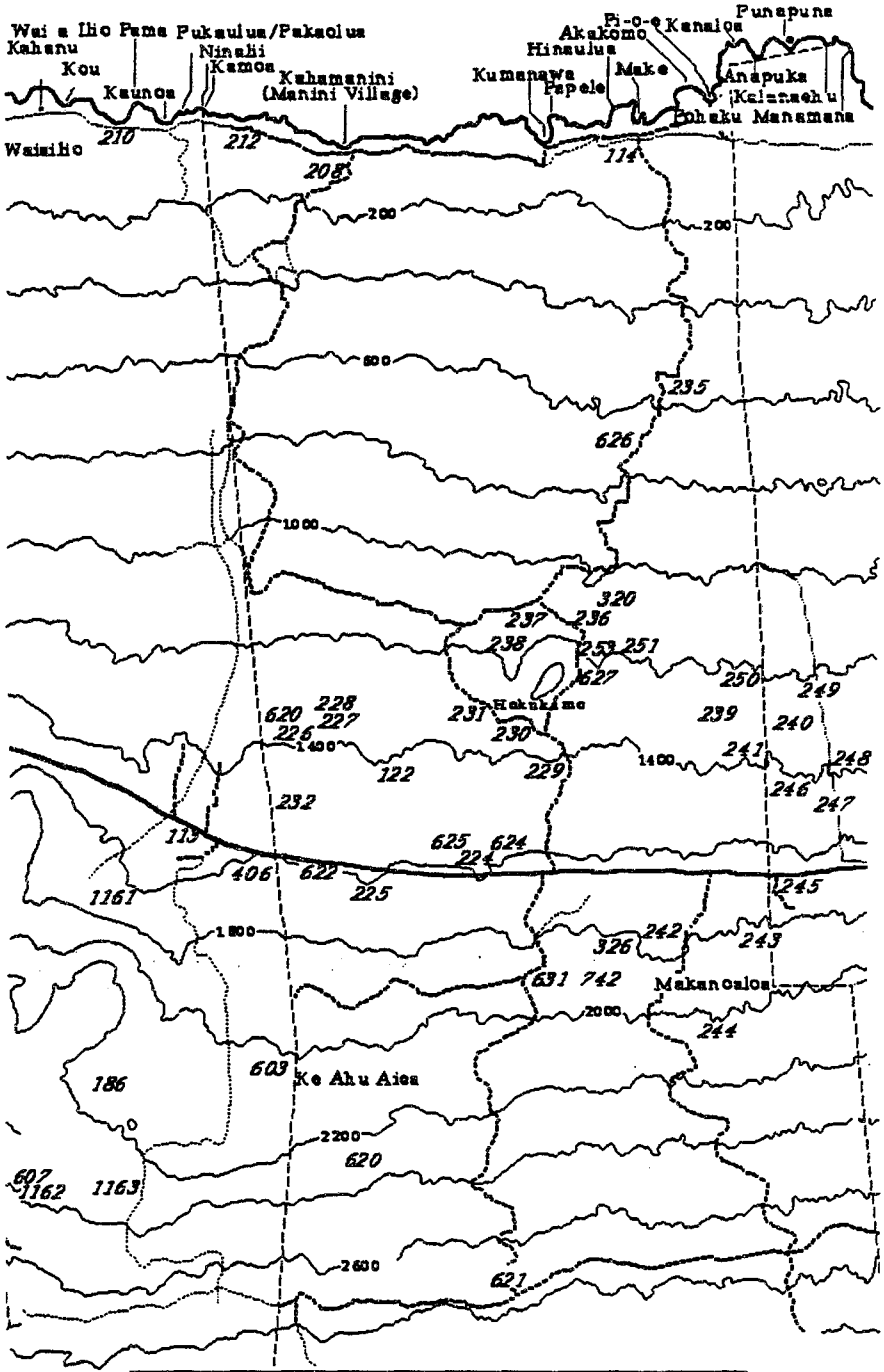
From the coast - 300 foot elevation= A
From 300 - 600 foot elevation= B
From 600 - 900 foot elevation= C
From 900 - 1200 foot elevation= D
From 1200 - 1500 foot elevation= E
From 1500 - 1800 foot elevation= F
From 1800 - 2100 foot elevation= G
From 2100 - 2400 foot elevation= H
From 2400 - 4000 foot elevation= I
Above 4000 foot elevation= J

Sites with roman numerals are those located by prior field study or mentioned in the literature. Sites with italicized numerals are those that were located during this field survey. Abbreviations used include "m" for meters, "cm" for centimeters and "km" for kilometers.

Religious Sites

101[Kanaio]: Ke-one-ulaula (Red...Sand). Has kukui nuts from the grove of Lanikaula (Molokai)--this became a second grove also called Lanikaula. (Po interview 1966)

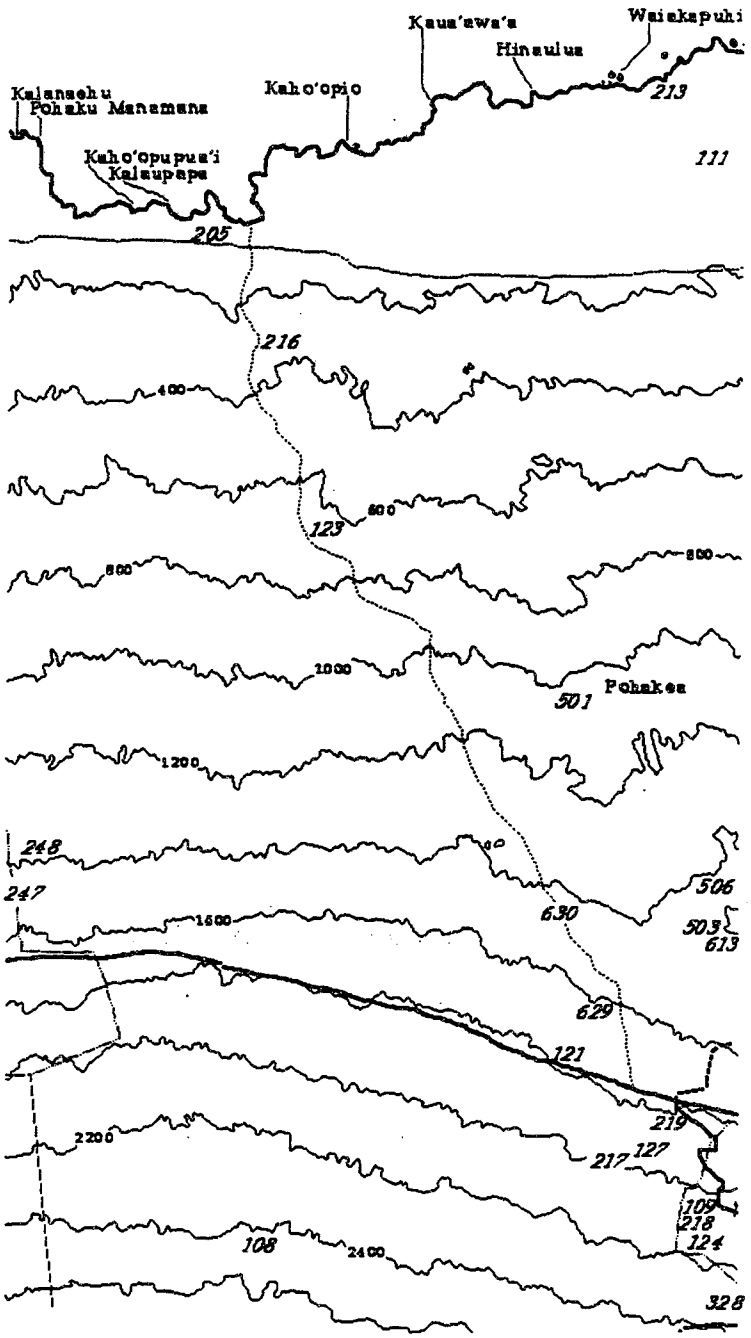
102*: 'Aku, a ho-oulu-'ai heiau lies on the seaward side of the road. (Po interview 1966)



MAP A.I.1

A'uahi
Archaeological Sites

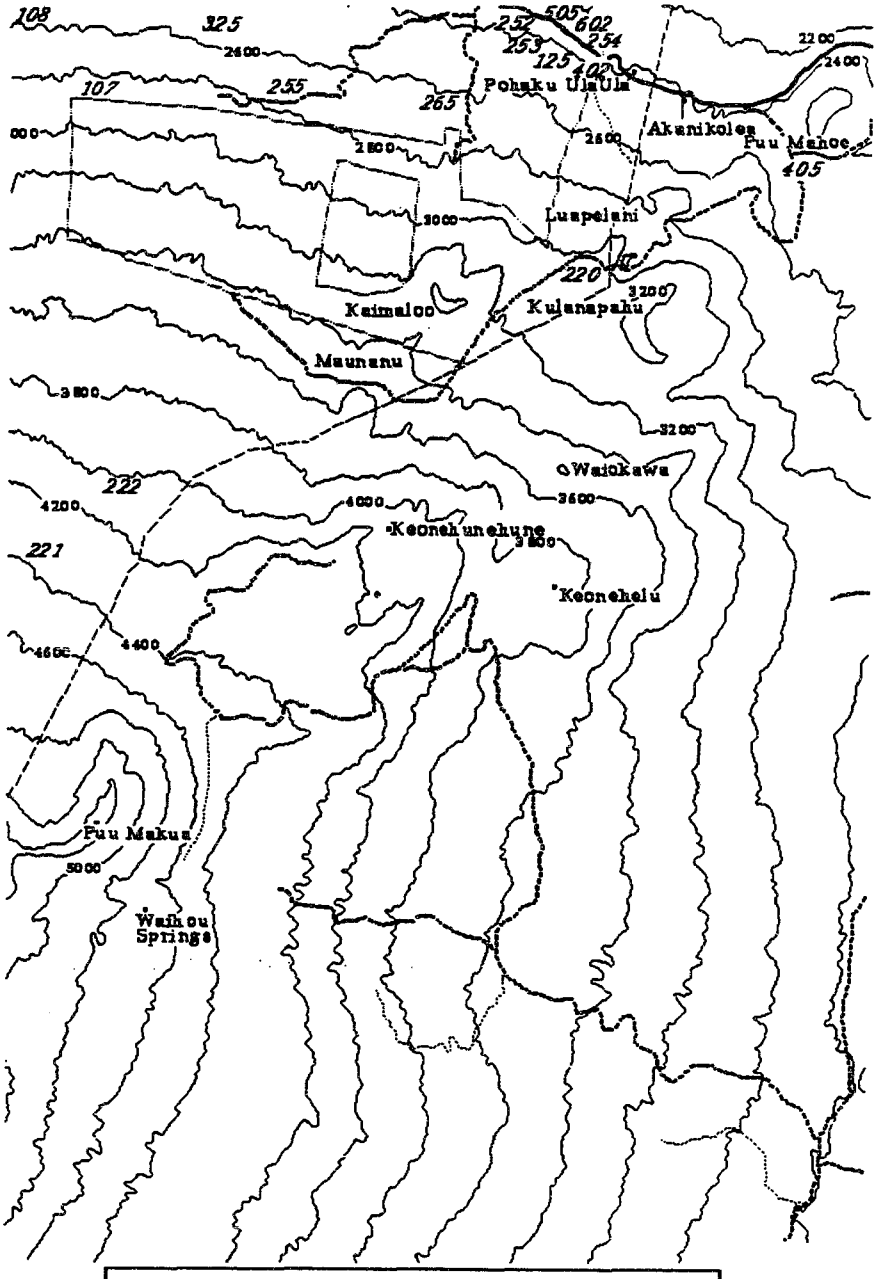
R.B. 9/94



MAP A.I.2

Lower Kanaio Archaeological Sites

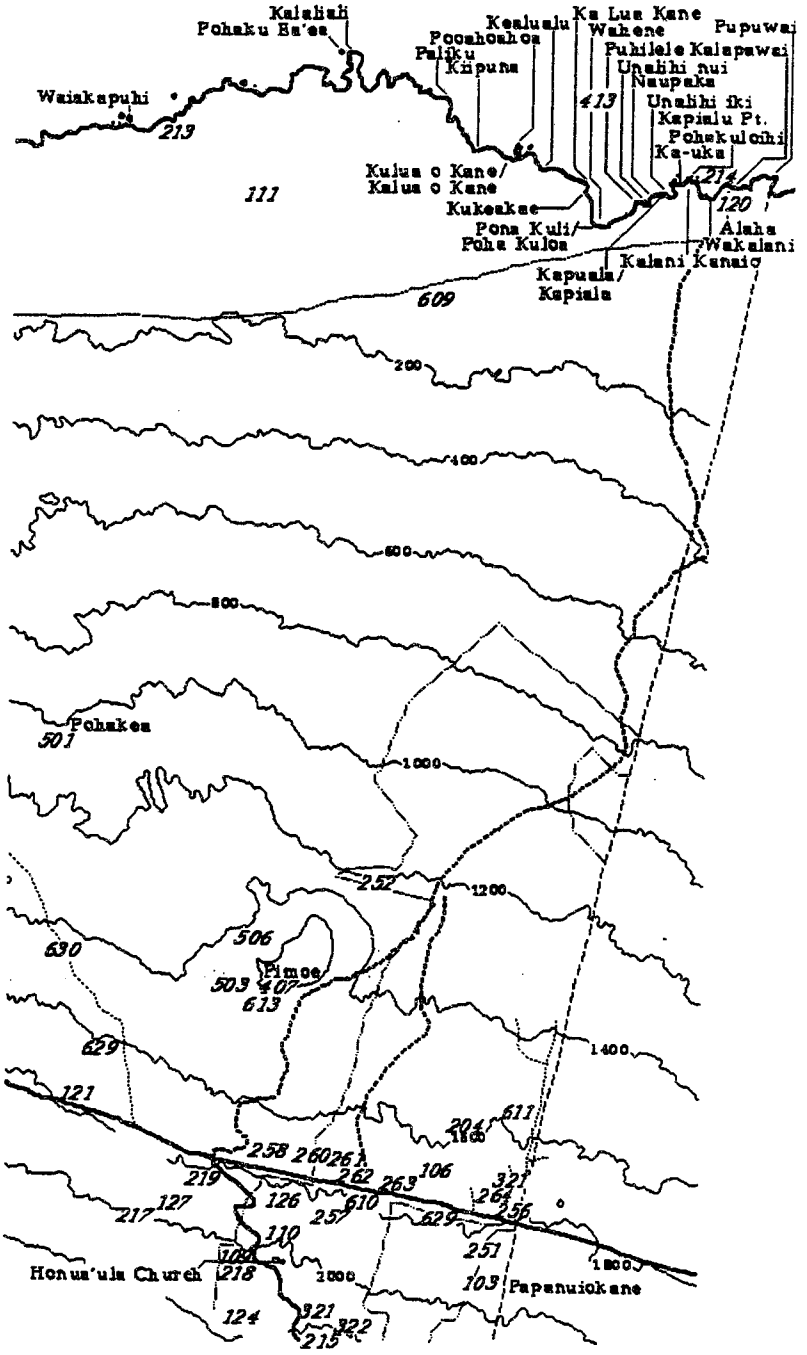
R.B. 9/94



MAP A.I.3

Upper Kanaio Archaeological Sites

R.B. 9/94



MAP A.I.4

Lower Kanaio-Kalo'i Archaeological Sites

R.B. 9/94

104[A/Kanaio]: Located above the short trail several hundred feet near the a'a flow on the Kaupo side. It is a large rectangular enclosure approximately 60 by 60 feet, of a'a slabs (not chunks). In the walls are pieces of coral. Opening on the Kaupo side. Walls are 10 feet high and 3 feet thick. Depression on the top of wall are possibly for images. From shore trail to this structure are scattered a number of stone cairns approximately 6 feet high. (Sinoto ms 12/22/61)

120[A/Kanaio]: Wahene Platform, which is Walker site ? listed as a heiau or burial site. The presence of post holes in the platform suggests a house site instead. It is a rectangular platform 18m by 8m, on a lava flow 250m north of the shore. (Connolly 7/11/1974)

103[G/Kanaio, map A.I.18]: Another heiau is at Hulupapa, a fig grove lies mauka of it.(Po interview 1966)

Papanuiokane Heiau site 192 [B1-27]. This site is located at Hulapapa approximately 200 feet above the upper Kaupo trail. It consists of a platform measuring 63 by 44 feet, of rough a'a without pebbles or coral. The front is 3 feet high. Drums are heard from this heiau. (Walker ms 1931)

Site 192, Papanuiokane Heiau. The Walker platform. The site is located approximately 700-800m to the west of the Kanaio (Honua'ula) Church, at the same elevation. The vegetation includes koa haole, lantana, yellow poppies and the Apples of Sodom bush. It is cleared and roughly leveled with paving, one short wall and a stone-lined pit. There were no visible uprights. (Connolly 9/21/1973)

A large enclosure of well-stacked core-fill *a'ā* with a standing upright in the northeast corner in front of a very large boulder. This enclosure is located in the site 251 complex at the boundary between Kalo'i and Kanaio. The *heiau* appears to have been somewhat truncated at the *makai* end by a relatively recent bulldozed jeep trail, and likely consists of a series of clustered enclosures in this flat pasture section. The location seems somewhat unusual given the proximity of a ridge nearby with excellent overlook visibility, while the apparent heiau site is located in a lower section with somewhat limited visibility. The site is not particularly large, and consists of a pair of enclosures and cleared paved areas covering approximately 15m x 12m. (Bordner 12/29/91)

105[A/Kanaio]: Ko'a site Ho-4 [B2-6]. Near the shore and below the trail and a little towards the Kula side of the heiau [Ho-3] is a large pond (now dry). On the makai side is a rectangular platform which may be a ko'a. Coral on top. (Sinoto ms 12/22/61)

106[A/Kanaio]: Heiau site Ho-2 [B1-31]. Mauka of Pi'ilani Bay, approximately 2000 feet. Houses of Kanaio village almost directly above on the hill. Terraced platform built into a rocky hill. Faces mauka, approximately 7 feet high. Makai side is a natural hill. An old trail must come through here. (Savage and Tompkins ms 11/61)

Kanaio Mauka complex, which consists of an early historic houselot complex in an arid area. There is sparse lantana, koa haole and Apple of Sodom bushes. At the northeast corner is a thick tangle of fig trees. There is a large terrace platform and at the northeast end is E.P. Sterling's site Ho-2(Ma-B1-13). The complex measures 105m from east-west by 70m north-south. It is constructed of a'a, mostly on flat ground or base of a 5m high cliff. It has historic and pre-contact artifacts. (Hommon 8/15/1973)

125[I/Kanaio, map A.I.8]: Series of large enclosure/boundary walls and historic house(collapsed) - while some of walls seem historic, and all stacked *a'ā* up to 1.8m high, 0.8 wide and well-done. It somehow seems that it larger than it should be and has front (downslope) facing of very large stone. It appears to be a pre-contact site that was used during the historic period as a house site. Some of the eucalyptus on-site (this is the West Eucalyptus grove) a very large but definitely post-date the walls, the trees having been planted in the 1930's by CCC workers.

Some of the enclosed areas do not make much sense as they are on steep slopes and the layout is very odd in certain spots. The site contains a well-made rectangular cistern 2m x 3m (interior diameter) of mortared stone which had a protective roof of corregated iron (still present though collapsed). The collapsed house was apparently single-roof with board-and-batten siding measuring approximately 10 feet x 30 feet. Downslope of this site are several further enclosures (to West), and to the North are several level platform units situated between a pair of parallel walls. The size of the stones used in construction, and the quality of the stacking is notable, especially on the front facing of the major walls. (Bordner 6/11/1992)

110[G/Kanaio]: Manokaahia Heiau site 191 [B1-26] is located at Puki 200 yards west of the church in a hollow open to the sea. It is an open platform 60 by 63 feet, constructed of rough lava. The front is 3 feet high, the back 1.5 feet high. A wall 2.5 feet high separates the higher and lower platforms. The upper platform is dirt and coral-pebbles. A grave has been placed on this heiau so the natives speak of it as having lost its heiau standing and power. Drums and 'ukeke music are heard here on the nights of Kane. (Walker ms 1931)

Manokaahia Heiau, Walker site 191. It is located slightly mauka and west of the

Kanaio (Honua'ula) Church. No distinct structures were seen in this part of the hollow. However, in this hollow it is possible the ruins of Manokaahia Heiau remain. Starting in the church yard, we crossed a wall on the west border. We then walked west down into the hollow roughly in line with the church. We climbed over another wall. Between this second wall and a small ridge bordering on the east side were small poorly preserved rock piles that possibly mark the heiau site. a large mound of rocks may be the grave Walker refers.

What we found did not match Walker's description. More small terraces were evident in the floor of the same hollow makai of the structures described above. (L. Bruce 7/9/1972)

A series of collapsed core-filled walls and platform edges, very badly kicked around, the must be L. Bruce's Manokaahia *heiau* mounds. It is located in the *mauka* section of Site 257 on a higher flat, and so overlooks most of the site, though it is downslope of the habitation platforms. It is impossible to accurately locate any features, though it appears to be a series of stepped platforms with low core-filled *a'ā* walls. There is a boundary wall just *mauka* running East-West to Honua'ula Church and a second one to the East which separates the flat from the gulch to the East (between the flat and Honua'ula Church). It appears likely that much of the *heiau* structure was borrowed for the wall construction. *Mauka* of the boundary is a further series of terraces which appear to be part of the same structure. When the terraces are lined up you end up with a multi-leveled stepped platform structure with low core-filled walls oriented directly towards the East side of Pimoe cone. (Bordner 6/13/1992)

126[G/Kanaio, map A.I.10]: The cave of Kaipolohua. On this upper road...in Kanaio, they passed the cave of Kaipolohua, seaward of place of Lono, son of Pamao, the person about whom there is a story full of pathos. They passed Kanaio reaching Puuonole where they tread the famous lava of Kuanunu... (*Kaukoa*,Moses Manu: 2/23/1884)

Kaipolohua Village, from the Legend of Pamano.

Kahikinui, in Maui, is the land in which Pamano was born; in the village of Kaipolohua. Lono was the father of Pamano and Kanaio was the mother. The brother of Kanaio was Waipu...

The reputation of Pamano as a singer and chanter, after a time, spread over the land of his birth and at last it reached Koolau [Koolau is mentioned as a person so prominently a little further on in the story that I rather think this refers to him rather than a place and would a place on the Kona side be called Koolau? EPS notes] in the uplands of Mokulau, located in the middle of Kaupo.

Koolau in this tale is a village in the district of Kaupo, adjoining Kahikinui, not the windward district of same name.

Ku'i aku la ke kaulana i ka le'a, a lohe o Koolau i uka o Mokulau, e waiho lai waena konu o Kaupo.(Fornander Collection of Hawaiian Antiquities vol. 5 pt. 2, pp. 302)

Site 1234, Kaipolohua Cave. A very large lava tube identified by Manu (Kuokoa 2/23/1884) as the cave of Kaipolohua. The vegetation is koa haole and Apple of Sodom bushes.

The cave is 56m long, 3.6m by 11.5m wide. No structures or cultural material were noted. Just outside is a 10m square enclosure--Mr. Voss says that it was built at the turn of the century as a pig pen. There is also a terraced platform and retaining wall. Mr. Voss has been told that a former minister of the nearby Kanaio church was buried in the cave in the 20th century. The smaller of the two terraced platforms may be the grave monument. (Hommon 10/31/1973)

A series of caves and associated walled structures. The *makai* cave is Kaipolohua cave, which drops down quickly from the entrance for approximately 15m. At this point the cave is actually an enormous cavern (possibly 16m x 14m), but a partial dike closes down most of the cavern except for a small access (5m diameter) to the back sections. Beyond the dike plug the cave again opens up, to the extent that access to the back sections of the cave are impossible without a ladder as the floor is approximately 5m below the dike plug. The cave appears to continue for at least 20m more, quickly tapering down to a much smaller cave which appears to continue for some distance further.

The entrance section has good soil and a tremendous amount of midden including torch remnants, mammal bone, coral and shell. There is a platform constructed of stacked roof fall material approximately 10m inside the cavern which may be the 'pastor's burial'. While the fall has been stacked into terrace units within the entrance, there are no other visibly unique structures within the cavern. This area would seem appropriate to the tradition that it was used as a school, especially as the terraced section, with the soil present, would fit Sam Po's description of "drawing pictures in the dust", especially as there does not appear to be any soil in the back sections which are too dark to see in at all. The cavern is very quiet and would be good in that there are limited distractions, especially important given the traditional educational pattern emphasizing detailed memorizing.

It should be noted that Fornander's notes indicate that there was not only a cave of Kaipolohua, but also a village of Kaipolohua; also that Pamano was not only born in this village (cave linked to his name), but also that his father was named Lono, his mother

Kanaio.

Mauka of Kaipolohua Cave a section collapsed at some time in the past and the open tube section, which has good soil and is protected from winds, has a number of walls, terrace units and paved areas. At the upper end of the open tube section is a very unusual ramped causeway that leads up to a series of paved terraces that appear to define a *heiau*. This is likely the Alahaloihi noted on the State map.

At the upper end of the tube section is a cave heading *mauka* which is the Pamano Cave. At the entrance is a large flat which has been recently (within the last 6 months) cleared of all brush and trees and has a recently-used firepit near the cave mouth. In addition a piece of multi-colored nylon (like a light tent cover) was rolled up on a stone shelf in one corner, with another piece located within the cave entrance. A number of recent broken glass fragments were also located in this area.

This cave is a much smaller one, with the entrance only being 1m high x 6m wide. The cave quickly drops down to 0.6m high for 10m. The flooring in this section appears to be paved, or at least cleared of much loose material. The cave then opens back up to 1m high x 4m wide for another 6m, now dropping at a gradual slope downwards. At this point it narrows out significantly back down to 0.6m high, but as the ceiling is very loose it was not investigated further. It would make an excellent small refuge cave but there were signs in the interior of past human occupation except for the possible clearing of loose material. It may be that the obvious entrance area made use of the cave very limited as it was too noticeable to be used for either burials or refuge.

Directly above the cave (on the capstone) is a large 2-tier enclosure. The lower unit is flat with good soil, the upper one appears to have several internal terraces. The walls are core-fill *a'ā* up to 1.6m high and 0.8m wide.

If the Kaipolohua Cave is linked to the chanter/singer Pamano, it is interesting to speculate that if that was because of that dike, as it would make an excellent stage platform. It really is designed or set up as a natural stage/amphitheater. It is worth noting that the upper cave, which is largely collapsed, is called Pamano. While Alahaloihi is given as a location on the State map, there is no indication as to how that name was acquired. (Bordner 6/23/1992)

109[G/Kanaio]: Manonokohala Heiau site 190 [B1-25] is located at Puki approximately 300 feet east of the church on level ground. It consists of an irregular platform that is 70 feet long with two levels to the interior. The makai front is three feet high, with a drop of three feet to the northeast portion. It is constructed of a'a block, ili'ili and coral. Drums are heard from this heiau. (Walker ms 1931)

Manonokohala Heiau, Walker site 190. The corner and front wall are visible immediately above the road. The abandoned house stands on heiau. Behind its out-house are many small segments of terraces.

There are additional unrecorded sites. Directly east of the abandoned houes on top of a small knoll is a walled area with two plumeria trees inside it. A plastic flower and the appearance of this site led us to speculate that this structure may enclose an historic graveyard. (L. Bruce 7/9/1972)

108[I/Kanaio]: Kohala Heiau site 189 [B1-24]. It is located south of the Kula Pipe Line 1/2 mile east of the J. Burns house. It is a rough platform of basalt blocks on end of a high ridge overlooking the sea and measures 53 by 34 feet. The front is a terrace 3 feet high extending 23 feet, but stone paving only goes 8 feet back from the front. The west side is faced but there are no free-standing walls. The hill extends on the level in front of the platform and some of the open space may have been within the heiau confines. (Walker ms 1931)

Kohala Heiau, Walker site 189. Tentatively found. It was hard to find as the area is very rocky and densely covered with lantana. Only part of a platform is visible. (L. Bruce 7/9/1972)

127[F/Kanaio, map A.I.5]: An enclosure located just downslope of the historic Site 217 enclosure, this features seems much older in construction and form than the other feature just upslope and to the East. The enclosure is of core-fill *a'ā* up to 2.3m high and 1.2m wide - a very impressive piece of near-vertical stacking. This enclosure is of a rounded shape but does not follow the slope contour. There is a single-course alignment outside of the Southwest corner, which extends for 2m then disappears, which measures 0.3m high and 0.4m wide. There are no visible interior features or midden within the enclosure. The interior is clear of loose material but is not level, and in fact has a strong downhill slope to the Southwest. (Bordner 6/10/1992)

121[F/Kanaio, map A.I.6]: A New Age ceremonial site. This site consists of a pair of features located just *makai* of the main highway near a large turnout. The upper feature is a circular stone alignment surrounding a small rock outcrop. The alignment has broken segments at the cardinal compass points. The feature is approximately 4m in diameter, with the alignment being of a single course of *a'ā*. The central outcrop was decorated with woven yarn braids, incense ash and a picture of what appeared to be a Hindu maharishi. The lower feature is connected to the upper by a well-worn recent

trail which suggests either large groups or frequent use. The lower feature is a very large natural lava tube section, which at the front entrance again had incense, yarn braid and several of the picture postcards. The cave is 3.5m high, 5m wide, and extends for at least 25m *mauka* and *makai*. A large number of footprints leading into the cave indicates that rituals must involve the cave proper. (Bordner 12/26/91)

The New Age site does not appear to have been used since last time, though there are a lot of indications of continued traffic down to the cave. I don't remember the *ti* and firepit just inside of the mouth of the cave from last time, but they both look pretty old (at least several months).

It appears that the ceremonial activity did not end, it just moved from the outside (upper) site down to within the privacy of the mouth of the cave. The cave continues for 20m downslope and then ends in an old rock fall. The cave is very impressive, with an average height of 3m and width of 4m, with large concentrations of nitrate crystals which in drip spots have formed short stalactites. There is a "pathway" down the right side (facing cave interior) with a single alignment of fall material, which blocks off most of the cave. On both the right cave wall (along a natural ledge) and on the stones making up the alignment candles have been placed every meter, appear to be squat votive candles.

The altar at the cave base must have been used recently as a votive candle (a very large one) was still burning. At this base altar, in large part consisting of objects placed on the fall that seals off the cave, is a large collection of votive objects. To the left under a natural ledge is a wood pole (sort of looks like a *kapu* pole but missing cloth), next to it is a very large giant clam shell full of water from a drip (the shell is brand new). At the altar front there are three levels of items: the lowest level (at floor) has multiple candles, a ceramic hobby horse and a ceramic butterfly. The middle level has candles and a new green coconut. The right side of this level has some lily stuck in the fall (placed upright). On the upper level is a Virgin Mary image, a Buddha image and a number of candles (the large one still burning is in this group).

The goods in large part do not appear to mirror those located in the secondary votive center located under the boulder at the cave entrance, which was limited to smaller objects and playing-card sized images (Indian/Christian), though the pattern of images seem to reflect the same religious patterns (i.e., Hindu, Buddhist and Catholic). The items at the secondary entrance center do seem to be the same (or are actually the same items) located at the upper site in December. (Bordner 6/6/1992)

107[H/Kanaio, map A.I.8]: Kauhuka Heiau site 188 [B1-23]. Located 1 mile east of J. Burns house above the Kula trail at an elevation of approximately 700 feet (at Kaunu Keaha). This heiau is a small platform of basalt blocks on top of a rocky knoll, and measures 15 by 17.5 feet, with an average height of 3 feet. It is likely a "Houlu ua" or rain shrine type as native said that whenever the clouds gathered over this spot is would surely rain. (Walker ms 1931)

Kauhuka Heiau, not found. We were unable to locate site 188. The slopes in the area have been recently cut with a series of horizontal bulldozer roads which obliterated this site. It is also possible we were not looking in the right location. Not until the end of the day did we find the "J. Burns house."

We concentrated our efforts in an area mauka and between the large eucalyptus grove and a water storage facility. (It was not a tank as marked on the USGS quad; from a distance it looked like a reservoir). (L. Bruce 7/9/1972)

The likely structure that is Walker's *Houlu'ua heiau* is located downslope and beyond the large reservoir. The site consists of a very large rock outcrop which has been modified with stacked boulders, some of which are extremely large. The outcrop drops 15m straight down in front, and a 3m high stacked platform has been constructed on top of the outcrop. The site is roughly triangular, with a leveled surface but no visible paving, though there are remnants suggesting that there was a higher triangular platform located in the middle. The site is 8m x 6m x 8m, with stacking 2m high on the *mauka* (upslope) face. The triangle is oriented so that the short base side is facing Keone'ō'io, and the point is directed to the Northeast. (Bordner 6/21/1992)

111[A/Kanaio]: Heiau sites(?), heiau at Kiipuna, Ninaulua nui. Located in the lava flows makai to the trail between Waiailio and Wahene are several large open platforms of ili'ili and coral and pebbles without walls. They were not seen [by Walker 1931], but were reported by Ben Aikala, but his information is not reliable as he confused heiau and burial sites. (Walker ms 1931)

123[B/Kanaio, map A.I.5]: A platform located along the Pōhākea trail at the edge of the *kīpuka* with good soil. While this platform initially appears to be a house platform, its location, and the presence of coral suggest that it likely served as a religious site of some form.

The platform levels out an area 5m x 2m and has several waterworn stones and the platform, two which may have been *abu* stones. The front facing wall is of stacked *a'ā* up to 1.5m high. In addition to the brain coral clumps, there are scatters of shell midden

at several spots (mainly cowrie). There is what appears to be an access ramp on one face the leads the trail through the center of the platform up the new flow (where the trail continues downslope). It is very clear that the trail intentionally runs through the platform and not around, which argues against the site functioning as a house site. (Bordner 6/8/1992)

112[A/Kanaio]: A well-built ko'a at Uliuli village[#207], which stands on the point a few feet back from the shore and measures 35 feet long by 10 feet wide, but with the end rather than the side towards the sea. A platform 3 feet high with large stones set on edge forms its borders. The top is fairly smooth with pebbles and flat stones. There are two pits on top and the south end is raised into a pile. At the south end is a low terrace which serves as a step platform. Another one is built at the southwest corner and has a long gray sandy-looking stone across the top where it joins the main platform. This suggests the stone "Lohe" mentioned by Emory at the Kula heiau at Kaunolu on Lanai. Coral is strewn only on these 2 step platforms. (Walker ms 1931)

122[F/A'uahi, map A.I.15]: A series of very impressive walled terraces enclosing a knoll. The knoll contains *wiliwili* on top, and a substantial *wiliwili* forest grove in the gulch that runs by the knoll. In addition heavy vegetation is on the west side of the knoll, including a very large *kukui* tree, which suggests a permanent spring of some sort at the base of the knoll. While there are some pieces of wrought iron scattered about the site, the quality and size of the stacked and core-filled construction appears not only to be pre-contact, but this site is massive enough to have been a *heiau* rather than a habitation site. Some of the retaining walls are upwards of 2.8m high with vertical facing, while the free-standing core-fill walls are upwards of 2m high in certain locations. There is what appears to be a small (30cm high) *ahu* stone placed at one face of the central platform, but there was no coral nor midden noted at this site. (Bordner 7/19/1991)

113[A/A'uahi]: Heiau at Auwahi, site 185 (A37-12), located west of Lualailua Hills 50 yards south of junction of beach trail on the west bank of a gulch. It is a small heiau built of rough lava blocks, measuring 50 by 60 feet. A low wall surrounds the inner court. At the north end is a platform 4 feet high. There is a smaller platform at the other end with a pit in it. (Walker ms 1931)

114[A/A'uahi]: A heiau at Makee, site 187. This heiau is at the village site of Makee at the shore, 75 yards above the trail. It is a small heiau 60 by 30 feet, of the walled enclosure

type with a high open platform at the south end. On the east and north sides are walls 6 feet thick and 8 feet high. At the southeast corner is a hole opening into a tunnel which extends under the platform. The sides were walled with rock but the hole was too narrow for a man to crawl into with safety, as several large rocks had already fallen in, but nothing could be seen inside. This platform, 25 by 30 feet and 5 feet high was paved with pieces of *a'a*, coral and pebbles. Part of it had been torn away on the south side to build a modern cattle wall. A small narrow enclosure is shown against the east wall in the plan. (Walker ms 1931)

182*[H/LHills]: Site 182 (A37-7) is a heiau in Lualailua Hills ahupua'a located on the north side of hills near trail which comes up from the southeast. It is a small heiau in the a'a of rough construction made of basalt chunks and ili'ili. No pebbles, but some pieces of coral found. It is notched and shaped and measures 38 by 23 feet. It is walled all around to a height of 2-3 feet inside and about the same in thickness. The highest part outside is south side, where the wall has been built up to 7 feet. A rough pavement covers the interior and at the east end a low platform 6 inches high occupies the space between the walls. The entrance is at the seaward side. A tiny enclosure 3 feet square and about the same height has been built into the corner of the jog on the outside. Naio branches and stones cover the opening, but only a large chunk of coral was found. (Walker ms 1931)

186*[H/LHills]: Heiau at Kohaluapapa, site 186 (A37-8), located northwest of the hills on a high shelf of land. It is a large walled structure of irregular plan, with a total length of 110 feet. Construction is of massive basalt with ili'ili, pebbles and coral scattered plentifully everywhere. Walls are massive, 6-8 feet thick and 4.5 feet high at the west. The south side is terraced in 2 tiers on the rocky hill, and is open to the sea. Four main enclosed courts can be seen. A is unpaved, B is the central court rough paved where the principal ceremonies were likely carried out. At the west end are 2 pits or depressions without stone lined sides. C is a smaller enclosure probably for a house of some kind. The east wall is 6 feet high. Between C and D is an open platform terrace approximately 2.5 feet above the level of D. D is a large court with a high wall on the east side and a low wall at the front, below which is a second step terrace 5 feet high. The west end is open, there being no definite border but a large rock on which are some pebbles and ili'ili, perhaps an altar of some kind. Adjoining the heiau are a series of walls forming irregular enclosures extending to a large dwelling site on the point, which may have been the house of the Kahu. (Walker ms 1931)

183*[A/LHills]: Kaluakakalioa Heiau, site 183 (A37-3), located above the village site of Honamuuloa near the water tank at approximately 300 foot elevation. It is a good-sized walled heiau 48 feet square. The walls are built of massive blocks of basalt to a height of 6 and 8 feet. They are 6 feet thick and have image holes in the top. The interior is divided into a lower and an upper court, each with its low terraces. The lower court is paved with flat slabs, coral, pebbles and cinders. The northeast corner is the highest part of the interior. (Walker ms 1931)

184*[A/LHills]: Site 184 (A37-6), located along the shore 75 yards from site 180. It is a small L-shaped heiau measuring 25 by 25 feet. Built of slabs of basalt some of which are placed on edge in a wall 3 feet high. On the seaward side is a step-terrace built of coral. There are low terraces in each arm of the L with chunks of coral scattered over them. The small square hole in the corner contained bits of sea urchin and other shells. (Walker ms 1931)

119*: Momoku heiau--Lualailua is the ahupua'a. Momoku was the heiau that was built by the menehune at Ka-papa-iki. That was one of the heiaus built by the gods of this race of people (the Hawaiians). (HEN vol. 1, 10/13/1885)

Habitation Sites

201: After Ma^{u}hu came to Hale'ahu--a wealthy native Ku-lani-paha'a lived here. When he died people dug up his property looking for money (none found). (Po interview 1966)

202[A/Kalo'i]*: Kalo'i house sites. Below trails and in vicinity of Black Sand Beach--a number of nice house sites. Behind are wells. (Sinoto ms 12/22/61)

Site 1238, the Wawaloa complex, in Kalo'i near Kanaio. It covers 20 hectares. It contains a probable heiau, 3 pahale (house enclosures), 14 wells, 2 lava bubble shelters, a ko'a (fishing shrine) and 9 ahu. This site contains the shelter excavated by Chapman and Kirch in 1966 as Bishop Museum site Ma-B2-1 and Ma-B2-M8. (Connolly 9/12/1973)

203: Also in the vicinity [of the heiau #104] are house sites, and semi-circular walls (for sweet potato). Against the lava bluff are shelter caves, on top of the a'a flow are walls forming shelters. The area is surrounded by an a'a flow (and is apparently an old pahoehoe flow). The old trail must run from here to Kanaio village--see Hawaii

Territory Survey Map 1929. (Sinoto ms 12/22/61)

256[F/Kanaio]: A series of "cupboard *pukas*", cleared areas and a enclosure, all mixed in on a low section of *a'ā* flow just Kanaio-side of the *ahupua'a* boundary wall. The entire site is very knocked about and appears quite old. The main features are hard to distinguish as everything is so kicked around, but the main feature is a series of single-alignment '*puka*' in the *a'ā*, usually 30cm square that appear to be for planting. There are at least five, mixed in with small vague enclosures around 1m square, again single alignment. They enclose clear and level areas with *a'ā* flow, but no soil. The vegetation in this area is heavy so water must be present but there is no visible soil. At the *makai* end is a very nice trail running *makai*. (Bordner 6/12/1992)

266[F/Kanaio, map A.I.11]: According to the map locations this site should be the Kanaio Mauka complex noted by Hommon: however, other than the vegetation the description does not apply. In fact Site 204 is obviously the complex noted, which was mislocated on the maps. Site 266 consists of a series of C-shaped shelters, enclosures and related walls in an area of new lava flow. The majority of the site appears to be enclosed planting areas, with stacked *a'ā* walls up to 1m high. The lower section, which is in area of limited soil, appears to be small habitation enclosures. A gulch flows into a *kīpuka* with good soil and relatively dense vegetation, and several of the walls appear to act as water control and diversion features for this gulch. There are several small caves in the immediate vicinity which have good vegetation and insect life, suggesting that water is persistent at least underground in the area. (Bordner 12/24/91)

264[F/Kanaio]: A platform on a knoll to the West of Site 204, at roughly the same elevation as the upper portion of Site 204. The platform is constructed of stacked *a'ā* up to 2m high on the front face. The top has small *a'ā* paving and is level. There are numerous mounds in the area, both on the rise and downslope that appear to be planting mounds. (Bordner 6/14/1992)

204[F/Kanaio, maps A.I.16, 19]: Near to heiau Ho-2 [site # 106] are some abandoned house lots of fairly recent times. Old trail must come through here. (Savage and Tompkins ms 11/61)

Kanaio Mauka complex, which consists of an early historic houselot complex in an arid area. There is sparse lantana, koa haole and Apple of Sodom bushes. At the northeast corner is a thick tangle of fig trees. There is a large terrace platform and at the

northeast end is E.P. Sterling's site HO-2(Ma-B1-13). The complex measures 105m from east-west by 70m north-south. It is constructed of a'a, mostly on flat ground or base of a 5m high cliff. It has historic and pre-contact artifacts.(Hommon 8/15/1973)

Site 204 is a very large complex of habitation, ritual and agricultural features of which the uppermost portion has been destroyed by the main road. The site consists of two main sections, the *mauka* one located around a sharp ridge flat which contains a sink with a possible spring. The lower portion, which is located nearly 30-40m *makai* of the upper portion, is based around a *pāhoehoe* flat which also appears to contain a sink with spring, though both appear dry at present.

The upper section contains the following features: A: a small enclosure on the ridge just to the West of Site 263 and *mauka* of the cluster of modern houses. It is constructed of stacked *a'ā* u to 1.8m high, 0.4m wide, and measures 2.5m x 4m in an oval. The interior is clear and flat, and there is cowrie shell midden just outside of the feature. B: a platform with *ili'ili* paving and a front facing 0.7m high. C: is a small paved area of *ili'ili* with a facing of 0.4m high. D: is a walled enclosure with a clear and level floor. The wall measures up to 2m high (inside), 1.4m high (outside) and is of core-fill *a'ā* up to 0.6m wide. E: is a large flat area with a partial retaining/boundary wall on the low sides (South and East). On the East side it is a boundary wall up to 1m high (the windward side). The interior is part of a larger flat with soil, the whole being clear and level. There are two trees (fig?) in the *mauka* end wall. F: [Site 106] is a very impressive stacked *a'ā* platform with facing walls up to 2.3m high enclosing the back side of a high spot on the knoll with at least three apparent postholes. This feature appears to be a *heiau* given the size of the feature and the quality of construction.

G: is a pair of mounds of *a'ā* (mainly fist-sized) of possibly cleared material from the flats up to .4m high. H: is a very well-constructed enclosure which has had the *mauka* end destroyed by the main road. It is constructed of core-filled *a'ā* up to 2m high and 0.5m wide. The interior is clear with deep soil. There is an extension of the enclosure into a low sink area with very lush vegetation and a possible spring (now dry). I: a partly-paved platform outcrop overlooking the upper portion of the site. There is no facing as it a built-up natural ledge which has been leveled. A well-constructed trail (typical of those in this area - see Site 611) leads down from just upslope (to the Northwest) down to the site, with a windward retaining wall (single-stack stone) as per the Pöhäkea Trail construction.

J: is a walled enclosure overlooking the trail (and "I") from the high point on the knoll. It has a front facing up to 1.5m high (outside) and 0.4m (inside) of stacked *a'ā*. A boundary wall follows the ridge spine from "J" on the ridge *makai* for over 100m

downslope. It is constructed of stacked *a'ā* up to 0.6m high and 0.4m wide. K: a walled enclosure of stacked *a'ā* up to 1m high and 0.8m wide. L: a walled enclosure of core-filled *a'ā* up to 1.3m high and 0.8m wide. M: a very impressive walled enclosure of core-filled *a'ā* up to 3m high and 0.7m wide. It is constructed on a rather steep slope, and the interior is steep and does not contain significant amounts of soil.

The lower portion of the site is located approximately 35m *makai* of feature 'M', and appears to enclose a low that possibly contained another spring (now dry). All walls in this section were of core-fill *a'ā* construction. No midden was noted in most of the site. Many of these features in the *pāhoehoe* flat have had low sections filled with *a'ā* to level out the interiors. Boundary walls extend out from the site in all directions for many meters beyond the formal end of the interior features.

Mauka of the main road the site continues for approximately another 200m. From the road to this location there area numerous mounds and amorphous rock piles but the only distinguishable feature is O: a rectangular enclosure. The enclosure measures 2.5m x 3.5m and is badly collapsed. The walls are of core-fill *a'ā* up to 0.6m high and 0.8m wide. The interior is clear and level and has good soil. This section, though merely on the *mauka* side of the main road from the rest of the site, has much denser vegetation and there seems to be a lot more water. This is emphasized by a number of deep erosional gulches that run through this area, as this section appears to be the major drainage for the spectacular gulch/canyon that runs downslope from the Goodness Estate. (Bordner 6/12-14/1992)

251[G/Kanaio, map A.I.18]: A complex of core-filled boundary walls, enclosures and platforms located on a ridge overlooking a well-watered flat pasture area at the Kanaio-Kalo'i *ahupua'a* boundary. This complex also contains what appears to be the Papanuiokāne *Heiau* (site 103) in a series of enclosures and walls in the lower pasture area. A pair of gulches which carry a considerable amount of seasonal water bracketed the ridge, the one to the west apparently being the boundary definition for the *ahupua'a* division between Kalo'i and Kanaio (this gulch watering the flat pasture area containing Papanuiokāne *Heiau*). The walls on the ridge tend to meander on slope contours, often forming small enclosed areas then continuing on. In most cases the large boulders on the ridge are incorporated into the walls.

There are a large number of cleared and leveled areas, most with soil, though several are paved with *a'ā ili'ili* paving. The site continues down to the main highway but does not appear to have extended to the *makai* side of the main highway. The walls are up to 1.5m high, though the average is approximately 1m high. A pair of more linear

boundary walls extend off across the pasture to the northwest, the *mauka* one of core-filled *a'ā* up to 1.4m high is linked to the complex of enclosures including Papanuiokāne Heiau. The *makai* wall is of stacked *a'ā* up to 0.9m high and eventually links up with a barbed-wire fence which defines the pasture area.

The major section of the pasture has been terraced as units are still visible, but has apparently been cleared during the historic period as walls stop and the terraces are not faced. It is likely that prior to this clearing that the lower portion of the pasture was a continuation of the complex of walls and enclosures still extent in the *mauka* portion. (Bordner 12/29/91)

214[A/Kanaio]: Site 1002, Alaha Village complex. This is Bishop Museum site B1-1-22, and is a village site with enclosures, platforms, spring, agricultural pits and an indeterminate ko'a.

It is called Wakalani in the place names, southeast Maui, collected from Sam Po in 1966-1967 by Chapman. The site is at the beach end of the jeep road, around a small bay at the edge of the a'a flow at the beach. The vegetation is kiawe and lantana.

There are 36 features both pre-contact to historic cattle pens at the site. It is unusual in that there are no readily identifiable religious sites. (Connolly 7/11/1974)

265[I/Kanaio]: A partial enclosure (a portion has been destroyed by a jeep road) located near the Buddhist temple. It is constructed of stacked *a'ā* up to 1.6m high and 0.6m wide. Worked into the top section of the wall are a series of reinforcing wood fence posts and 2-strand barbed wire. The interior is clear and level. The section remaining is 8m x 19m. There are a number of rusted 55 gallon drums in the Northeast corner. It is very likely a historic habitation site but there are no surface indications of a structure within the enclosure. (Bordner 6/15/1992)

220[I/Kanaio, map A.I.7]: A well-stacked U-shaped wall up to 1m high. It is an apparent habitation area that is pre-contact in construction, well-stacked and with no visible midden which uses a cliff face as the back side of the shelter. Given prevailing winds it would have been a good shelter but there are other locations nearby that are equally suitable which so no indication of prior human use. The facing on the cliff face is used to develop a level platform on the cliff top which also has a protective wall on the *mauka* side. The platform is cleared and leveled. (Bordner 7/4/1991)

221[J/Kanaio, map A.I.7]: A historic(?) house site located at 1365m in upper Kanaio. There is a circular, well-stacked *a'ā* platform approximately 3m in diameter, with wood beams fixed into the base, which appears to be a water tank. Nearby is a well-built walled enclosure and a cleared pasture to the southeast. The walled enclosure is approximately 12m square, with some clearing of the interior, with walls of stacked *a'ā* up to 1.5m high. At the southeast corner is a cleared and paved (with *ili'ili*) section. Outside of the enclosure at this point were several wood blocks and historic bottles). At the north center of the interior is a mortared trough, either for use as a toilet or water trough. On the north wall was a green-glass gin bottle fragment from 1840-1900.

The pasture below is well cleared and has been terraced at some time in the past. Possibly was originally agricultural and later converted to pasture. In the center of one pasture terrace is a triangular wooden frame with 2x4 wood framing, nailed, with a metal water pipe protruding up through the frame side. In a corner nook of the same pasture unit was an old steel automobile wheel with two welded-on rebar handles and three welded-on rebar feet. The center has been burned out by high heat, and this is likely a charcoal holder for branding irons.

This was later corroborated by the Erdmans who noted that this was a 'lineman's house' that was used in the past for branding and corral work in upper Kanaio, though it burned down a while ago. (Bordner 7/4/1991)

222[J/Kanaio]: A possible remnant wall as front-facing on a bubble for use as a shelter. Difficult access as tube is nearly vertical and base is almost 6m down. No midden or other cultural material noted. (Bordner 7/4/1991)

213[A/Kanaio]: Site 1800, "Waiakapuhi". On Coast near Waiakapuhi. Primarily platforms/terraces or a'a chunks. Well-built and very well-preserved. Agricultural terraces, walkways, platforms--very nice from helo[helicopter] photos. (Hommon 12/5/1977)

252[E/Kanaio, map A.I.11]: A very large enclosure and a series of associated c-shaped shelters located below Pimoe. The large enclosure is of excellent *a'ā* stacked core-filled construction, with walls up to 1.8m high. While the enclosure may have served as a corral, the low *makai* wall and leveled and cleared interior would suggest either a high-status habitation site or a *heiau*. The enclosure is located at the front face of a significant elevation drop-off and thus has a superb view of this whole section of the coast over to Hokukamo to the east and Pu'u Olai to the west. Outside of the enclosure and

to the east are several short wall fragments of stacked *a'ā* which lead to a C-shaped shelter oriented as a windbreak. This feature incorporates a natural outcrop into a cleared area 2.3m long. Approximately 60m to the northeast is a second enclosure which has been heavily damaged, very likely by military use as it is located within the National Guard Ordnance Disposal Zone. It is of core-fill *a'ā* construction up to 1.3m high and measures 7m x 4m. (Bordner 12/24/91)

216[A/Kanaio, map A.I.5]: A series of very collapsed walls and enclosures just to the West of the Pōhākea trail in a scrub *kīpuka* with good soil and relatively level. All the features are very vague, though they appear to have been of core-fill *a'ā* up to .7m high (now usually .3m high) and 1m wide. While most of the walls appear to have defined planting areas, several of the enclosures may have had interior paving and appear to have been house sites. (Bordner 6/8/1992)

205[A/Kanaio]: Sam Ka-lani-paha'u (his brother) built a grass hut near the cave Ku-Wai-a-ka-'ilio. (Po interview 1966)

Waiailio Village #2. Located at the foot of Kanaio trail.

The site contains 15 house sites, pens, canoe sheds and other enclosures. There is the only example of a stone house with a grass roof still in place. Built close to the water's edge on a platform 3 feet high, measuring 25 by 40 feet. The house is 15 by 30 feet, 5 feet high with walls 3 feet thick. The edges of rafters rest on the top of the wall, and the ridgepole is 10.5 feet from the ground. Shells, coral and pebbles litter the platform. The door is only 4.5 feet high. Recent occupation (nails, bottles and trash)--also rotten pot-pounding board and outrigger. Beams in the roof were nailed, not lashed. Original owner was Kalani Pahoa [Kalanipaha'a] (died recently [1931]) but the house represents the type probably common in windy Kahikinui. Well of brackish water near the house. Neighboring enclosure possibly for canoe.

On the trail up to Kanaio 12 house sites seen, located on grassy bench among the lava flows, and several cultivation patches (potato likely).(Walker ms 1931)

Site 1481. Kanaio Waiailio Complex. On the coast, makai of Hoapili trail (8/73). Bishop Museum site #B1-39, Walker Waiailio Village #2. "...a complex consisting of 35 features in a 144 acre (approximately 120m x 120m) area. Canoe shed noted by Sterling (1962). Name of complex is Kanaio Waiailio, according to William Kauai Jr. of Ulupalakua. Located east of Alaha complex (50-14-1002), west of Makee complex (50-14-1472) and southeast of Pimoe cone. Most features on barren a'a lava around and within a small, steep-sided depression (approximately 38m x 22m) that opens on the

shore. Sparse vegetation--includes kiawe, lantana, sisal and a few native plants.

Surface midden in 22 features. Features unusually densely concentrated. Two house platforms--includes Walker's thatched roof house. Also well, enclosures, trails, walls, platforms, canoe shed, salt pans. (Historic Sites files, 8/1973)

Kanaio Makai is a series of platforms in stepped terraces, several enclosures and a series of stepped platforms that end (*makai* end) in two enclosures. The *makai* enclosure is full of coral - looks like a *ko'a*. Several of this series of terraces appear to have knocked-over *abu* stones in terraces. Several improved blister-shelters, one probable water cave with protective wall and an excellent piece of the Pi'ilani Trail are also within this site. The canoe sheds were not located, but given the swell and chop conditions taking canoes in and out of this spot would be difficult at the calmest of times, and impossible most of the time. This embayment is very exposed in almost all conditions, and the slightest wind will combine with the constant swells to produce a vicious chop that would wipe out any canoe light enough to be lifted ashore (as there is no beach) and there does not seem to be any protected areas which would provide a safe landing.

All platforms had extensive midden - largely drupa and cowries shell with some cone, a bivalve and some wana (sea urchin) body parts (no spines noted). Basalt flakes were noted on several platforms, as were a number of possible hammerstones. The large number of *abu* stones is noteworthy - all are waterworn, ovoid, 60-90cm high, and located at the front edge of each platform. All have been knocked out and broken at a more recent time (except one still in place). The flats all have excellent soil and the presence of the kiawe groves suggest water. (Bordner 7/8/1992)

254[H/Kanaio]: The Goodness Estate. This is a series of structures on both sides of the upper Kanaio road. On the *mauka* side of the road is a garage fronting the road and a small shed approximately 10m *mauka* of the garage (upslope). The main house is *makai* of the road and oriented facing the road. There is a subsidiary house (looks more recent) approximately 15m downslope to the Southwest. There is excellent wall stacking on the boundary and retaining walls. There is a lava bubble shelter 4m Northwest of the lower (secondary) house but there was no visible midden. (Bordner 6/11/1992)

263[F/Kanaio, map A.I.8]: A small walled and terraced enclosure located on a ridge just *makai* of the main road and 15m Northwest of Site 262. This is a very well-made feature as a very steep talus slope has been stacked and faced in two levels to form the structure. The enclosure measures 4m x 5m. The wall measures 0.9m high and 0.5m wide, of

stacked *a'ā*. There is a large mound of *a'ā* 7m to the West-Southwest of the enclosure which has been somewhat leveled. It measures 4m x 6m and is 0.6m high. This may be field clearing as there is no visible signs of facing on the mound sides. (Bordner 6/13/1992)

262[F/Kanaio]: This partial walled platform is located on the next small ridge approximately 30m to the West of Site 261 at the same elevation. The wall is on the windward and *makai* faces of the platform, constructed of stacked *a'ā* and measures 1.1m high by 0.4m wide. The platform has a front facing up to 0.3m high. The platform covers 4m x 4m with *a'ā* paving within a flat area of 6m x 8m defined by ridge spines on the lee side (West). The interior is fairly clear and level. There is a very large mound of *a'ā* 5m to the West-Southwest. The mound measures 4m x 7m up to 0.7m high. (Bordner 6/13/1992)

261[F/Kanaio]: A walled enclosure West of Site 260. It measures 5m x 4.5m, and has walls of core-filled *a'ā* up to 1.6m high and 0.6m wide. The interior is flat and clear with good soil. (Bordner 6/13/1992)

260[F/Kanaio]: A terraced platform on a knoll 10m *makai* of the main road on the same road (but *mauka*) of Site 259. The platform covers a large area - up to 16m on the *makai* face, with a stacked facing up to .4m high. Retaining walls on the ridge side go back for 7m and are faced up to 1m high. The platform interior contains soil and there is fragments of what may be a smaller interior platform but it is too damaged to be sure. There is a very well-constructed boundary wall downslope to the West, which curves up from the Southwest (*makai*) over to climb the ridge just *mauka* of this platform. This wall is core-filled up to 1.8m high and 0.5m wide. (Bordner 6/13/1992)

259[F/Kanaio]: A partially-walled platform (with the wall on the windward side) located just one ridge top to the West of Site 258 at the same elevation. These sites would make excellent lookout points, as they have an open view of the entire coast from Keone'ō'io over to Pōhākea. However there are even better locations just *mauka* of these which do not show any signs of human modification. The wall is of stacked *a'ā* and is 2.5m long by 0.5m high and 0.6m wide. The platform is 2m x 3m with front facing of stacked *a'ā* up to 0.4m high. The platform interior is clear but not particularly level. (Bordner 6/13/1992)

258[F/Kanaio]: A walled enclosure on a knoll below the main road. The walls are constructed of core-filled *a'ā* up to 1.9m high and 0.6m wide. The enclosure is rectangular and measures 2.5m x 3m, and has an entrance in the *makai* face. (Bordner 6/13/1992)

257[G/Kanaio, map A.I.8]: West Kanaio complex. This is a large complex of agricultural and habitation features located to the west of the Honua'ula Church and *mauka* of the Site 126 Kaipolohua Cave complex. The lowest (*makai*) section consists of a series of agricultural features in a draw. The soil in this area is excellent, is at least 30cm deep, and has been recently torn up by pigs. The agricultural walls are of stacked *a'ā* up to 0.6m high and 0.5m wide. A habitation platform is of leveled talus with a .5m high front face, and covers approximately 1.5m x 2m.

Mauka of this series of features the slope levels out, and there is a complex series of well-built boundary walls that appear to enclose sections of the flats but also go *mauka* (upslope). The walls are mixed core-fill and stacked, up to 1.9m high, with the core-fill sections of noticeably better construction. One enclosed area has a grove of *ko'a* with very deep soil and a spring and there is very dense vegetation and very moist soil. Scattered throughout are short wall sections that are possible agricultural terraces or mounds, but they are so kicked about (probably by cattle) that they are indistinguishable now.

On the ridge that leads to the spring/*ko'a* grove, at the West edge of the site, is a series of faced talus house platforms on the ridge face. The front faces are 0.7m high, and the terraces measure approximately 2m x 2m each. A core-fill boundary wall running on the ridge from these platforms measures 0.6m high and 0.5m wide.

There is a complex series of agricultural terraces that cover the West side of the gulch. While the East side has some, they are not as prevalent. The West bank is terraced all the way down to the streambed, usually the facing of 1-2 courses of stacked *a'ā* up to 0.4m high. The flat areas are level and clear, and usually measure from 1m x 2m to 2m x 3m. (Bordner 6/12/1992)

233[H/Kanaio, map A.I.5]: A rectangular enclosure that appears older than the boundary walls in the area. It is located on a sheltered rock outcrop between two higher ridges. It measures 4m x 5m, with a front face up to 0.6m high. The front facing is actually a faced talus slope of natural material. The interior is clear but not level as the enclosure is on a slope. There is a possible entrance ramp at the front (downslope side). (Bordner 6/11/1992)

234[H/Kanaio]: A stacked *a'ā* platform that apparently was constructed as a base for a water tank, which has a 3/4" pipe going downslope to a historic housesite at the base of the slope. The platform is 1m high in front, well-stacked and level. The platform is circular, with a 3m diameter. (Bordner 6/6/1992)

215[H/Kanaio]: *Mauka* of L. Bruce's "walled structures", located on a knoll approximately 4m 'Ulupalakua side of *mauka-makai* boundary wall. It is a small 4m x 3m rectangle, corefill *a'ā* up to 1.5m high, 0.5m wide with no visible entrance. The interior is clear and level. There is no visible indications that was a *heiau*. (Bordner 6/6/1992)

217[F/Kanaio, A.I.5]: This platform is oriented *mauka-makai*, and measures 3m x 6m and 0.3m high. It is constructed of stacked *a'ā* leveled with smaller pieces but no *ili'ili* paving, nor is there any visible cultural material. It is located on a knoll with an excellent view of Kanaio town and *makai*. The downslope area is barren, likely due to soil conditions, as this area consists of a very large granular ash and would seem to be very poor for planting unless crushed. Approximately 6m to the West is a large historic enclosure which measures 15m x 18m, with walls of core-fill *a'ā* up to 1.5m high and 0.6m wide. In the West center of this enclosure is a mortared stone cistern 2m in diameter and 2.5m deep. The whole interior of the enclosure has scattered historic midden of flat glass (old) and white ceramic. The interior of the enclosure is clear of loose stone but not flat as there is a fairly strong slope down to the Southwest.

To the West of the lower enclosure (Site 127) are a series of very fragmentary wall sections from 1m to 3m long of stacked *a'ā* up to 0.4m high and 0.5 wide. They seem to delineate sections of flats with soil for planting areas, but most of the walls have been destroyed or cleared out except on outcrops. (Bordner 6/10/1992)

206: Uliuli village, located near the point of Kahawaihapapa. There are 21 different sites of different kinds counted here, 11 identified as house sites. Several large enclosures with low walls, and house platforms inside measuring 25 by 15 feet. May have been the homes of chiefs, or one or two may have served as heiau as no definite heiau structures were seen in this region.

A well built ko'a stands on the point a few feet back from the shore.... This suggests the stone "Lohe" mentioned by Emory at the Kula heiau at Kaunolu on Lanai. Coral is strewn only on these two step platforms.

The ruins of the old windmill pump and trough may still be seen, but the large square stone base on which the windmill stood should not be mistaken for a heiau

structure. North of the windmill 150 feet is a great hole in the ground which is the entrance to a lava tube, in which under the windmill is the spring of fresh water which has the name Waiailio. The story is told of a old woman who lived a mile or so from the shore who had a little dog that often used to disappear and then come back wet and muddy. As there was no water near her house the woman became curious and decided to watch where her dog went to find the water. She noticed the dog disappeared into a small hole in the rocks, and attempting to follow she found herself in a large tunnel which led down to the shore. By following it she finally found the spring. The story does not seem so fanciful after one has seen the tube. It appears to extend indefinitely off toward the mountain, but was only followed seaward to the spring. As there are houses with stone walls and part of the timbers are still in place, it is not surprising to learn from Kaupo natives that this village had been inhabited till 35 years ago.

Salt from the sea spray collects in small pools on top of the rocks near the spring[#602], and the spot was often visited by natives from distant places in order to procure the salt. (Walker ms 1931)

255[I/Kanaio]: A U-shaped shelter which measures 2m x 3m, with a stacked *a'ā* wall up to 1.8m high on the Northeast side. The interior is clear and fairly flat. There were no associated visible features. (Bordner 6/11/1992)

240[E/Kanaio]: A pre-contact and early historic house site on a high knoll. The major feature is a large core-filled *a'ā* windbreak wall up to 1.8m high that extends for 14m to protect the flat top of the knoll. On the lee side are two cleared and leveled terrace units paved with *a'ā ili'ili*. Both on and around the terraces are shell midden (large Drupa and Cowrie), coral abraders (5), sheet iron and zinc roofing and flashing, cut and sawn hardwood, 19th c. ceramic and pre-1880 glass fragments. A hand-built and stacked reveted roadway leads directly to the site and an enclosure-pen complex down at the base of the knoll in a gulch. The roadway lead back towards Lualailua Hills, and has a wall boundary for a section. This wall, of poorly stacked *a'ā* then veers away to the south and the base of an adjacent knoll. (Bordner 7/23/1991)

239[E/A'uahi, map A.I.12]: A series of C-shaped shelters and enclosures in older flow material. The walls are of stacked *a'ā*, and have been heavily collapsed, likely by the very heavy goat traffic in the area. (Bordner 7/23/1991)

241[E/A'uahi, map A.I.12]: A series of enclosures and habitation areas on a knoll next to a very large gulch that must have seasonal heavy water flow due to the lack of internal vegetation. The walls are of stacked *a'ā* in poor collapsed condition. *Mauka* 20m is a lava bubble shelter 1m high, 0.6m deep and 1.5m wide. Just downslope of the shelter are a series of cleared and leveled areas with *a'ā ili'ili* paving. Both the shelter and associated paved areas contained coral fragments, though they were too degraded to specify as tool fragments. (Bordner 7/23/1991)

207[A/A'uahi]: Makee village, site 187. Makee is the site of a larger village and heiau described as site 187. Extending back from the shore, eleven large dwelling sites were seen. A dwelling site is a platform or enclosure within which are one or more house platforms and smaller enclosures presumably part of the same establishment. A fine example of a site of this kind is located on the highest point of the village. The terrace is 60 feet long built up 9 feet at the front. A wall 7 feet high bounds it on the east, and forms a small enclosure on the north. The house platform is 14 by 30 feet raised 1.5 feet above the terrace. It is paved with pebbles and coral, and in the center is a firepit. This was in all probability a chief's house. (Walker ms 1931)

Site 1472, Makee Village complex, covers 4 hectares. The complex contains houseyards, a rock shelter, platform and burials on the coast. It continues inland 300m. The terrain is rugged, with numerous a'a outcrops and there is a small gully at the east end of the complex. Makee has 52 features with houseyards, rectangular and circular enclosures, platforms, a rock shelter, possible burials, trails and a heiau. The heiau is Walker's site 187 with tunnel. (R. Connolly 11/5/1973)

253[D/A'uahi]: A sink and nearby enclosure. The sink is a collapsed roof section of a large tube which still extends *mauka-makai*. The sink is very impressive, being approximately 15m deep, measures approximately 14m x 8m, and contains very luxurious vegetation including ferns and *ti*. Access to the base of the sink is by a very artfully worked stacked *pāhoehoe* slab stairway which is built out of the collapsed roof section. The tube has standing water and is muddy even in the exposed section, and the tube continues for at least 8m in either direction from the sink access. The enclosure is 9m upslope from the sink and measures 10m x 5m, with stacked *a'ā* up to .6m high. (Bordner 7/22/1991)

The cave runs to North for approximately 20m then has a combination of natural and artificial rockfall which acts as a refuge-type barrier. Beyond the barrier the cave runs for an additional 20m +, curving slightly to the Northeast. There are at least 8 different drip spots in North section, and very good loess soil even in the cave, with

excellent 1m+ deep cultural deposits in the area of the open sink section. The area was used during the historic period as iron, glass and plastic are present, and there are at least two recent pot-holes/test pits in the material.

The South end of the cave (beyond the sink) is naturally plugged (not from fall) and only extends for approximately 6m beyond the sink entrance. Again there is deep soil and a 1m+ cultural deposit with fish bone, bird bone and very large *'opihi*. On a side wall "shelf" were several hammerstones in conjunction with shell, bird bone, *'opihi* and dog bone. There is also an apparent ash deposit nearby. The whole area (both within the sink and the surrounding tube sections) have been artificially cleared with loose material stacked to the sides and all interior areas leveled. These modifications to have extended only into the area of natural light, as the North end does not have these modifications further in the cave. (Bordner 6/3/1992)

235[B/A'uahi]: A C-shape shelter of stacked *a'ā* up to 0.8m high and 3m in diameter which has been oriented as a windbreak. (Bordner 7/21/1991)

229[E/A'uahi, maps A.I.20, 21]: A large complex of shelters, enclosures, walled platforms and wall sections. The major structure, a large walled platform, is on a knoll overlooking a deep *wiliwili* forested ravine. The platform, which measures approximately 12m x 10m, contains several internal walled subdivisions, all cleared and cobble paved. Scattered in and around the platform were Japanese porcelain (blue-and-white ware), blown glass fragments (prior to 1900), sheet iron and large drupe shells. Two coral abraders were on an outer paving area. The walls are up to .8m high, with the highest sections on the northeast wall, which would take the main brunt of the strong winds. The central interior walled platform is 3.5m by 2m. Most of the interior is clear, as the majority of the midden was located either immediately outside or in the *mauka* platform area.

This site complex contains a minimum of four other shelters or habitation enclosures. The extensive network of core-filled *a'ā* boundary walls are irregular in orientation and do not follow slope contours. They appear to have served more to either restrict grazing animals or protect areas in gulches from the depredations of cattle and pigs. Low areas in seasonal drainages have much better soil conditions, and the majority at present are in *wiliwili* forest groves. In fact it seems likely that there is a relationship between the *wiliwili* and sweet potato cultivation. The *wiliwili* grows in areas of good soil, in low spots protected from the worst of the wind. The leaves and shade of the *wiliwili* appear to discourage most understory growth and also provide a comprehensive

humus layer. This combination of protected soils and limited competition would appear to be ideal for vine-type ground plants such as sweet potato, gourd and squash--the very type of crops that are noted as being the mainstay of crop production in Kanaio-A'uahi. (Bordner 7/13/91)

This is a large site complex located just *mauka* of Hokukamo, and consists of a series of walled enclosures, platforms, walls and trails. The complex is located in a *a'ā* flow next to a very large gully which appears to have water a large proportion of the time due to the lack of vegetation. There are at least 14 habitation enclosures and platforms, not counting a large number of cleared, leveled and paved areas without walls. A formal marked trail runs through the upper portion of the site from east to west. The site is enclosed in a series of boundary walls which extend off in all directions, and possibly delineate planting areas. The site has been partially destroyed by a historic jeep road, which has destroyed the major portion of a very substantial and well-built walled platform, which still contains a series of three levels of paved platforms with front facing up to 1.7m high and internal *ili'ili* paving. Very little midden was present on the surface except of several coral abrader fragments and some scattered shell (Conus sp.).

All walls in the complex are of core-fill *a'ā*, and much of the site consists of improved natural features in the flow. A unique feature is the large number of very small stacked holes in the *a'ā* as they are not deep enough to have been wells, and would appear to have been protected planting pits which usually measure only 0.4m in diameter. The lack of soil within the village area would argue that the complex must have been for habitation purposes, though the area outside of these features has much better planting opportunities. (Bordner 7/19/1991)

236[D/A'uahi, map A.I.17]: A series of walls, shelters and planting mounds on both sides of a jeep road. On one side is a series of stacked *a'ā* mounds approximately 2m x 1m oval in form around .4m high. They are scattered 3m to 7m apart throughout this entire section of a flat southwest of Hokukamo. The other side of the road has an pair of connected enclosures which measure 10m x 5m, with some internal walls. Approximately 8m to the east is a U-shape shelter of stacked *a'ā* up to 0.7m high which measures 5m x 3m. Scattered around these features are a number of planting mounds following the same form and spatial distribution as on the other side of the road. (Bordner 7/22/1991)

242[F/A'uahi, map A.I.6]: A series of enclosures and platforms on a knoll covered in a *wiliwili* grove. Most of the walls are core-fill *a'ā* and have been heavily collapsed by cattle. A few sections of platform facing as very nice and still intact. There is a possible historic road leading to the site, but this only continues for 8-10m and then disappears. As with other roads of this period it appears limited to areas of fresh *a'ā* or very difficult access, as when the land flattens out or returns to older flow material the road just ends. To the west approximately 20m is a second cluster of features, a series of terrace walls and shelters. Just beyond this second knoll to the west is a steep drop into a semi-active stream drainage, which though it does not contain water does contain a very dense vegetation pattern. (Bordner 7/25/1991)

243[G/A'uahi]: An enclosure and C-shape shelter constructed of stacked *a'ā*. (Bordner 7/25/1991)

244[[G/A'uahi]: A small enclosure on a knoll that overlooks much of lower A'uahi. The visibility is reminiscent of that for a *heiau*, but the construction is that of a habitation enclosure, being of stacked *a'ā* with cleared and leveled interior. (Bordner 7/25/1991)

245[F/A'uahi]: A C-shaped shelter oriented as a windbreak on a knoll. The feature measures 2.5m x 1.5m, of stacked *a'ā* up to 0.6m high. A cleared and paved area with *a'ā ili'ili* paving extends for 2m around the front of the shelter. (Bordner 7/25/91)

246[E/A'uahi, map A.I.12]: A historic house site, enclosures and associated boundary walls. The house is located near a gulch which seems to have a good seasonal flow of water given that it is clear of vegetation. A local informant said that the house had been used into the 1950's. This site is located approximately 400m *mauka* of the *240* historic house site. Boundary walls extend *mauka* almost to the main highway, while others extend along the elevation contour to both east and west. *Makai* and to the east of the house site the boundary wall converts into a well-constructed circular enclosure of core-fill *a'ā* 7m in diameter with walls up to 1.7m high. While there is no visible gate access there is a external stacked *a'ā* ramp to the *makai* corner. The boundary walls are of core-filled *a'ā* up to 0.9m high.

The house proper still stands and measures approximately 6m x 4m. It is constructed of 2x4 timbers and 4x8 sheet board with a peaked corrugated metal roof. There was no visible cultural material or midden at the site, nor any evidence of recent occupation. (Bordner 7/26/91)

247[E/A' uahi, map A.I.12]: A series of walled platforms situated on a new *a'ā* flow across the gulch from site *246* to the northeast. The platforms are situated on a knoll overlooking the gulch. The platforms have stacked *a'ā* front facing, with leveled and cleared interiors. (Bordner 7/26/91)

248[E/A' uahi]: A small triangular enclosed flat on a *a'ā* ridge. The enclosing wall on the west side of the flat is of stacked *a'ā* up to 0.7m high, while the east side is only 0.4m high with the two tapering into a triangular point at the *makai* end. The interior of the enclosure is relatively flat with two *wiliwili* tree inside. At the *mauka* end is a firepit with relatively recent fishbones. (Bordner 7/26/91)

249[E/A' uahi, map A.I. 6]: A pair of L-shaped shelters approximately 45m to the southwest of the *240* historic house site. The walls are of core-fill *a'ā* up to 0.5m high but have been seriously collapsed by goat traffic. (Bordner 7/27/91)

250[E/A' uahi, map A.I.6]: A C-shaped shelter on the side of a knoll. The shelter is constructed of stacked *a'ā* up to 1.4m high, with an interior diameter of 3.5m. (Bordner 7/27/91)

237[[D/A' uahi, map A.I.17]: A small platform of stacked *a'ā* which overlooks an agricultural planting area. (Bordner 7/22/1991)

238[[D/A' uahi, map A.I.13]: A series of enclosures, terraced platforms and bubble shelters. Most of the walls are core-filled *a'ā*. The complex continues over the top of a knoll and into the next swale. Nearby is a core-filled *a'ā* boundary wall. (Bordner 7/22/1991)

230[E/A' uahi]: A small C-shape shelter oriented as a windbreak but partially destroyed by a historic jeep trail. A second C-shape shelter and associated cleared and leveled area is located approximately 20m to the northeast of the first. Both are approximately 2m in diameter with a wall of up to 1.3m high. No midden was noted. (Bordner 9/19/1991)

231[E/A' uahi]: A C-shape shelter located on a *a'ā* knoll which may contain other ambiguous features including platforms and cleared areas. The C-shape is oriented as a windbreak, and is 1.4m in diameter with a wall of stacked *a'ā* up to 0.6m high. (Bordner 7/19/1991)

232[F/A'uahi]: A C-shape shelter located near the main highway, of stacked *a'ā* 3m in diameter and up to 1m high. Nearby is a another C-shape which is slightly smaller, being 2m in diameter and up to 0.8 high. A substantial stacked *a'ā* enclosure is located just *makai* of these two shelters in an area of more level pasture. The enclosure measures 5m x 5m, with the west wall continuing *makai* for 7m. This feature has been heavily damaged by both mechanical clearing and by constant cattle traffic, so that the walls only measure 0.5m high, though they were obviously considerably higher originally (possibly up to 2.5m high). (Bordner 7/19/1991)

208[A/A'uahi, map A.I.9]: Manini village. At Manini is a village of 10 house sites with accompanying pens, burial platforms, and irregular enclosures some of which are places where tapa was dried out of the wind. The 6 large house platforms are coral paved with ends to the wind. They average 12 by 25 feet. At the beach is a canoe shed. One spot is littered with chips and fragments of beach stones was probably a workshop where adzes were made. None were found, but 4 stone squid sinkers were picked up. (Walker ms 1931)

A series of shelters, platforms and enclosures just downslope of boundary wall *#731*. The *a'ā* seems very recent at this location. One of the features is a bubble shelter which measures 2m x 3m, 0.8m high, which contains a complete set of pots, pans and plates, all of which still look usable, along with an old rubber poncho/tarp. Some glass was noted, but the majority of artifacts (coral abraders, basalt hammerstones and basalt flakes) and midden appear to be pre-contact in form. Numerous cleared and leveled areas are scattered throughout the complex, while both artifacts (coral abraders and basalt flakes-hammerstones) and midden do not seem to correspond to specific work or residence areas. Approximately 50m to the west is an irregular enclosure that is in the form of a triangle, with the base 10m across and running to an intersect at the tip of a small point almost 20m away upon which the enclosure sits. The walls are of stacked *a'ā* up to 1.5m high. On the other side of the coast road from the triangular enclosure, approximately 10m *mauka*, is a second rectangular enclosure of stacked *a'ā* up to 1m high which measures 8m x 7m. While the enclosures of both of these features contain coral and appear to have been cleared of large loose material, neither exhibited any signs of paving or uprights to indicate possible use. (Bordner 7/21/1991)

224[F/A'uahi, map A.I.7]: A U-shaped shelter located just *makai* of the main highway in A'uahi. The shelter measures 3m x 5m, of core-fill *a'ā* construction up to 1.3m high. No midden was noted. (Bordner 7/15/91)

225[F/A'uahi, map A.I.14]: A walled platform house site located just *mauka* of the main highway in A'uahi. The interior is cleared, and the site is associated with a series of leveled and cleared areas that have internal mounding that is typical of sweet potato planting areas. The platform measures 2.5m x 3.5m, with walls up to 0.8m high. (Bordner 7/18/91)

226[E/A'uahi, map A.I.9]: A pair of connected C-shaped shelters oriented as windbreaks, located on a small knoll above around a series of cleared areas including a large *wiliwili* grove. The shelters are constructed of stacked *a'ā*, with cleared and leveled interiors with cobble paving. Both are situated so as to be protected from the strong prevailing winds by higher knolls, though they are still able to overlook the majority of cleared planting areas. The shelters are approximately 2m in diameter with walls up to 0.6m high. No midden was noted. (Bordner 7/18/91)

227[E/A'uahi]: A L-shaped wind shelter which measures 5m x 2.5m, of core-filled *a'ā* up to 0.8 high. A series of vague features are located in this area, all of which are more improved natural features rather than visible man-made constructions. The *pāhoehoe* is in slabs or sheets, with *a'ā* at the edges where would have occurred normally, but the area is too clear. Judicious use of the natural features with minimal clearing would have resulted in habitation areas, windbreaks and planting areas, especially in gaps between the *pāhoehoe* sheets, where the heavy vegetation such as the *wiliwili* now cluster. However, without any visible midden the features are too ambiguous to be formally termed human modifications. (Bordner 7/18/91)

228[E/A'uahi, map A.I.9]: A very large house site or *heiau* located on top of a small *a'ā* knoll. It consists of a large enclosure with a series of cleared, leveled and *ili'ili* paved areas. The walls are core-filled *a'ā* up to 1m high and 0.7m wide. In the Northeast corner flat *pāhoehoe* slabs have been laid down as a floor. The site is located next to a large gulch which must have running water a good proportion of the time as it is clear of vegetation. The gulch is heavily used by cattle for *mauka-makai* travel, and would appear to provide an excellent trail for human travel from the coast up to Lualailua Hills. (Bordner 7/18/91)

212[A/A'uahi]: Along the Shore Trail are scattered house sites and villages. Five house sites were seen just west of Waiailio at the foot of the Lualailua trail. (Walker ms 1931)

210*[A[/LHills]: Waiailio Village sites. Waiailio is the name given to the village at the foot of Lualailua trail. 27 sites were seen, 15 of them house sites, but no heiau structure. 140 house sites in all were seen in a stretch of 6 miles, from Manawainui Gulch to the foot of Lualailua trail. Assuming six persons to a house would give a population of 840 for this section of Maui. (Walker ms 1931)

Site 1165, Waiailio complex. This site is located on the coast and is called Waiailio Village #1. It is a village site with enclosures, platforms, a canoe shed and terraces. It is at the foot of the lowlands below Lualailua Hills at the shore, and covers 36 hectares. There are 19 features within the complex, but no religious sites. (Hommon 1973)

211*[H/LHills]: North of Lualailua Hills at the place where the trail comes up from the southeast is a small village of five house sites and the small heiau described as site 182. All were of rough basalt blocks. Small piles of stone nearby indicated potato patches, the only crop besides melons and gourds which can be grown in such rough country. (Walker ms 1931)

209*[A/LHills]: Hanamauloa [alt. sp. Hanamauuloa] Village. Hanamauloa, the largest village, is situated at the shore below Lualailua Hills. It contains approximately 80 sites of all kinds which is about four times as many as the average village contained. Not all of those sites were used as human habitation, and it is difficult to determine which ones were so used. (Walker ms 1931)

Hanamauuloa is a large village near Kiakeana Point. The trail here leaves the lava flow and comes out into a grassy basin. The trail itself is 6 feet wide and has curbs 2 feet thick of slabs of stone. 70 sites were seen in this vicinity including heiau sites 180, 183, and 184. The 28 house sites are large, the platforms covered with pebbles and coral. There are several large caves at the shore which have been used for shelters and are still used by fishing parties. A windmill and wooden cabin show that the place was occupied at a comparatively recent date. (Walker ms 1931)

Agricultural Sites

324[F/Kanaio, map A.I.10]: A series of mounds and apparent agricultural terraces/planting areas located on a knoll to the West of Site 204. The features are of single-course *a'ā* and define flat and clear areas. These features are located approximately 10m *makai* of Site 264. (Bordner 6/14/1992)

327[H/Kanaio]: This enclosure is located just *makai* of the Goodness Estate 15m to the West of the lip of the gulch/canyon and 4m East of a *mauka-makai* boundary wall. The walls are core-filled *a'ā* up to 1.6m high and 1m wide. The site measures 5m x 4m with a level and clear interior with good soil. (Bordner 6/18/1992)

321[H/Kanaio]: Second L. Bruce "walled structure", consists of an oval enclosure core-fill up to 1.8m high and 1.5m diameter(interior). On a slope, interior clear but not level. (Bordner 6/6/1992)

322[H/Kanaio]: A large partial enclosure located approximately 5m *makai* and downslope of site 321. Badly collapsed stacked *a'ā* up to 0.6m high, 1m wide and measures 4m x 7m. It apparently encloses a partial low sink flat. Appears agricultural as interior is clear and level with good soil. Both sides have semi-natural flats at the bottom of lows. These are found all throughout Kanaio and would be good for planting as they have decent soil and are fairly level, but in most cases do not appear to have been cleared of loose rock. A fairly high proportion of the land around Kanaio town fits this category and might help to explain the lack of more formal agricultural features as long as sufficient water (rainfall/mist) was available. (Bordner 6/6/1992)

328[H/Kanaio]: A core-filled *a'ā* enclosure on a ridge point. It measures 3m x 3.5m and has walls up to 1m high and 0.8m wide. The interior has been badly damaged, but is still level. (Bordner 7/3/1992)

325[I/Kanaio]: A improved sink with banana (in good condition and bearing). This sink appears to continue as a cave at the *makai* end. The large area around this site contains a number of very ambiguous features that appear to be core-filled boundary walls, planting mounds and cleared areas for agriculture. This area has a number of small flats with good soil separated by *a'ā* outcrops. (Bordner 6/22/1992)

326[G/A'uahi]: A leveled *a'ā* knoll. On top of the knoll an *a'ā* field has been leveled out and measures approximately 10m x 5m. In addition the stream sides downslope have been built up and fronted with stacked *a'ā* up to 1m high, probably for water control onto the lower flats. (Bordner 6/26/1992)

320[D/A'uahi, map A.I.17]: A series of features located in a natural sink. The free-standing walls have been built up to 0.6m high of stacked *a'ā*. The center of the features have

been cleared of stone, and the area contains very rich and deep soil. This would appear to be a planting area for either dryland *kalo* or sweet potato/yam cultivation. (Bordner 7/21/1991)

General Legendary Cites

"They sailed to Kulua (the ancient name of the island of Maui, perhaps so called because of the two divisions, East Maui and West Maui." (Hainakolo, *Hawaii Holomua*, 12/26/1912, "Place Names of Maui")

"Kaala-miki-hau was a shark of Honuaula, Maui" (4/1888)

"Kane-i-kokala (k) was a shark of Kahikinui. In Mr. Bingham's list it is called the shark of Maui." (J.S. Emerson; "Sharks of Maui" in HEN vol. 1 pp. 588)

"Kane-kokala (Kane-of-the-thorny-spines-on-the-back) and his sister, Kane-wahine (Kane-the-female) lived at Kahikinui, Maui. They went together around Maui, the brother grew hungry and the sister went for food." (3/16/1907, HEN vol. 1 pp. 588)(EPS ms 1977)

"Uliuli ka pali o Kahikinui e, Dusky are the cliffs of Kahikinui,
Kokolo mai la ka ohu he ino." The mist creeps by; it is storming.

"Honuaula, e paluku ia ana na kihipoohiwi
e na ale o ka Moae."
Honuaula, whose shoulders are pummeled
by the Moa'e wind.

"Ka ua Naulu o Honuaula."
The cloudless rain of Honuaula. (HEN: vol. 1 pp. 950)(EPS ms 1977)

Legendary Sites

405*: A Hawaiian Legend of a Terrible War Between Pele-of-the-eternal-fires and Waka-of-the-Shadowy-Waters.

At Kapahulu, in Kipahulu, the lava west on a slant below Ke-'aha-moa from

Hale-a-ka-la to Luala'ilua, and made two mounds, called Na-pu'u-mahoe (Twin Hills), that remain to this day. Above these mounds was the first long trail connecting noted places and between these mounds is the new government road being used now. (HEN vol. 2, Ka Loea Kalai'aina 9/9/1899)

401: Kumukau's place. Makai is a cave called Ka-lua-'ilio (dog-cave). It is at the edge of the place where Pamano met his death. (Po interview 1966)

402: Pohaku-'ula'ula and the legend of 'Ele'io. He ('Ele'io) went from Kekaha, turned to the leeward side of Maui and arrived at Honua'ula where he met a female spirit, Kelekeleiokaula. The woman whose name was Kelekeleiokaula was a virgin who had not known men. She had sickened and died and so her spirit went to meet 'Ele'io at Pohaku-'ula'ula. This place lies directly above Pu'umahoe in Honua'ula...

After their conversation on the resting place of Pohaku-'ula'ula, the spirit of Kelekeleiokaula accompanied him as far as the trail leading to her home and that of her parents. (Pualewa/HEN notes)

411[A/Kanaio]: Pohaku Pa'ea. Pohaku Pa'ea in the sea is the lower part of the man's body, and Pohaku Po'okanaka up near Pu'u Mahoe are the man, Pa'ea, of the Pele legend which puts the Pa'ea flow as the very final eruption, said to have occurred in 1736 when Pai'ea Kamehameha I was born and his grandfather, King Kekaulike, died. Pele went to Moku Hawai'i as his Tutu 'Aumakua and he could stop a lava flow by tossing some of his hair into it. (Ashdown letter 1/28/1977)

At Kanaio, the Destruction, the man named Paea dwelt at Make'e and desired everything for himself. He brought punishment upon his wife 'Olapa and after destroying her was, himself, ground like stone into powder. His head and torso are Pohaku Paea at the Ana Muki; his lower body is Pohaku Paea in the Sea of Keoneoio where the spirits mourn at Ku-makena, Nahawale, and Maonakala which once was a thriving village. (Ashdown ms, n.d.)

"Last Lava Flow on Maui: The Evidence and a Rough Estimate of the Date."

"I [Father Bailey] was first stationed on Mau-i in 1841," said Father Bailey. "In my trips about the island I noticed a lava flow at Ho-nu-a-u-la, at the south end of East Mau-i, which appeared to be much fresher than the other flows--much more so than it appears now (1879).

"I asked the natives if they know when that flow had occurred, and they told me that their grandparents saw it. They also told me that a woman and child were

surrounded by the flow, but escaped after it cooled."

....In passing the time, I happened to mention the above conversation [Thurston, in 1906] with Father Bailey, when one of the cowboys, a half Chinese named Charlie Ako, said; "I know about that."

"What do you know?" I enquired.

"I married a woman from Ha-nua-u-la," said Ako, "and my father-in-law, of Ha-nua-u-la, who died last year, at the age of 92 years, told me that when the flow at Ke-o-ne-o-io ran out, his grandfather saw it, and that, at that time, he (the grandfather) said he was old enough to carry 2 coconuts from the sea to the upper road."

This is a distance of 4 to 5 miles. The trail is rough and an upper road is at an elevation of approximately 2000 feet.

....There I met 3 old Ha-wai-i-an men, all of whom had known Ako's father-in-law during his lifetime. Each of the 3 men, separate from the others, told me the following tradition, or legend concerning the flow in question, differing only in minor details.

"A man and a woman with two children, a boy and a girl, lived at the point in Ho-nua-u-la, where the lava flow which forms the west side of Ke-o-ne-o-io originated.

"They owned a flock of chickens and had made a vow that no one should have one of these chickens until some of them had been sacrificed to Pe-le, the goddess of the volcanoe.

"One day an old woman appeared and said she was hungry and asked for a chicken to eat.

"The couple replied that they could not give her a chicken because of their vow to Pele.

"The old woman thereupon became enraged, disclosed herself as Pele, and, with the typical cruel and vengeful spirit of the Ha-wai-i-an gods, instead of being grateful to the couple for their faithfulness in their vow to herself, cast a spell upon the earth and produced a lava flow on the spot, with which to destroy the offenders.

"The mother seized her little girl and started to run up the mountain to escape the lava.

"Pele seized the woman and split her in two; turned her and her child into stone and fixed the halves, one on each side of the spot where the lava was pouring from the ground, where they can be seen to this day, conclusive evidence of the truth of this legend.

"Meanwhile the father grabbed his little son and started to run to the coast, intending to swim across the channel for safety to the island of Ka-ho-o-la-we, some 8 miles away.

"While Pele was destroying the woman, the man made some distance down hill before Pele could attend to him. Having disposed of the woman, Pele at the head of her lava flow, then chased after the husband. He, arriving first at the beach plunged into the sea, and with his son, had reached several hundred feet from the shore when Pele arrived. She threw rocks at him, finally hitting and killing both father and son. She turned both into stone. They can be seen to this day, a big rock and a little, rising from the sea, several hundred feet out from shore, undisputed proof of the truth of this story, as anyone can see who chooses to go and look..." (L.A. Thurston, Advertiser 2/24/1924)

413: From Hana-mani-o'a to Wai-aka-puhi we never fooled around that sea. Pele had been angry with a certain man who was unreliable. She cooled her anger by destroying this Puhi-'o-'a there and filled his mouth with boiling lava. Plenty puki were there, huge ones. And the eel shadows were eery. The Ua-lani-pili used to make cloudbursts all in Honua'ula, along with the Ua'lani-pa-ina rain of Ulupalakua and these two rains along with Naulu kept the land fresh. I do not see them anymore. Sometimes a Kilihune blows a bit of moisture, softly, but the land is too dry. Pili grass seed should be planted. Even the wiliwili and Neneleau are dying... Even the forest mauka seems to be disappearing. (Ashdown letter 1/28/1977)

414: Kanaio. In one sense, Ka naio refers to destruction, and it occured in Kanaio in 1736 or so. Down near the shore is Ke awa naku (Ke awa nuku?) heiau. The Rolling Waters? or a harbor-- Or is it Kanahena where that harbor of Paako is said to be where people were "given to the *mano*" (Ashdown ms n.d.)

407: Pu'u Pi'imoe. The hill where Pele went inland to "climb to sleep." 'Olapa is associated with the death of Kind Kekaulike of Maui (died 1736). Makua flow is the oldest. (Ashdown ms 2/10/1977)

412: ...Po-Poki heiau is by the cemetery of the Kukahiko family. Po means a night or revelation; Poki is the dog of Pele associated also with Wai-a-ka-ilio Springs (i.e., the dog belonging to the old woman which leads her to the spring). Since Na-huna (the Secrets) is the name of the lae there, no doubt many revelations were given there. Most people call it "popoki" today, because "the sea hisses there." (Ashdown letter 1/28/1977)

406: We, oh reader, shall move to Auwahi (going past) Ke-ahu-aiea at the boundary of Kahiki-nui and here we come to Honua'ula (Ke-ahu-aiea is on the boundary of Luala'ilua and Auwahi and the maps show Auwahi as in the district of Kahikinui, EPS). Between the hill of Nale and Ke-puka-hala-malo at Auwahi, is the source from which Pele descended to a place called Kuanunu. (HEN vol. 2, Ka Loea Kalai'aina 9/9/1899)

408: Ka-hiki-nui. The big horizon. Named by Hawai'i-loa-ke-kowa, the first navigator. Named the big island for himself, and others for his family. Pu'u Ani-Ani in Kahikinui is named for his father, Ani-ani-ka-lani, also a great navigator.

Hawai'i-loa "drew" the navigational triangle, from Maui to Kohala, Hawai'i, and to South tip of Kaho'olawe named Ke-ala-i-Kahiki (trans.= the- roadway- to- and- from- the- horizon). Kahiki doesn't necessarily mean Tahiti. Kahiki-ku is the entire horizon as far as the eye can see. (Ashdown ms 2/10/1977).

409: Area between Nu'u and Paeahu was called Honua'ula. Now commonly called Kahikinui. (Ashdown letter 1/28/1977)

410: A'uahi. The misty-white smoke of the lava flows. (Ashdown letter 1/28/1977)

403: After a little while they went on to A'uahi for which these few lines of song are the beginning:

Hot is Auwahi

Glowing, the lava of Hauake'ie'ie

It wasn't long before they came among the wiliwili trees and 'akoko shrubs. They reached Ke-ahu-'aiea which is the boundary of Honua'ula and Kahikinui. (*Kaukoa*, Moses Manu: 2/23/1884)

404*: The rocks at Hanakaieie in the legend of Aukelenuiaiku. (As Pele and Hiiaka moved down the island chain)..from Molokai they journeyed to Haleakala in Maui. Upon their arrival at this place they began digging a pit which they left open on the top of the mountain. The rocks at Hanakaieie, at Kahikinui, are those that were dug up by Pele and Hiiaka.

Note by E. Sterling: 'This had reference to a cluster of rocks in a field or section of a'a rubble lava in the uplands, said rocks being noted for their grouping rather than extraordinary size.' (Fornander v. IV/1: 104)

Burial Sites

503[E/Kanaio]: Pu ' u Pimoe, where Pele went inland to sleep, is a burial place. Not only the "5 coffins"), but much earlier hiding places. (Ashdown letter 1/28/1977)

Modern burial cave at Kanaio. It is located east of the old prison camp at the foot of Pimoe cinder cone. The teachers (from Maunaolu College) had found the cave over a year ago and reported it to Elspeth P. Sterling, with the fact that there was jade jewelry with one burial. A month or so ago they revisited the site and found the coffins open, the contents strewn about the and jewelry gone. The cave is quite small and had been sealed. A chimney-like hole in the roof had also been closed with a few stones. Seven coffins were found inside, most of them smashed. A child's coffin had been partially opened and overturned, but not ransacked. Eight crania were seen. Several coffins were fastened with square, cut nails; others were fastened with galvanized wire nails. Remnants of clothing, a felt hat and shoes were found scattered about. One dessicated right foot was found. The cave was quite wet from recent heavy rains. I would guess that all the burials had been placed there within the last 50 years. The site is apparently rather well known. Later heard that a group of students(?) had followed us there that day.

Visited the east rim of Pimoe and found a number of paved terraces extending from the 1569 top down the saddle to the north. The 3 upper terraces were well paved, perhaps 2 by 3 fathoms but vague on the west side, and each about 1 foot above the one below. A 3 foot drop on the north side of the series starts another series of terraces, mostly outlined with stone and with little or no paving, which continued perhaps 300 feet to the bottom of the saddle. This group is most likely a burial ground. The paving on the upper terraces seemed to be only about 6 inches deep. Elspeth P. Sterling thinks the area a heiau. (Soehren letter 4/13/1963)

Site 1235, Cave of 7 Coffins. This is a lava tube/bubble 100m from the base of Pimoe cone, surrounded by low rock knolls in lantana. The entrance is sealed with a stone wall, and nearby is a small wooden shrine, shaped like a gabled house, with a statue of Christ and 2 votive candles. Did not enter.

Lloyd Soehren in 4/13/1963 went with E.P. Sterling to see the cave. A year earlier there had been 1 burial with jade jewelry. On 4/13/1963 the coffin was open, the contents strewn around and the jewelry was gone. The cave is now sealed and quite small. There are 7 coffins, most smashed. Eight crania were noted. The burials apparently have been within the last 50 years. Later heard that a group of students(?) had followed us (Soehren) there that day. Probably from Maunaolu College as two

teachers from there went with L. Soehren and E.P. Sterling. (Hommon 7/17/1973)

Informants say that the "7 Coffins" site has been heavily vandalized, with coffins busted up, wall kicked down and bones scattered around.

The probable "7 Coffins" site is located in a very dense lantana thicket in one face of a small collapsed sink. The front of the cave appears to have a well-stacked wall sealing off the entrance. No sign of a shrine was noted, the only cultural material being numerous aluminum beer cans on the sink floor. A second possible burial area is located in the East face of the sink, where a small cave goes back for at least 5m. A piece of 2x4 wood plank is located on the floor of the sink near the cave entrances and may be one of the coffin pieces noted by others. (Bordner 6/26/1992)

506[E/Kanaio]: A cave located on a remnant of an older outcrop which now an 'island' in the new flow material from Pimo'e. There is a cave which extends for at least 4m back which has recently-cut haole koa limbs and a much older torch end (*pili* grass) at the mouth. The cave is only 0.6m high and 1.5m wide, with a very fragile ceiling. No burials were visible. (Bordner 6/26/1992)

505[H/Kanaio]: The historic cemeteries located 10m apart just *makai* of the upper Kanaio road. The *mauka* one has 11 units, all concrete cenotaphs except the *mauka* row which are just single-course walls. The *makai* group are surrounded by cinderblock walls with a gate, with 2 concrete cenotaphs inside. (Bordner 6/6/1992)

507: Burials at Waiailio, in Lua o ka Ilio lava tube cave [site 604]. After lunch we examined the lava tube Lua o ka Ilio(?) (Waiailio of Walker) through the large hole in the roof just mauka of the old windmill site. The banana trees in this hole were flourishing from the rains. On the floor of the cave were found a number of shell fragments, and a coral file was picked up at the mouth of the mauka entrance to the tube. There is a good deposit of dust in the area around the opening, but no indication of midden material below the surface. The remains of a wood ladder still stand against the east side. Bottles and gunny sacks were found near the foot of the ladder. The tube extends makai about 100 feet (Mr. Boym checked this site). Mauka we walked slowly but steadily for nearly half an hour. At least one burial was seen in the center of the passage under a heap of rocks; other heaps may have been burials but no bones were seen. At the end of a dead-end tube to the right a chamber had been sealed off, inside which were seen many bones and a large helmet shell with (I think) a hole in the spire end(apex). It was not removed. Other bones were seen under the rocks at the end of this tube. A little beyond in the

main tube, just before a rock fall appears to block passage (by clearing it one might squeeze through a ways farther), and on the right side in a nook a coffin was seen. On a ledge above was an old charcoal iron. The wood was sopping wet and crumbled at the touch. The end had fallen out, and with it a woman's turtle shell comb of the ornamental kind. A bottle appeared to lie along side the remains inside the coffin. Nothing was taken. (L. Soehren 4/13/1963)

501[D/Kanaio]: Pohakea (Suspended Sand), a hill east of Pimoe. Seven coffins found there. (Po interview 1966)

502: Lava tube with human remains and lava basin with pure fresh water near South shore Maui. About one mile up the trail, at approximately the 600 foot elevation, just off to the right, east, are 2 tubes. The upper one leads down into 2 branches. A water basin is in the left, east, branch. (Torgerson ms n.d.)

Other Sites

601: Pahua fishing grounds located at Kanaio. Laeloa is one landmark--when directly over Holu Point that is the upper mark. Puwai is the lower mark and is called Ka-hope-a-ka-waa. There is a cave at Kanaio. The stone within resembles a man standing--when it appears slightly toward the windward side then you came over the spots roughly 40 fathoms deep. (HEN notes n.d.)

608: Wai ola Flow takes its name from the story: All Honua'ula (the Sacred Land/Earth of Maui), from Nu'u-Wai'u to and including Pae-ahu, and from beach to mountain summit. The Ali'i liked to dwell in Honua'ula--the final one I know about was Queen Kalola (daughter of King Kekaulike and sister to King Kahekili of Maui, who died in 1794). Kalola was the last one to pronounce the sacred 'Kapu of the Burning Sun' of only the Maui ali'i (in 1790) in response to the Olowalu Massacre by S. Metcalf. (Ashdown ms 2/10/1977)

609: The area has not been studied thoroughly by archaeologists but valuable as heiau, house sites, etc. remain from antiquity. Pi'ilani paved road from Keoneoio to Nu'u is about all that remains of the trail built by order of King Pi'ilani who died in 1524. His son, Kiha, is credited, but he simply completed the road round West Maui. (Ashdown letter 1/28/1977)

The Pi'ilani trail within Kanaio and west A'uahi is in excellent condition, and obviously served as a main focal point for traffic along the coast. This can still be seen not only by the effort involved in the construction and maintenance of the trail, but also the large number of subsidiary trails that branch off from this trail to various locations along the coast. However it does not appear that it was integrated into travel into the lower *mauka* sections as no visible subsidiary trails were noted heading *mauka*. At intervals along the *makai* side of the trail are small oval enclosures which appear to have served as temporary shelter, likely for individuals who ended up on the trail at dark. While this trail is very wide, the base material is very difficult to walk on. In part this may be due to disturbance by wheeled and hoofed historic transport, but in some areas it appears that the trail was not really intended for normal foot traffic as there will pre-contact stepping-stone trails running parallel to the Pi'ilani trail that provide a much safer and quicker path. (Bordner 12/21/91)

611[F/Kanaio]: There is a whole series of trails that run *makai* from the Site 256 area, along with others running along the slope contour. All are excellent in construction - a combination of small material with stepping stones. One big one continues to the Southeast over to Site 204. Though there are supposed to be a series of water caves in the vicinity I was unable to locate them. Many of the trails cross over the *ahupua'a* boundary into Kalo'i. (Bordner 6/12/1992)

629[F/Kanaio]: A large series of lava tubes located on either side of the main highway. The largest of this series of at least 12 parallel lava tubes measures 0.8m wide and 2m high and extends for a minimum of 30m. All the tubes are in a section of recent *a'ā* flow, and run from the northeast down to the southwest. While none of the tubes had visible cultural material, dense vegetation indicates water is present within at least some of the tubes. Several have been intentionally filled in areas of roof collapse, though in most cases this appears to have been done to keep cattle from falling in. However, several show sophisticated blocked-off openings which likely were to hide burials. Many of these tubes are only 3-8m apart and it is possible that they merge at some point up *mauka* that was not located. (Bordner 12/20/91)

610[F/Kanaio]: Additional structure, unrecorded. On the top of a hillcrest approximately .8 mile west of intersection of highway and National Guard access road. There is an irregularly-shaped walled enclosure. The ocean side has a flat surfaced lanai extending the length (about 20 feet) of the structure. It is built up about 2 feet from the surface of

the hill. (L. Bruce 7/9/1972)

613[E/Kanaio]: A midden deposit located in the National Guard range on the *mauka* side of Pimoe. One individual, while collecting cinder from here, found a piece of flat cinder with 7 islands carved on one side and "Islands of Hawaii" inscribed on the other in gold plate.

On close examination the historic midden deposit is limited to a fairly small area, a low pit now cut by an water erosion gulch. On the East side of the gulch there is a crushed car at the base, mixed with iron, glass, ceramics, *'opihi*(large) and cowrie(large). On the West side of the gulch are house beams, lumber, plumbing, electrical boxes/wiring, a complete boot, cattle bone, ceramics, glass and large *'opihi*. The West side almost looks like a burned-out house as there is 0.5m thick ash layer around burned house beams, and also a large amount of melted glass. But it could be dump burning. Surface finds also support a small area of no more than 15m x 10m - not just scattered around but very focused. Given deeper lows from erosion/cinder mining, it is a puzzle why material ended up here and only here,unless there actually was some sort of structure which became a dump site. The glass and ceramics likely date from the Prison Camp period, which may also explain the large amount of shell if it was a work camp with a part-Hawaiian population. (Bordner 6/26/1992)

602: Salt pools at Uliuli village(#207). Salt from the sea spray collects in small pools on top of the rocks near the spring, and the spot was often visited by natives from distant places in order to procure the salt. Elsewhere, as at Nuu, salt pans were made by making shallow depressions in large boulders. (Walker ms 1931)

628[F/Kanaio, map A.I.6]: A rectangular enclosure of excellent construction on a flat approximately 60m *makai* of the site *121* cave. The enclosure is of core-filled *a'ā* construction up to 1.5m high and 1.1m wide, and appears to have a entrance on the *makai* face. (Bordner 12/26/91)

630: Traditional trail that runs from Kanaio east of Pōhākea and down to the coast at Waiailio. The trail is in good condition, with stepping stones incorporated where needed. There are three small *ahu* located at high visibility locations along the trail, each of stacked *a'ā* 0.7m high. The *ahu* are located in areas of flats where the trail disappears, and act as indicator marks for where the trail re-appears. Coral is not used on the trail as it is not necessary - the use of the path leaves the path light gray from the dust and

exposed rock, which provides a very sharp and distinct contrast to the very dark gray and red-orange *a'ā* flow material. It is distinctive enough that this trail is very visible on the aerial photos of this section of Kanaio. At certain locations the trail has stacked *a'ā* walls on either side up to 1m high, and at one location when the trail enters onto a flat the trail is on a causeway for almost 15m. The trail intentionally connects a series of large parallel *kīpuka* with good soil (though very limited water), and it is possible that these are the locations noted in the Po interviews where soil was taken from to transport down to the coastal planting areas. (Bordner 12/26/91)

620[H/A 'uahi]: A walled enclosure around a small gully. The wall is of stacked *a'ā* up to 1.5m high, and the enclosure runs for 40m x 30m. (Bordner 7/15/1991)

621[I/A 'uahi]: A series of corrals and holding pens that form the work station for 'Ulupalakua Ranch during branding and sorting. All the fences are barbed wire with gates, still seasonally used, with a water tank at the *mauka* end. (Bordner 7/15/1991)

622[F/A 'uahi]: A cluster of three *ahu* in an L shape. All are substantial and highly visible, of stacked *a'ā* up to 2.2m high. They appear to small to have served as burial *ahu*, and may possibly mark the site 603 *'Ahu* of Aiea', though if this is the case the puzzle is the presence of three similar *ahu* rather than one distinctive one. (Bordner 7/18/1991)

623[F/A 'uahi, map A.I.9]: A large irregular oval enclosure, with very low walls which are only up to 2 courses high. The *pāhoehoe* wall is only 0.6m high. The interior is clear and flat though it consists of bare *pāhoehoe*. (Bordner 7/18/1991)

624[F/A 'uahi]: An *ahu* in a open area below the main highway. The *ahu* is of stacked *a'ā* up to .6m high and covers 2m x 1.5m. In form it appears to be a burial *ahu*, as there is no sign of collapsed stacking. To the south approximately 15m is a walled enclosure of stacked *a'ā* with unusually high walls of up to 1.7m high, 0.8m thick. The enclosure measures 6.5m x 3m. The interior does not appear to be noticeably cleared or leveled. (Bordner 7/18/1991)

625[F/A'uahi]: A small enclosure of core-fill *a'ā* construction located on top of an *a'ā* flow. There must be water in the flow, as vegetation is rather lush and includes very large sisal. The enclosure measures 4m x 3m, with walls up to 0.7m high. In the stacked material were several water-worn stones, possibly from nearby gulches. (Bordner 7/18/1991)

626[C/A'uahi, map A.I.9]: A series of linked walled enclosures in a low spot. They are constructed of stacked *a'ā* up to 0.5m high on a *a'ā* flow sink, and measure approximately 3m x 2m each. (Bordner 7/21/1991)

627[E/A'uahi, map A.I.17]: An oval enclosure of core-fill *a'ā* construction. The enclosure is approximately 8m x 6m, with walls up to 0.5m high. Downslope approximately 17m is a cleared and leveled area measuring 7m x 5m, with a small walled puka in the *mauka* end (0.3m diameter). Next to this cleared area is a L-shaped wall section 3m x 2.5m of stacked *a'ā* up to 0.3m high, that may have served as a shelter though there was no paving nor midden present. There are several other cleared areas in the vicinity but their boundaries are too indistinct to delineate them clearly. (Bordner 7/22/1991)

631[G/A'uahi]: A enclosure which has been partially destroyed by construction of a "NOAA Cooperative Weather Station" instrument cluster near a jeep road. The rectangular enclosure has had one wall destroyed by the bulldozed access to the NOAA instruments. The rectangular enclosure is of core-filled *a'ā* up to 1m high with a leveled and cleared interior. (Bordner 12/27/91)

603[G/A'uahi]: Ahu of Aiea. The boundary work in this region was very interesting. One large ahupua'a--"Auwahi" was owned by Kamamalu, or rather Ruth Keelikolani at that time and this land was surrounded on all sides by Government land, so that I had to make a survey of Auwahi, the land was one of those awarded by name with no survey. This land also adjoined Kahikinui and where the boundary crossed the old alaloa mauka of Lualailua hills, was the ahu of Aiea. The old alaloa is quite a ways mauka from the present Government road and overgrown with forest.

This ahu was located on the mauka side of the old alaloa, and was a large and well built pile of stones and was the first real ahu puaa pile of stones that I have seen. (EPS ms 10/3/64)

604*: Paiko Windmill. '...started on our way out to Kanaio on foot, we camped below Pimoe Hill. This is waterless country, and we had to pack all our drinking water from Paiko's tanks.

We finally located a waterhole up above Lualualaea (Lualailua-EPS) Hills, and pitched our main camp up there....

Paiko's windmill is located below Lualualae Hills, about a mile back from the sea, and is very interesting; we climbed down the shaft of the windmill into a immense lava tunnel cave, the lava tunnel being about 20 by 20 feet on one side of the lava tunnel was flowing a beautiful stream of water. The stream I should judge was about 1 foot deep and 3 feet wide, flowing on quite a grade. The country is very barren around the lava tunnel, also there are no woods to speak of above on the Haleakala slopes, yet the natives state that this stream of water never diminishes. (Baldwin ms 10/1881)

Today the Wai-a-ka-ilio supplies water to be pumped clear to Luala'ilua and the "Kahikinui House" built by Antone Pico in the mid 1830's. It was used by Ulupalakua Ranch but is now leased to AMFAC for ranching. (Ashdown ms 2/10/1977)

607*[H/LHills]: Footprint petroglyphs. K.P. Emory in 1922 visited an inaccessible part of Kahikinui near Lualailua Hills and was shown what appears to be human foot prints in an old lava flow. A total of 31 were counted, of which 20 were in pairs 3 inches apart. He concludes that they represent children's feet but is uncertain whether to regard them as true petroglyphs or as imprints made by children trapped on a lava flow. This last seems unlikely as the natives have no memory or even legends of any recent eruption of Haleakala. His conclusion is to regard the prints as petroglyphs but of a form very different from those in Molokai (Kalaina Wawae, Moomomi). (Walker ms 1931)

Footprints in the Lava.

These are to be observed on the pahoehoe lava which passes close to the north side of the inland hill of Lualailua, at a place called Papakea. The footprint petroglyphs are 30 in number, crowded into 5 small patches of pahoehoe, within an area not more than 35 feet in diameter, 200 yards north into the flow. They had been cut into the lava to the depth of 1/8 to 1/4 inch. Most of them are 8 inches long. The longest measured 10 inches, the shortest only 4 inches. Twenty of the foot-prints were arranged in pairs, 2 inches apart. They were pointing in all directions, but most of them into the flow.

These foot-prints were shown to Kenneth Emory in 1922 by Joseph V. Marciel of Kaupo. Hawaiians had shown them to Marciel years before, saying they were foot-prints of Menehune people made while they were crossing the flow, carrying stone for the building of Ho'alo'a heiau at Kaupo. Extensive weathering of the edges indicated that

they were made long ago. A few of the petroglyphs were outlined, and some had the toes marked. (Emory ms 1/1960)

Footprints at Papaiki (Coming from Nuu to Lualailua Hills, EPS).

...We were so glad when we drew close to the hills for our goal was just back of it. There were tall hills at 1500 feet above sealevel. There was a hlll on the upper side and one on the lower and the road went through the houses standing there, the beaches, Makena, Ulupalakua and Kahoolawe. From here we went along the side of the upper hill down to this side and it wasn't long before we came to a rocky plain. Here we dismounted and tied our mules to stones. We walked to the place where the footprints showed on the pahoehoe lava, not far off. (T. Maunupou 'A Visit to Kaupo, Maui...', Kuokoa 7/6/1922)

605*: In the rough country near Lualailua Hills certain structures were seen which may have been house sites or sites of some other purpose. On the edge of certain flat-topped hills a stone facing structure at Kaulaula, 1/4 mile east of the cabin on the Kula trail is a double terraced hill 37 feet long. It is built of rough basalt blocks but does not extend back more than 6 feet from the edge. Coral was found on site and also chips and flakes of a dark fine-grained basalt such as is used for adzes. It was suggested by the guide, J. Burns, that trees for canoes were felled and roughly shaped here, as the forest formerly extended down much further than it does now. (Walker ms 1931)

606*: Lualailua Fishing grounds. Lualailua is the ahupua'a. Pi is the fishing ground, and its landmark is located at Kipahulu. When Punalena is in direct line with the depression on Ka-lae-o-ka-ilio, it is there, at the same place, where Kiele is located. The main landmark is Hekikipaihi (Hikilipahi in Hawaiian text, EPS). It is at 120 fathoms deep. (HEN vol. 1, Poepoe and others collect.)

The important fishing ground, of the places mentioned (La-pueo, Alena, Lualailua) is Kiele, belonging to the Ahupua'a of Lualailua. The landmark is located in Kipahulu. It is the hill of Kalena, when it is in line with the depression of Ka-lae-o-Kailio. The stone of the cape is its principal mark. It is 120 fathoms deep. (HEN vol. 1, Poepoe and others collect.)

Boundary Walls

720: Stone boundary wall that appears historic, runs along ridge line. At lower section the wall is only up to 0.8m high, at upper sections up to 1.2m high. Constructed of stacked

a'ā. (Bordner 7/6/1991)

721: A combination of barbed wire fence and stone wall. The section running over the cinder is in fence post and barbed wire, but when shifts to pasture turns into stacked *a'ā* stone wall. (Bordner 7/7/1991)

722: A stone wall 1.5m high of stacked *a'ā*. (Bordner 7/7/1991)

723: A stacked stone wall of *a'ā* construction up to 1.3m high. (Bordner 7/10/1991)

724: A pair of stacked stone walls that enclose or border a quarried area near the main highway. The walls are of stacked *a'ā* up to .14m high. Ties into a nearby series of house sites and agricultural features. (Bordner 7/13/1991)

725: A stacked stone wall of *a'ā* up to 1.2m high. A second wall similar in construction and size intersects downslope. (Bordner 7/14/1991)

726: A stacked wall of *a'ā* up to 1.5m high. (Bordner 7/15/1991)

727: A stacked boundary wall that appears to run completely through A'uahi, of *a'ā* construction up to 1.4m high. (Bordner 7/15/1991)

728: A stacked boundary wall that defines A'uahi from Lualailua Hills, of *a'ā* construction up to 1.6m high. (Bordner 7/15/1991)

729: A very erratic stacked wall of *a'ā* construction which appears to serve more as a retaining wall for flat planting areas than as a boundary wall. In spots it even almost meanders back on itself forming sheltered areas protected from the prevailing winds. The wall is core-fill *a'ā* up to 1.2m high. (Bordner 7/15/1991)

730: A boundary wall of stacked *a'ā* up to 1.1m high. (Bordner 7/21/1991)

731: A boundary wall very poorly stacked *a'ā* up to 0.5m high, usually only two courses high. It is very erratic in course, meandering off the contour. (Bordner 7/21/1991)

732: A boundary wall of stacked *a'ā*. (Bordner 7/21/1991)

733: A series of fragmentary free-standing walls in a *kukui* grove. The walls are generally from 2m-4m in length and up to 0.7m high of core-fill *a'ā* construction. (Bordner 7/21/1991)

734: A boundary wall that meanders from an *a'ā* spine and then turns into a free-standing wall. The wall is of stacked *a'ā* up to 1.3m high. The wall at one point incorporates a partially collapsed bubble into a possible shelter, but no midden was noted. (Bordner 7/23/1991)

735: A boundary wall of stacked *a'ā* construction up to 1.8m high. This section has a barbed-wire fence incorporated into the upper course. (Bordner 7/25/1991)

736: A boundary wall of stacked *a'ā* up to 1.6m high. (Bordner 7/25/1991)

737: A boundary wall which appears to parallel a historic-period road, of stacked *a'ā* up to 1.5m high. (Bordner 7/25/1991)

738: A short wall section coming off of a ridge, of stacked *a'ā* up to 0.8m high. It appears similar in form and size to one found downslope, and is probably an extension of that unit. (Bordner 7/27/1991)

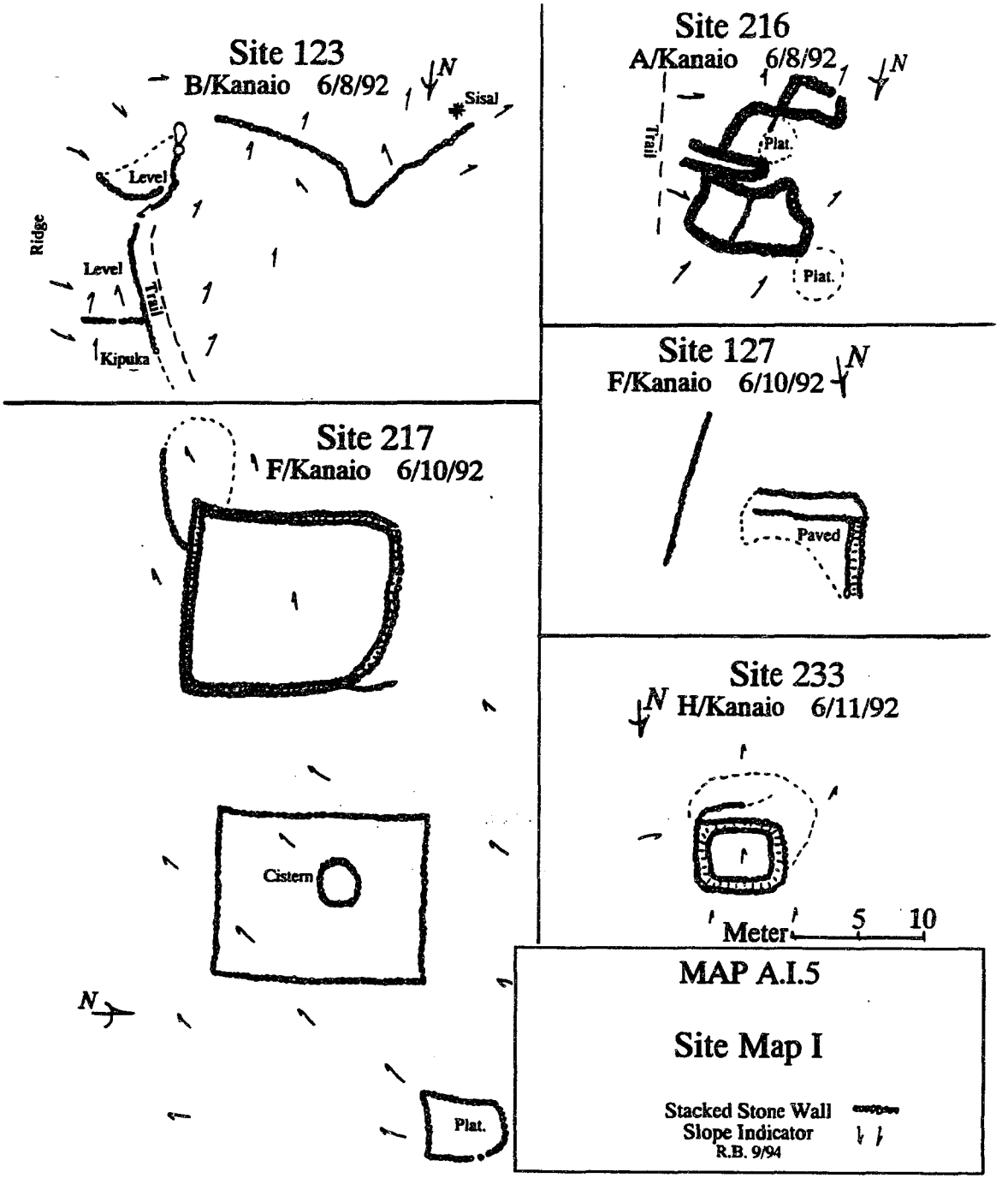
739: A boundary wall of stacked *a'ā* up to 1.4m high. (Bordner 7/27/1991)

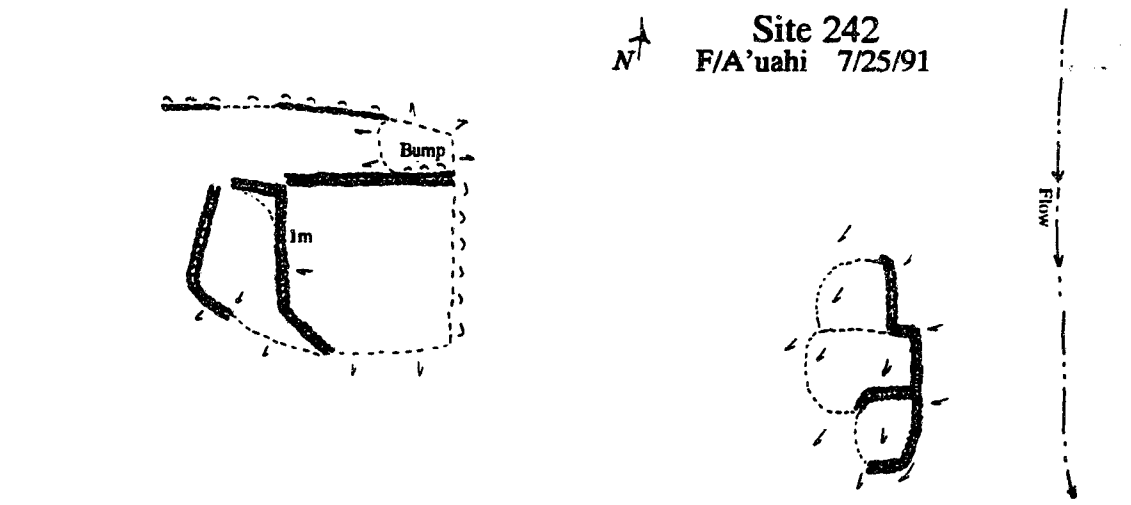
740: A boundary wall of stacked *a'ā* up to 1.2m high. This wall appears to run parallel to the coast for a considerable distance both to east and west. While parallel to Pi'ilani trail it is *makai* of the trail and does not appear to be related to it. (Bordner 12/21/91)

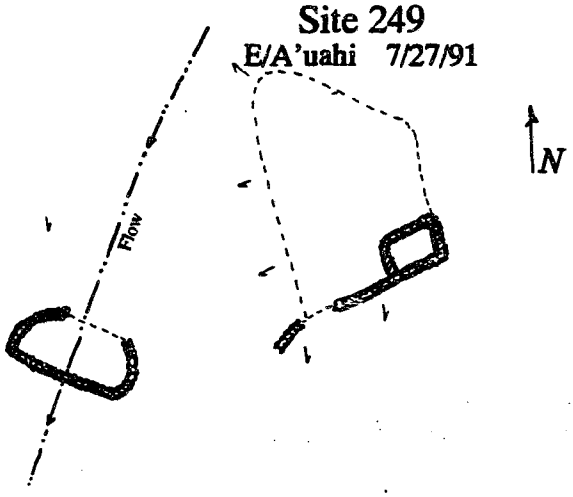
741: A boundary wall that appears to define the area between Pimoe and Pōhākea (below Pimoe) along the slope contour. It converts from a boundary barbed-wire fence to a mixed stacked and core-filled *a'ā* wall up to .8m high and 0.5m wide, of poor to fair construction, below Pimo'e. It extends across the new flow (flow from Pimo'e) over beyond Pōhākea till it reaches the older flow material, at which point it stops. (Bordner 12/24/91)

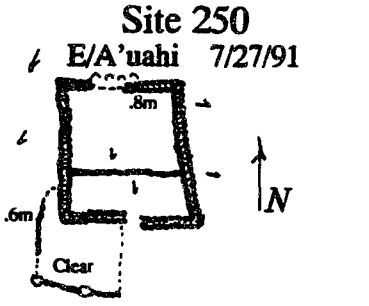
742: A pair of parallel stacked walls up to 0.4m high, 0.4m wide and approximately 10m apart. They are located on a ridge above the campsite and seem to enclose an *a'ā*

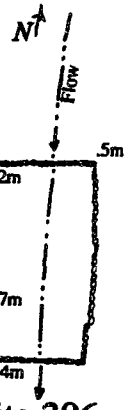
low/sink on the *mauka-makai* sides. There are no enclosing walls visible at this feature. Below the *makai* wall (downslope) is a very large *wiliwili*,but between the walls is largely bare *a'ā*. The *makai* wall extends for approximately 8m and then ends, while the *mauka* wall continues for almost 100m on the same heading and ends in a series of outcrops in an *a'ā* field. At this point there is a largely natural *a'ā* ridge spine heading *makai* and downslope, but it is so low that it could only have acted as a boundary marker. The cattle have beaten a 2m-wide pathway just *mauka* of this wall, and it obviously acts as the major route they follow across this section. The area just *mauka* of the wall seems to have several short walls running East-West (on the contour) that tie into *mauka-makai* (downslope) ridge line outcrops - but as these walls only measure up to 0.4m high, of poorly stacked *a'ā*, it is hard to visualize their purpose except as boundaries, as they do not act as retaining features for soil or water diversion. (Bordner 6/6/1992)


Site 123
B/Kanaio 6/8/92
N
Sisal
Level
Ridge
Level
Trail
Kipuka
Site 216
A/Kanaio 6/8/92
N
Trail
Plat.
Plat.
Site 127
F/Kanaio 6/10/92
N
Paved
Site 217
F/Kanaio 6/10/92
Cistern
N
Plat.
Site 233
N
H/Kanaio 6/11/92
Meter
5
10
MAP A.I.5
Site Map I
Stacked Stone Wall
Slope Indicator
R.B. 9/94

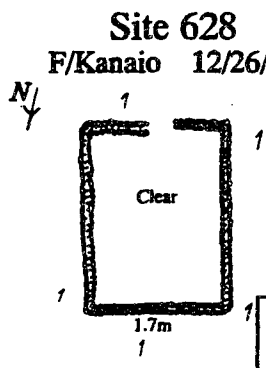


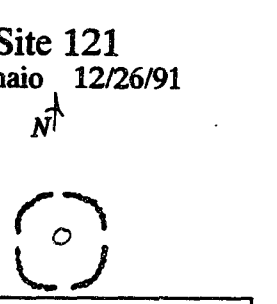






Site 306
E/A'uahi 1/1/92

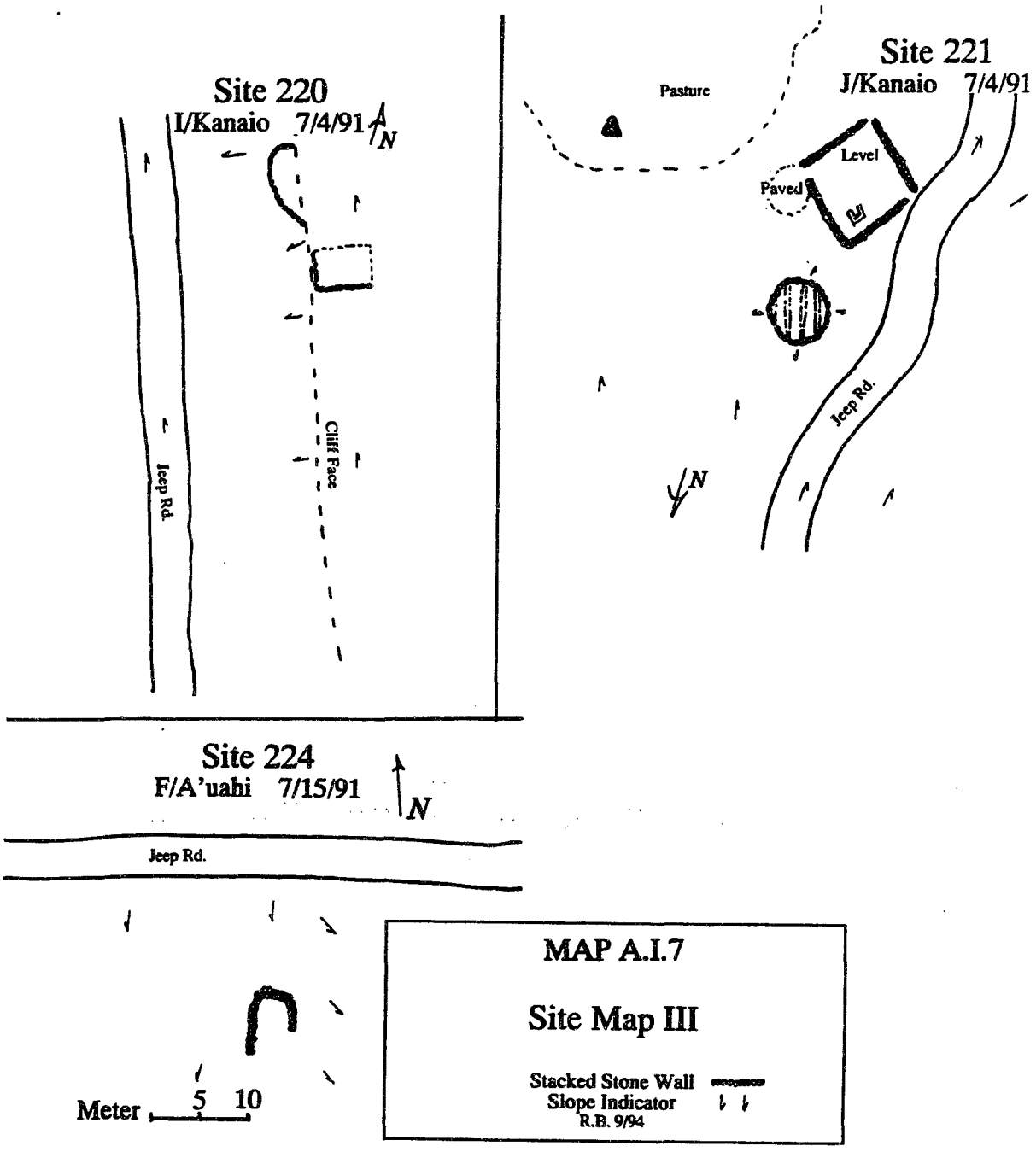




MAP A.I.6

Site Map II

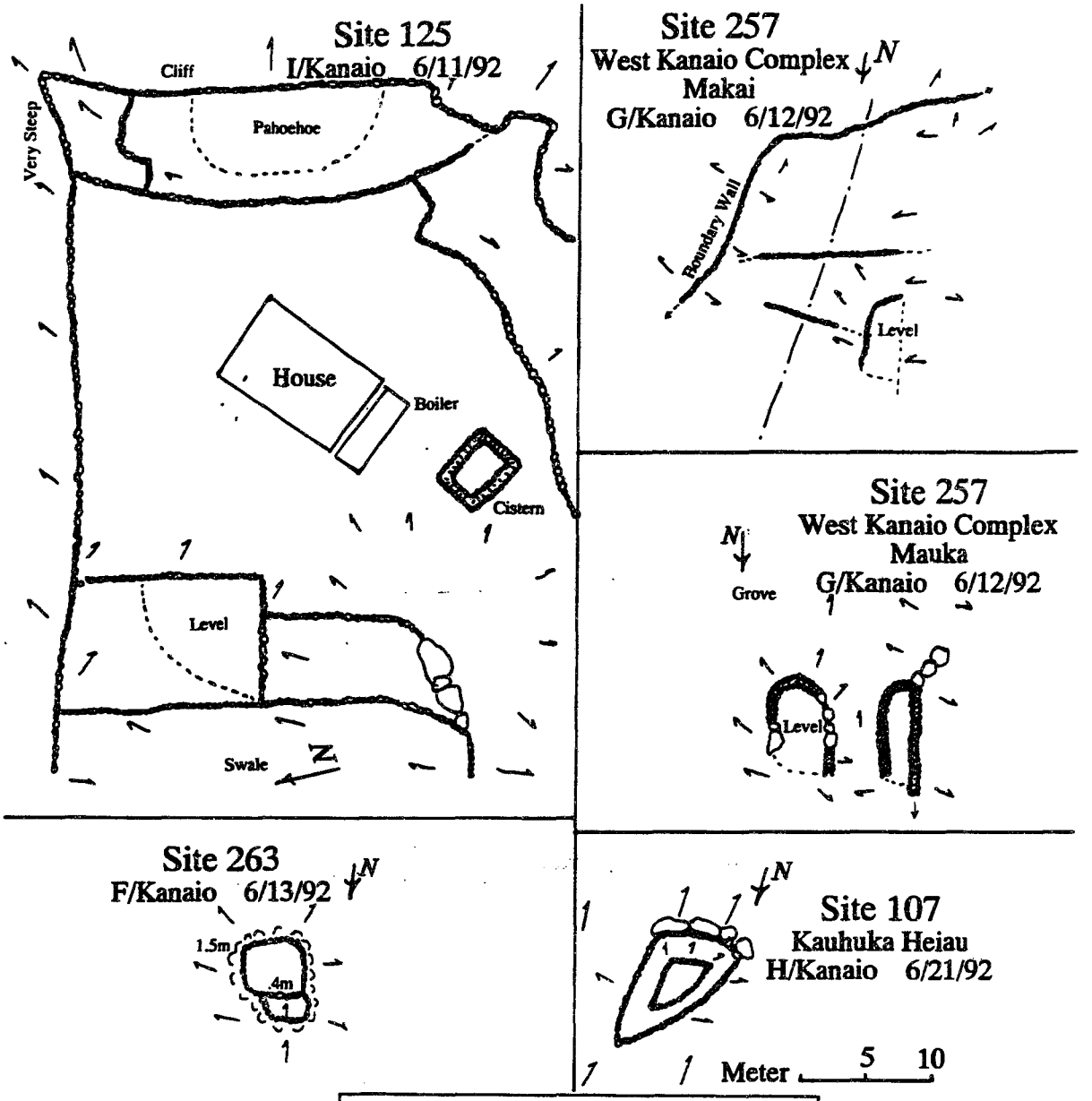
Stacked Stone Wall
Slope Indicator
R.B. 9/94



MAP A.I.7

Site Map III

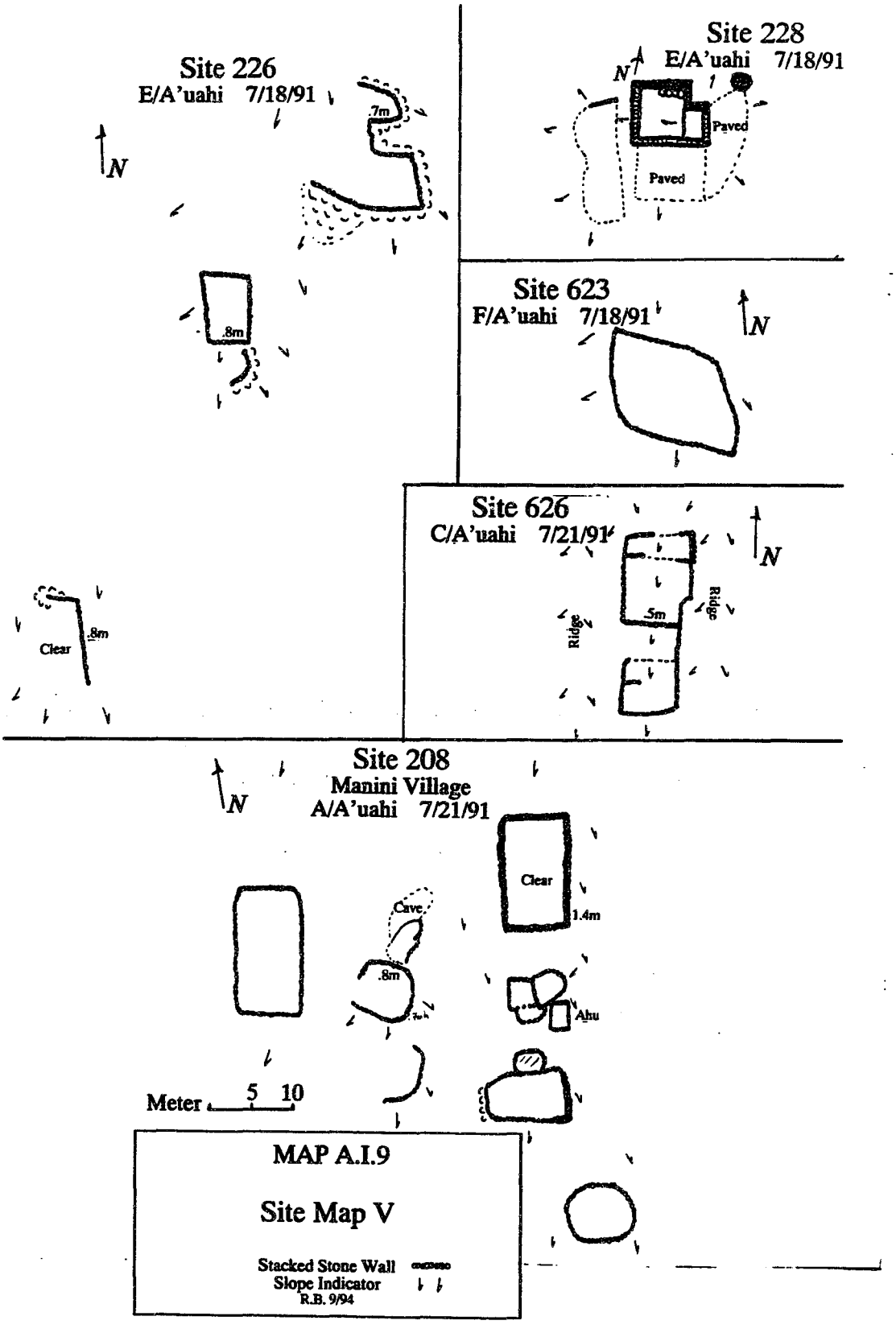
Stacked Stone Wall
Slope Indicator
R.B. 9/94

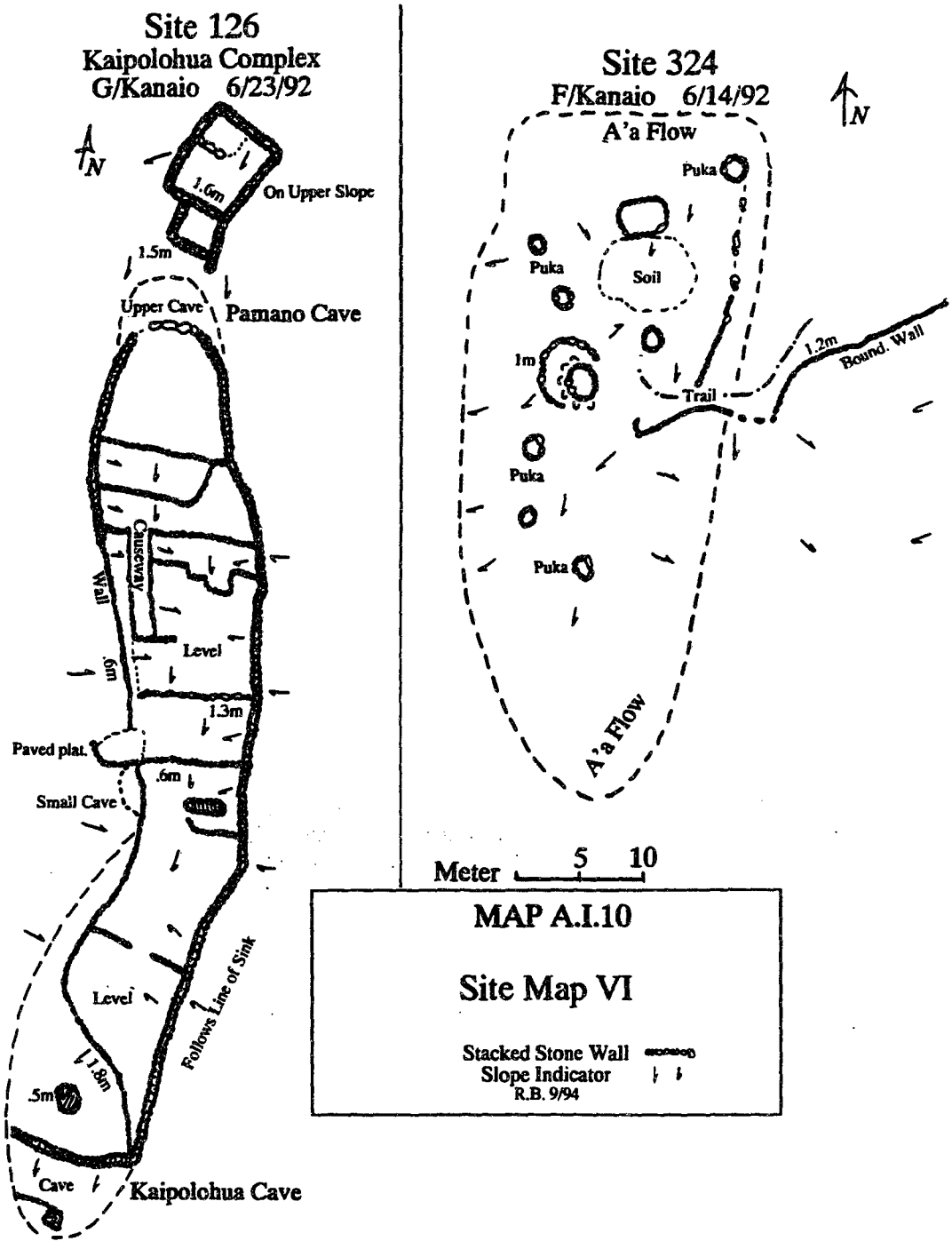


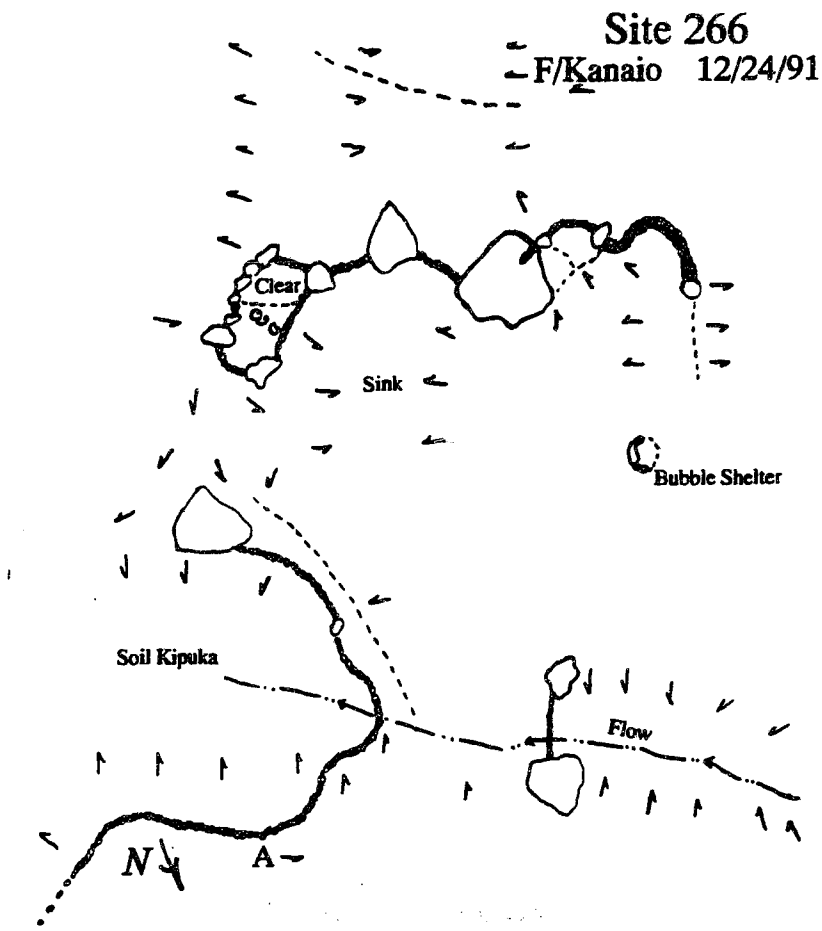
MAP A.I.8

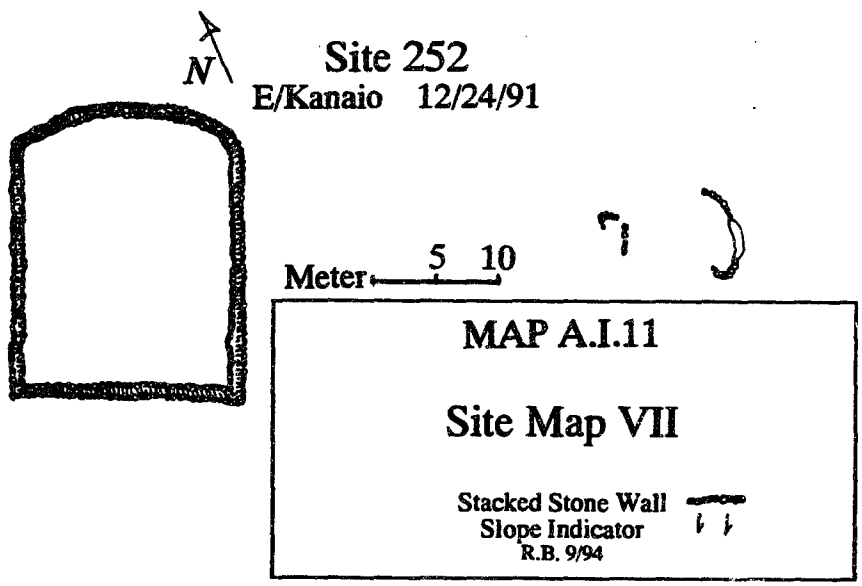
Site Map IV

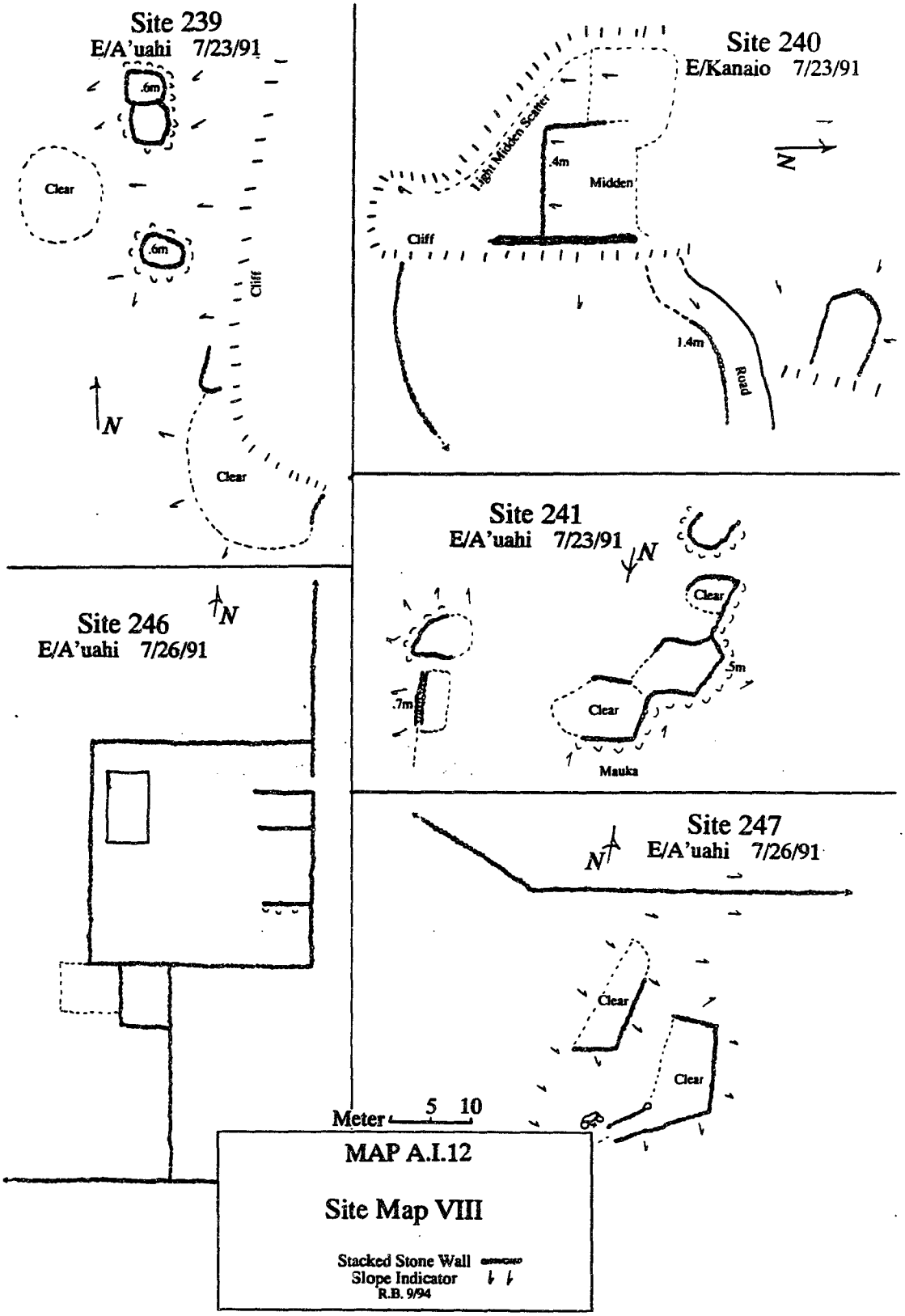
Stacked Stone Wall
Slope Indicator
R.B. 9/94

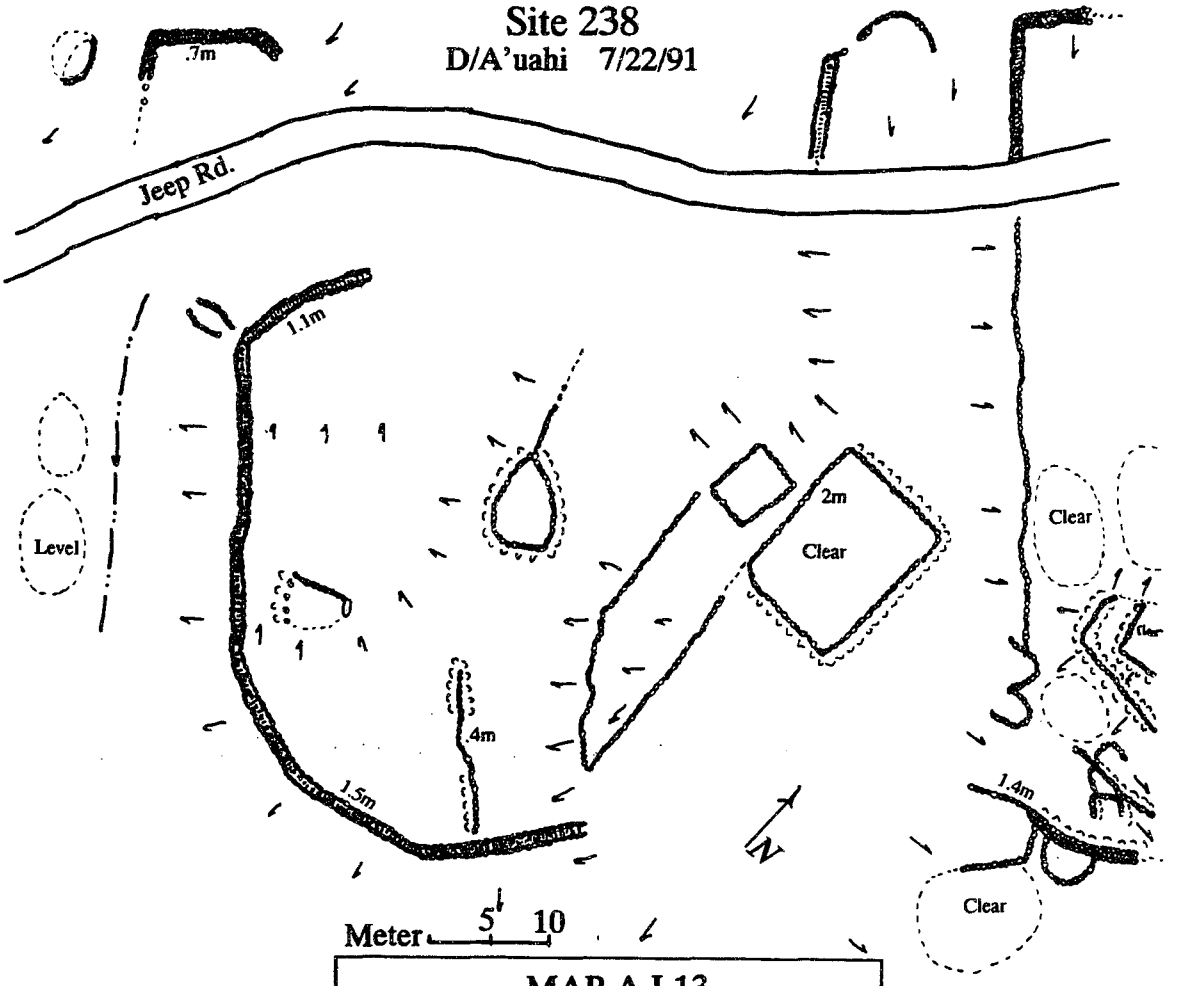

Site 226
E/A'uahi 7/18/91
N
.7m
.8m
Site 228
E/A'uahi 7/18/91
N
Paved
Paved
Site 623
F/A'uahi 7/18/91
N
Site 626
C/A'uahi 7/21/91
N
Ridge
.5m
Ridge
Clear
.8m
Site 208
Manini Village
A/A'uahi 7/21/91
N
Clear
1.4m
Cave
.8m
Ahu
Meter 5 10
MAP A.I.9
Site Map V
Stacked Stone Wall
Slope Indicator
R.B. 9/94


Site 126
Kaipolohua Complex
G/Kanaio 6/23/92
N
1.6m
On Upper Slope
1.5m
Upper Cave
Pamano Cave
Causeway
Wall
Level
.9m
1.3m
Paved plat.
.6m
Small Cave
Level
Follows Line of Sink
1.8m
.5m
Cave
Kaipolohua Cave
Site 324
F/Kanaio 6/14/92
A'a Flow
N
Puka
Puka
Soil
1m
Trail
1.2m
Bound. Wall
Puka
Puka
A'a Flow
Meter 5 10
MAP A.I.10
Site Map VI
Stacked Stone Wall
Slope Indicator
R.B. 9/94


Site 266
F/Kanaio 12/24/91
Clear
Sink
Bubble Shelter
Soil Kipuka
Flow
N
A


N
Site 252
E/Kanaio 12/24/91
Meter
5 10
MAP A.I.11
Site Map VII
Stacked Stone Wall
Slope Indicator
R.B. 9/94

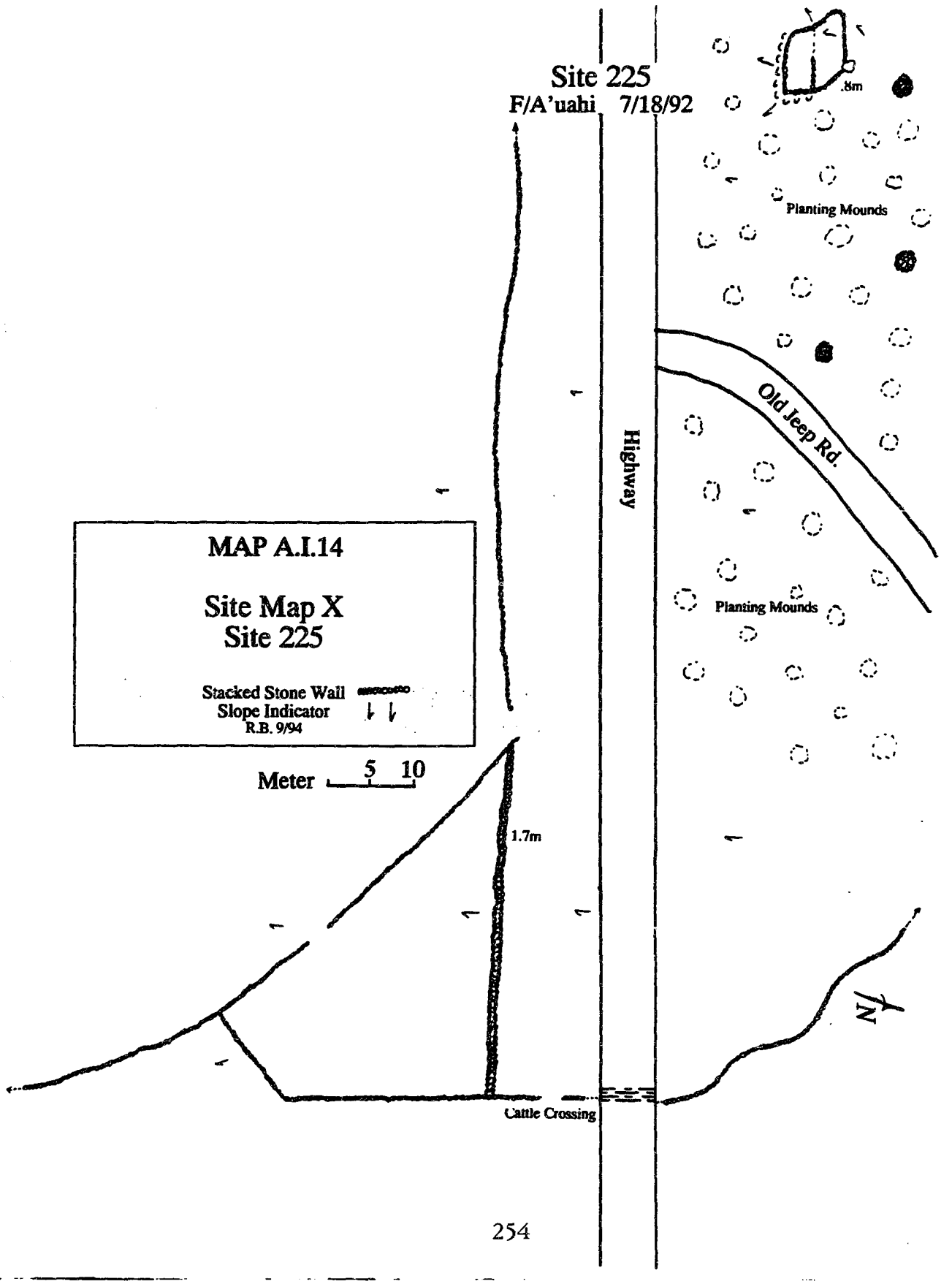

Site 239
E/A'uahi 7/23/91
.6m
Clear
.6m
Cliff
N
Clear
Site 240
E/Kanaio 7/23/91
Light Midden Scatter
.4m
Midden
N
Cliff
1.4m
Road
Site 241
E/A'uahi 7/23/91
N
Clear
.5m
.7m
Clear
Mauka
Site 246
E/A'uahi 7/26/91
N
Site 247
E/A'uahi 7/26/91
N
Clear
Clear
Meter 5 10
MAP A.I.12
Site Map VIII
Stacked Stone Wall
Slope Indicator
R.B. 9/94

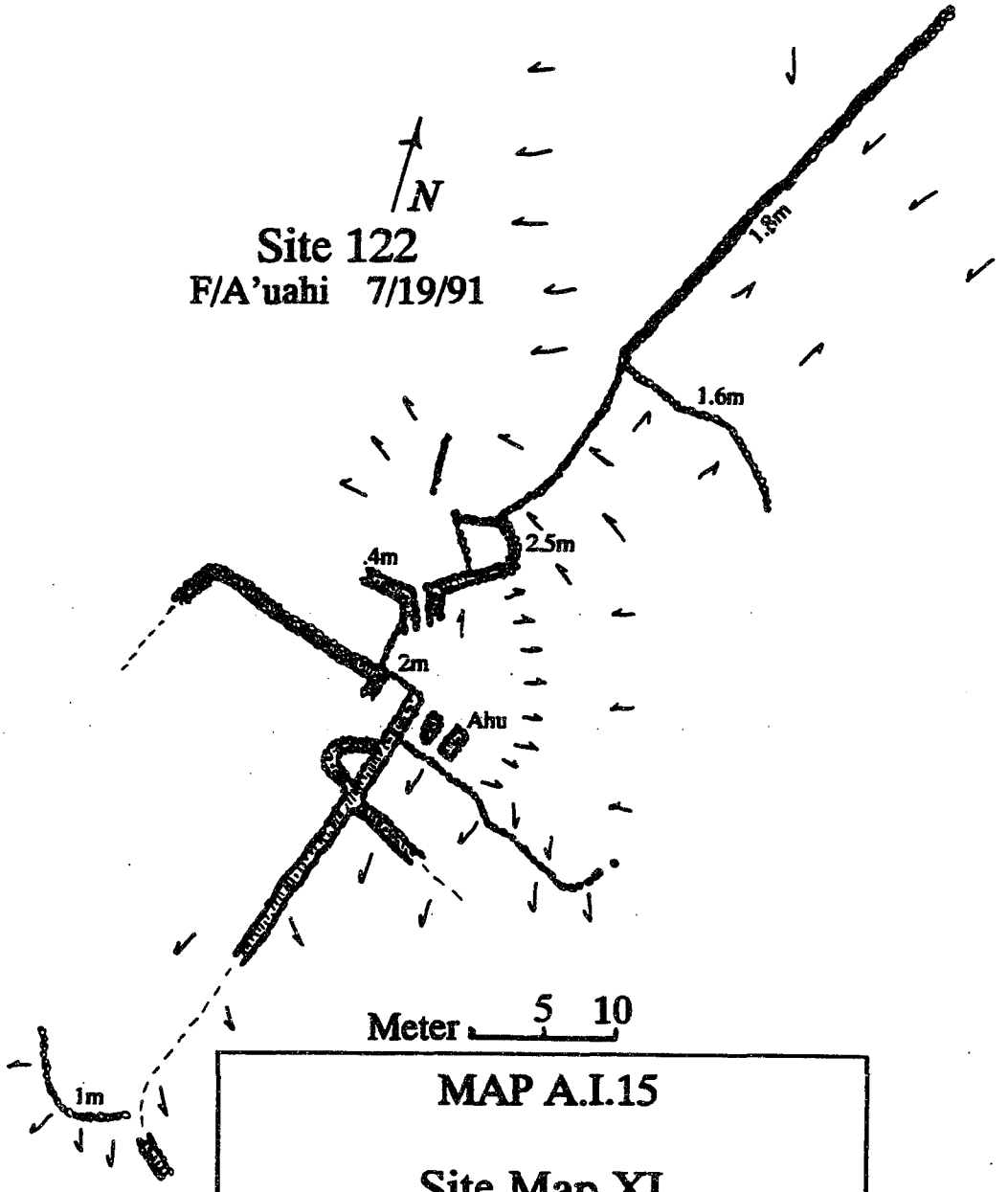


MAP A.I.13

Site Map IX
Site 238

Stacked Stone Wall
Slope Indicator
R.B. 9/94

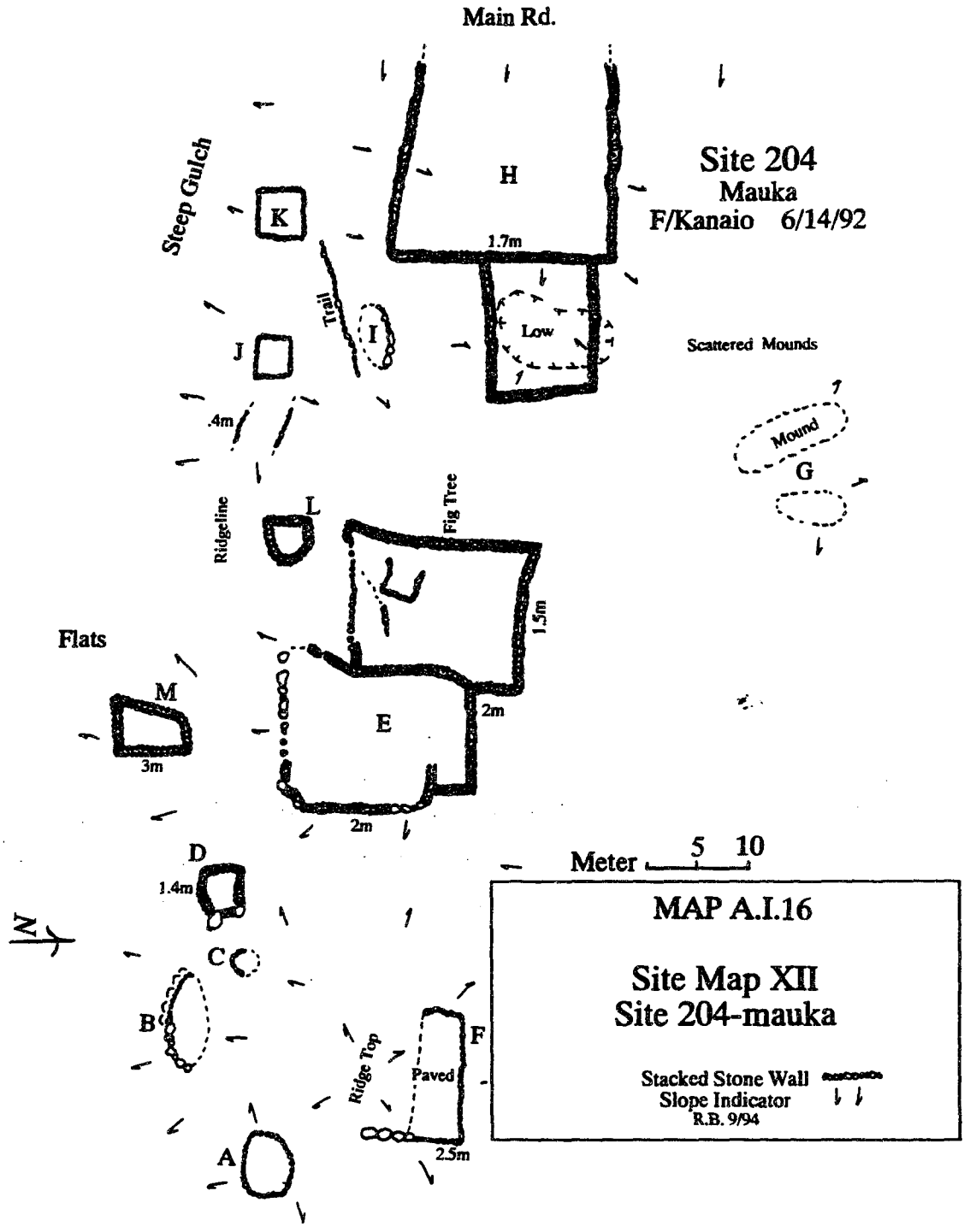

Site 225
F/A'uahi 7/18/92
.8m
Planting Mounds
Old Jeep Rd.
Highway
Planting Mounds
MAP A.I.14
Site Map X
Site 225
Stacked Stone Wall
Slope Indicator
R.B. 9/94
Meter 5 10
1.7m
Cattle Crossing
N

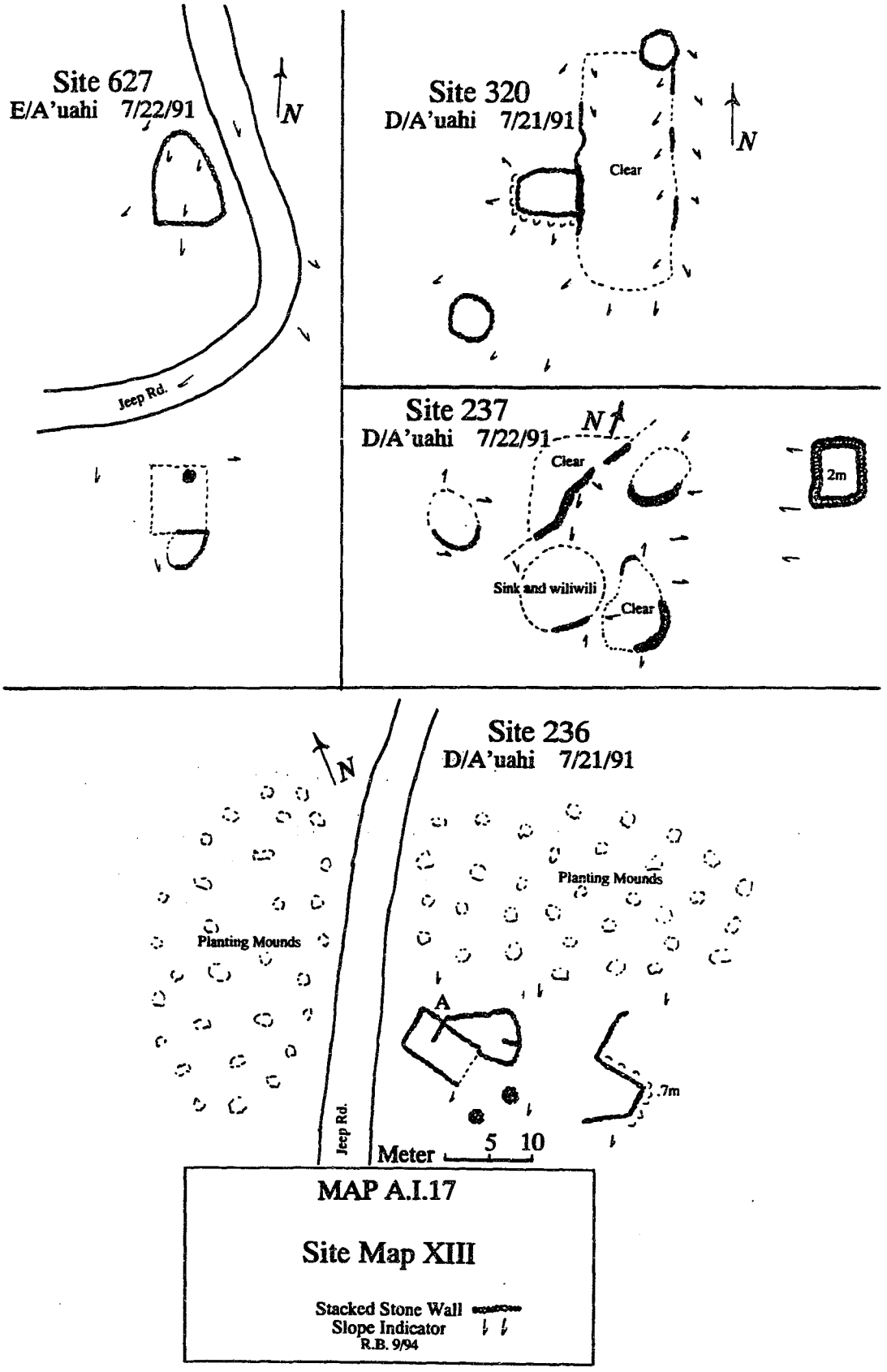


MAP A.I.15

Site Map XI
Site 122

Stacked Stone Wall
Slope Indicator
R.B. 9/94

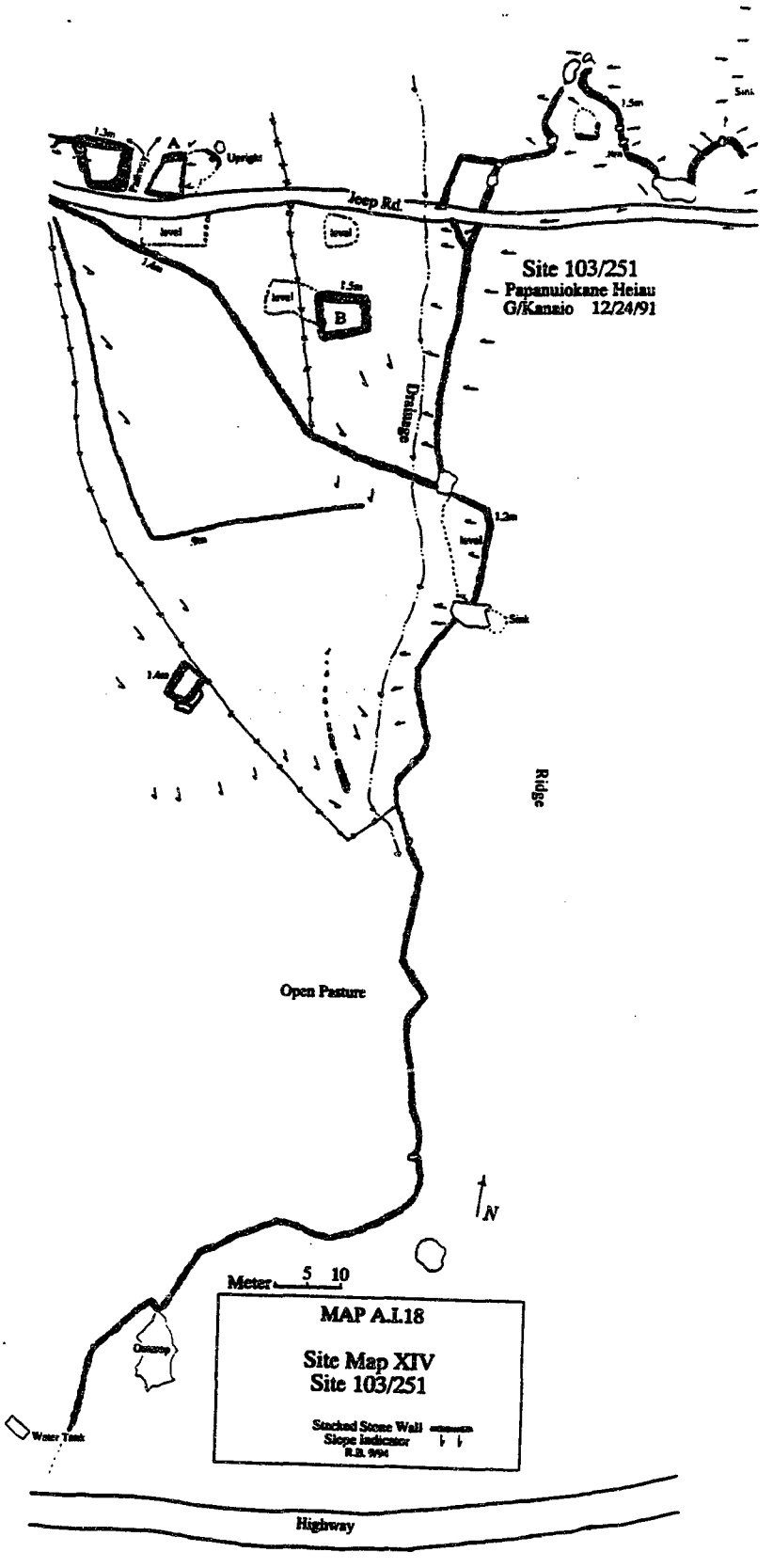

Main Rd.
Site 204
Mauka
F/Kanaio 6/14/92
Steep Gulch
H
K
1.7m
Trail
I
Low
J
Scattered Mounds
.4m
Mound
G
Ridgeline
L
Fig Tree
1.5m
Flats
M
E
2m
3m
2m
D
1.4m
Meter 5 10
N
C
B
F
Ridge Top
Paved
2.5m
A
MAP A.I.16
Site Map XII
Site 204-mauka
Stacked Stone Wall
Slope Indicator
R.B. 9/94

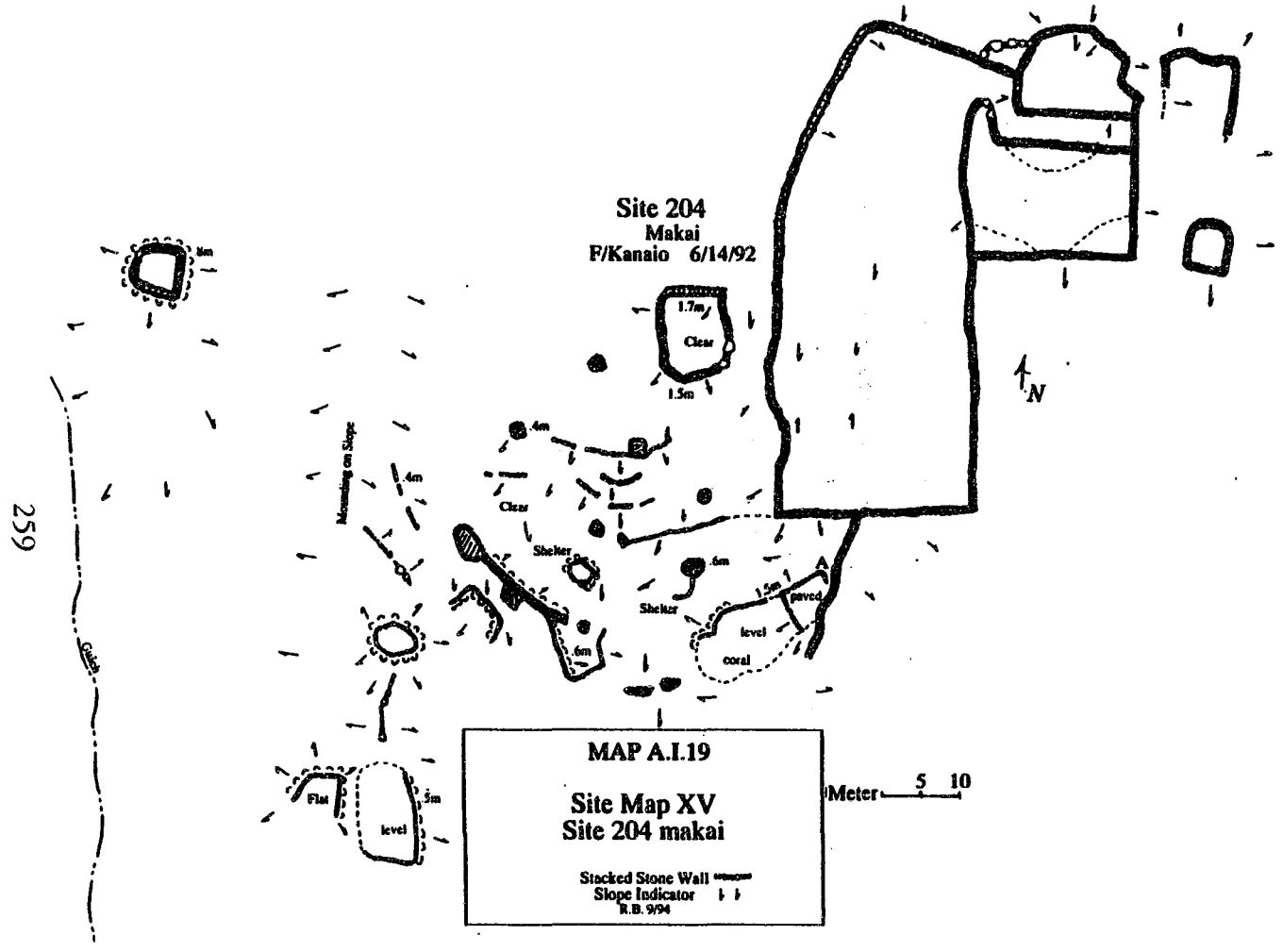


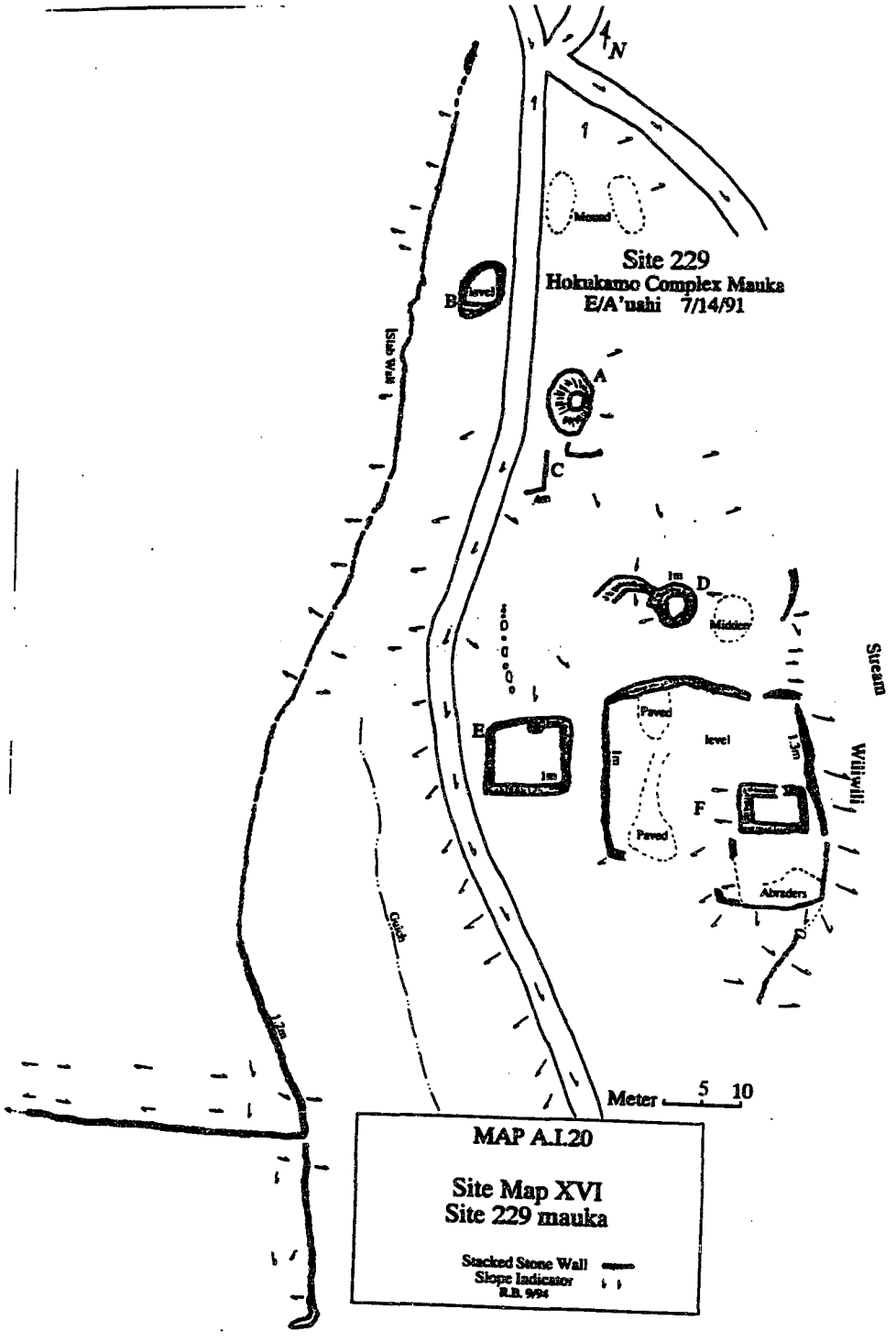
MAP A.I.17

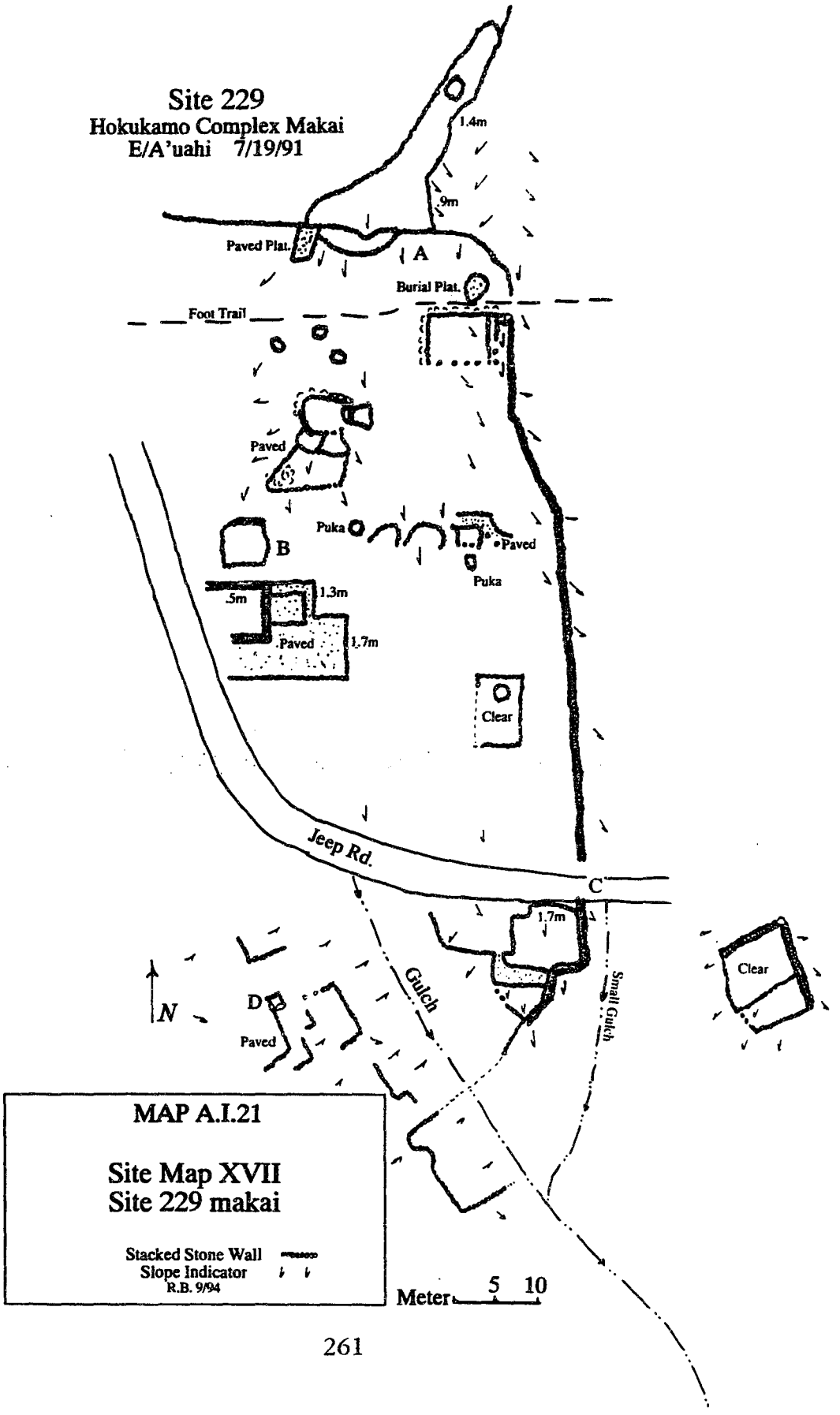
Site Map XIII

Stacked Stone Wall
Slope Indicator
R.B. 9/94


Site 103/251
Papanuiokane Heiau
G/Kanaio 12/24/91
Jeep Rd.
Upright
A
B
Drainage
Ridge
Open Pasture
Meter 5 10
MAP A.I.18
Site Map XIV
Site 103/251
Stacked Stone Wall
Slope Indicator
R.B. 9/94
Water Tank
Highway


Site 204
Makai
F/Kanaio 6/14/92
1.7m
Clear
1.5m
.4m
Clear
Shelter
.6m
Shelter
1.5m
paved
level
coral
.6m
Mounting on Slope
.4m
Flat
level
.5m
N
Meter 5 10
MAP A.I.19
Site Map XV
Site 204 makai
Stacked Stone Wall
Slope Indicator
R.B. 9/94


N
Mound
Site 229
Hokukamo Complex Mauka
E/A'uahi 7/14/91
B
level
A
C
4m
1m
D
Midden
Stream
Paved
level
E
1m
1m
1.3m
Wiliwili
F
Paved
Abraders
Gulch
1.2m
Meter 5 10
MAP A.I.20
Site Map XVI
Site 229 mauka
Stacked Stone Wall
Slope Indicator
R.B. 9/94


Site 229
Hokukamo Complex Makai
E/A'uahi 7/19/91
1.4m
.9m
Paved Plat.
A
Burial Plat.
Foot Trail
Paved
Puka
B
Paved
Puka
.5m
1.3m
Paved
1.7m
Clear
Jeep Rd.
C
1.7m
Clear
Gulch
Small Gulch
N
D
Paved
MAP A.I.21
Site Map XVII
Site 229 makai
Stacked Stone Wall
Slope Indicator
R.B. 9/94
Meter 5 10

APPENDIX II

EXPERIENTIAL IMAGES FROM FIELD NOTES

The following are direct citations out my field notes for the field sessions in Kanaio-A'uahi. As such they are intended to reflect patterns of thought, impressions and emotions that occurred to me while in the field. As they were written in the field they reflect immediate thoughts and impressions rather than those reflective of the luxury of time elsewhere, and are frequently erratic and wrong.

Initial Field Session, Summer 1990

6/10/90: [Jonah Poaipuni] living in house next to church - says have house sites all the way to the upper treeline. Says prison camp destroyed any sites right there (area of Nat. Guard firing range), but rest of area is full of house sites, enclosures and walls.

The low red hill next to Pimoe (Pohakea) is full of burials - area being destroyed by army as firing range. Had house sites and walls also, but most if not all are gone due to military. He noted several walled areas on lower section of lip of *pu'u* which were likely *heiau* (across from church). Several house sites and enclosures and large boundary wall on opposite side of gulch from Kanaio Church. He also noted that trails in new lava flows go usually to 'water caves' where calabashes were placed to catch seepage - floors frequently covered with ash-charcoal from torches.

9/21/90: Kanaio boundary appears to be just beyond 'Highway Mile 16 #31' marker on road when area shifts to dry with fairly recent a'a lava (at .9 mile from intersection). At this edge vegetation change must be defined by rain or something because the newer lava seems to continue back towards 'Ulupalakua - but has more green and trees...

On side of large a'a outcrop, overlooks Pimoe and coastline - has great view to SE-S. All of Big Island very clear.

Area has much more soil - certainly deep enough for good sweet potato - though water appears more common (or maybe just better held by soil) trees still pretty limited to gulches. Only areas without lots of soil are outcrops.

Approximately .1 mile further, on *mauka* side approximately 250m *mauka* of road is a *kukui* grove in a homestead? with shantyhouse and a number of cars, vans, etc., most dead. Lanikaula grove??

Just beyond Kanaio village gets rocky a'a again, appears to be same or similar to section before Kanaio. Limited soils, trees largely disappear. In this area don't see any signs of walls, etc., seems ? was on better soil areas (in Kanaio). At least on *mauka* side of road what appears to be soil is actually a yellow-brown ash (fairly recent) that hasn't decomposed yet - can't tell if is insitu or aeolian but is light.

Went beyond Lualailua - still don't see why is Kahikinui - other side recent material - like a'a section of Kanaio with more trees (*wiliwili* - occasional *kukui* in gulch). But does appear to shift into much softer contours at 2200-2600' elevation - same as per Kanaio. Looks like deforested version of 'Ulupalakua - treeless except for single trees in gulches - in fact largely barren except for grasses.

But the area does <u>feel</u> different - I think because of steeper slope to the ocean - drops much faster, and is missing any coastal plain - though road is lower can't see coast as is sheer cliffs - just drops off (see last photo on roll).

Note that coast of A'uahi same as other side of Lualailua Hills - can't see, drops off sharp - in contrast to Kanaio. Also - actually have many more trees at 3000' elevation from A'uahi to Kanaio and to 'Ulupalakua. From A'uahi boundary with Lualailua Hills and to NorthEast have bare upper slopes. I suspect A'uahi rather narrow in cross-section and may be portion that appears a little more level terrain and older material with more trees - very like central Kanaio. A rather strong visible boundary between older/newer material - could this be *ahupua'a* boundary?

9/26/90: Appears that in upper section (above main road) Kanaio is defined by new lava flow (see photos), at least on 'Ulupalakua side of *ahupua'a*. On the upper jeep Kanaio road to village, soon (200m) after entering new lava, visibility lower somewhat as terrain more broken, initially as heavy vegetation but soon shifts from pasture grasses to others, including *'ōhia* (not seen before-this appears to be dominant tree around road elevation).

A'uahi on first stretch after Lualailua Hills (to Kanaio) has cattle walls parallel to road on both sides. Looks like possible terracing *mauka* but not clear. Healthy *wiliwili*. When you start looking around you realize there is actually quite a bit of *wiliwili* - usually in clumps (mother-daughter?).

It appears that Kanaio-A'uahi boundary is again the newer lava -distance is about right. What this means is that this section of Kanaio Homesteads is right in middle of mean, near lava - very generous.

Second Field Session, Summer 1991

7/4/91: ...at 3100 feet near Kaimaloo cinder cone - the view is spectacular - much better than lower. All of Big Island is visible (at least NW end) including Mauna Kea. I suspect they called this area Kahikinui because you feel like you can almost see south to Kahiki....the only noise is birds and insects, and I'm in the middle of the green cinder cones - the whole place looks landscaped. It's much more spectacular up here than it looked like from below.

7/5/91: I sure don't see any native scrub above Kaimaloo - up to Maununu all pasture except for rare trees (approximately 1 per 5 acres), many of which are *'ōhia* - but not stands, nor trunks of dead ones.

While following horse trail (ash so friable that despite pasture grass trails eroded 10-20cm into ash) noticed subtle change in land pattern at 192° to Pimoe...-while still ash base, contours not smooth but clinker-based hillocks. Several unusual groundcover but no trees.

7/6/91: I thought this place was strange down lower, but it really gets weird in spots up there. Many of the cinder cones have eroded out on 1 side, and so have these little 'bowls' at the base. These often have pockets of trees (many native), native scrub and pasture grass - so bucolic that looks like an add for Coke. But then looming over will be a raw cinder cone with nothing on it that looks like it erupted last week.

7/9/91: Cloud-mist is terrible, visibility 100m and cold.

Kahikinui - in Kamakau Works of People of Old pp. 5-6 in his discussion of horizon that sea 'edge' usually titled Kahiki-moe - and the horizon certainly <u>is</u> visible from up here - maybe linked to limited trees and superb visibility as much as to a place.

...got I section done this morning then rain got serious and have been stuck in tent for last 3 hours - this is ridiculous - the driest section of the island, middle of summer, and it's rained or drizzled every day. On top of that the upper section of Kanaio appears empty of just about anything other than bulldozer paths and cattle trails - impossible to see any use to area.

...Being out here brings a new meaning to empty.

7/10/91: The climatic range is amazing in its variable predictability. Yesterday mist-rain was coming from Kahikinui (SE/E), last night came right up from the road and Puu Mahoe, this morning is from 'Ulupalakua Ranch side (W). But results the same - visibility shot. And again at 7:45 am.

Definitely rougher terrain in Kanaio, but also more scrub/low trees, while A'uahi smoother, pasture with tree clumps.

Well good news I guess. It turns out I was pessimistic in my estimates of area covered - finally found some landmarks during short moments of visibility (was mist-rain) and realized I was already into A'uahi. It means whereas I thought I was only about 1/2 way across Kanaio, I was through it. It means that with todays survey, I have actually completed the whole 3200'-5500' section of Kanaio, and most of west end of A'uahi, which is in the middle of the *ahupua'a*.

7/11/91: Given vegetation difference between Kanaio-A'uahi till above Puu Ouli, think can effectively end Resnick's Native Dry Forest Zone almost exactly at Kanaio border.

You might notice the paper is soggy. Well, after drizzling, late yesterday afternoon it decided to let loose. I figure between Tuesday morning and today probably between 1-2" of rain - real frustrating when Kanaio only gets around 10-12" of rain a year, and that should be from October-March. Rained all last night, and as was done decided to wait till morning, figuring it would stop raining between 4 AM-9AM.

7/13/91: would like to get at least something done - weather finally clear, though have normal cloud bank creeping over Kahikinui (9 am) and already blowing into A'uahi occasionally...Vegetation very heavy - *'ilima*, koa haole, occasional *wiliwili* stands, that poisonous green tomato spined thing.

7/15/91: Many suspicious spots going down Hokukamo road, but while cleared/leveled -- still stone, could be natural -- too ambiguous. Numerous *wiliwili*, and in a few spots large number to be remnant forest rather than grove - especially just above back side of Hokukamo. Spectacular view of coast from side of Hokukamo-- A'uahi coast definitely drops more steeply near coast than Kanaio. Spectacular large grove of very large *wiliwili* on secondary jeep road back up to corral - no visible sites in this area except for several boundary walls *mauka* and E of Hokukamo.

Wonder whether there is some relationship between *wiliwili* and sweet potato etc cultivation - the *wiliwili* is generally in areas of good soil, in low spots protected from most of the wind. In areas where relatively undisturbed, the leaves etc. of the *wiliwili* form a protective humus layer which discourages understory growths would be perfect for vine-type ground plants (sweet potato, gourd, squash, etc.). This might very well be the type of soil Sam Po was talking about that was hauled down to coast. Don't really understand pattern of boundary walls unless they were to protect growing areas from cattle?

Several real large *wiliwili* groves in good-sized gulches - these suckers are huge, with some of the oldies up to 2m diameter trunk - I'm starting to get the feeling that they are remnants of bigger forested areas. I don't think the cattle-goats eat the *wiliwili*, though I didn't find a lot of seeds lying around (goats eat maybe?) - but I bet they eat everything else. The tree seems real prone to getting knocked over - not surprising when you consider continual high winds (15-35 mph) and the very light wood. They frequently seem to stay alive after being knocked down but I bet then the goats eat the leaves and flowers and kill it. There are littler ones scattered over the upper exposed areas, but the big ones are in the *kipukas* - but without grazing animals it seems the *wiliwili* would be everywhere. The only other noticeable endemic is the *'ilima* - I've never seen them so big. Around sections of the Hokukamo complex there are some that are almost trees in size, with real trunks ~ 1.5m diameter. Many of the plants seem to have responded to the rain by flowering - both *wili* and *'ilima* - in fact the endemics seem to be more opportunistic in this regard.

Well not much else to do so walked to top (almost) of Hokukamo - had a spectacular view from it of the shore (Hokukamo is 1400'). Finally had a day of near perfect weather except for wind but 20-40 mph is the norm for here - they ought to set up one of those wind - power systems here.

First *'ōhia* at 720m altitude, still largely lantana/*'ilima*/grass except in numerous gullies where more varied. The dominant shrub in Kanaio, the *pukiawe*, has been entirely absent - haven't seen a single one - appears lantana replaces?

There are real distinctive differences between all the *ahupua'a* - but I would now guess that the mist/wind combination may in part define Kahikinui as A'uahi is definitely more prone to this and exposed to much more. I don't know what, if any, is relationship between this and the *pukiawe*/lantana dichotomy - but it sure makes the 2 places look and feel different. One of the oddest parts is that while I feel very comfortable wandering around Kanaio, even in heavy mist, I don't feel near as comfortable in A'uahi and there I do feel I have to be careful, yet there are many cattle trails and it's not really any harder to get around nor is visibility worse - can't figure it out.

By 940m (905mb) in what is left of forest, *hala*-type being one of survivors (photos). Note high % of dead trees - this must be the forest die-back they all talk about - maybe a ratio of 1 alive : 6 dead.

Can't explain how great the visual variation when leave A'uahi for new flow and Kanaio - makes one very cynical about original Homestead allocations. Strangely enough while grass largely disappears for bare *'a'ā*, tree cover actually increases and looks more healthy - probably due to less cow/goat etc. traffic in bare flow.

Just got back - 8.2 miles but got rest of upper A'uahi done. Got up into Nature Conservancy place (lower little one) and 'bucolic pasture' at 3200' and then took another road over to Kanaio - extremely striking as one minute you're in green pasture with occasional trees then - boom - 20' high wall of almost raw lava. When you look closer you realize actually more trees in Kanaio, but without grass-pasture looks barren. Sure is a striking change, especially in the gulch between the 2.

7/18/91: Old overgrown jeep road runs *mauka* here but doesn't seem linked to sites. Don't see same pattern of mounds *makai* of main road but maybe due to robbing for enclosure/boundary walls. Terrain seems much more rugged ʻaʻā *makai* of road than *mauka* - visible planting areas absent - much is grass over rock without soil.

Some of the high knolls appear to have been cleared and leveled (habitation area?) but not really modified - given that many of chose appear original it is hard to tell, as there is no wall or *ili'ili* paving to prove human modifications - just seems likely.

Much of this area contains 'improved natural features' - the *pāhoehoe* is in slabs or sheets - many piles of ʻaʻā at edges/corners where probably occurred anyway but cleared areas too clear - so judicious use of advantageous natural features for habitation floors, windbreaks and planting areas (especially in gully-gaps between *pāhoehoe* sheets - this is where most heavy vegetation (i.e., trees) is.

7/19/91: ...put in 5.2 miles but got a good-sized chunk of A'uahi from road down to 1000' for section East of Hokukamo done. What made it tough is don't have the network of jeep roads and moo trails that made plodding around in the *mauka* sections relatively easy - that and the terrible vegetation, especially the 'Apple of Sodom' which is this evil-looking weed that, like lantana, can grow into a big woody shrub. It has 3000 spines per square inch, and they're longer and pointier than kiawe, except they break off. Between that and the lantana (what a pair)... In addition to the crud, found a real village this morning - took 3 hours to map, has at least (and I figure I only picked up 30-40% of the features) 15 house sites and other stuff covering several acres, then later hit what is either the world's most impressive house site or a *heiau*, a series of retaining walls up to 7' high on top of a knoll with a couple of ancient *wiliwili* trees and a *kukui* tree! There must a spring here, cause *kukui*'s are not dryland trees (there's also one about 200m *mauka* of main road along same gully). Also a mess of smaller stuff scattered around.

7/21/91: Looks to be a serious storm starting up - black clouds upslope, Kaho'olawe being wetted in. Photos at 140m - vegetation pattern pretty much same as at Hokukamo, but don't see as many possible sites up here. What is striking is how you seem to be a distance away and then all the sudden - you're next to the ocean.

Shore area seems real deserted - no crabs or *'opihi* visible.

Strangely enough (or not so strange) from 1000-300' not too much stuff - but area seems drier and given better conditions either *mauka* or *makai*, why hang out there. EPS & Chapman (and since then everyone else) has said that zone *mauka* of coastline to 1800-2000' was not used except as transit, but I suspect that is only true in bad (i.e. dry) conditions - coming back up from Makee Village (which is really huge) there were sites scattered all over the place from 1000' up - in areas with water and soil. Actually what was surprising also was the concentrated nature of the coastal settlement - outside of the villages, which are big (though Manini Village is pretty dispersed) there is really very little along this section - not very many fancy trails with coral markers or other stuff a la La Perouse. This section also seemed animal sterile - while there is lots of washed up coral, and lots of goats, didn't see any rock crabs or any marine animals - not a single *'opihi*. Shells on beach largely cowrie, with some cone and *wana* (pencil) spines. Midden shows some (but much larger) with addition of drupas - but no fish, *'opihi*, *pipipi*, etc. Somehow seems real sterile. All this makes Makee even more surprising because many of the structures are truly massive, and many of the enclosed platforms have large waterworn *'akua'* stones - in fact on the ridge a series of terraces seem to mark out a *heiau*, each level having multiple *'akua'*, the topmost still being upright. But why all this? The middens aren't real dense, much is coral, so hard to see what they were eating.

7/22/91: I've noticed a close correlation to *wiliwili* groves and Hawaiian sites - suspect the *wiliwili* - were there when sites in use, probably planted intentionally, and since I would guess the sites are at places with water the trees are also happy.

7/23/91: Very clear, with odd yellow haze. At meet point of old and new flow in A'uahi have a very serious gulch with heavy water flow - 1st spot seen with water-worn stream boulders, rock etc. For some reason the new flow in West A'uahi is very 'grey' looking - must be small material, which is light grey (almost mortar) color.

7/24: Trying to make sense of what I've seen so far - 1) uplands above 3000' don't seem to have been extensively modified till cattle period, and even then limited to clearing and access roads. Indirect modification has been due to impact of grazing animals. But should

note that 1st major change in man-land may be shift from limited light exploitation of 'forest' resources to the 'foresting/cash-cropping' - dates for which I don't have. So actually cattle second major change.

2) Residence was much more dispersed in 1800, with fairly nucleated coastal settlement and more dispersed uplands settlement in 1100-2000' range - the total population was likely higher in uplands, especially if one includes the more ambiguous areas. The Sterling/Chapman elevation 'gap' is real, but very limited - the area from 100-> 1100' is generally drier even today, and if Resnick is right about former higher rain/mistfall, then this difference was probably even more exaggerated, as the mist comes laterally across this area, not from *mauka* to *makai* - this is why I was constantly wet and misted in at 3400' while not even damp at 1500'. In those spots with water - usually lava tubes/sinks, though maybe those larger streams, settlement extends further downslope. So it's not that they weren't willing, just didn't make any sense.

3) At least in A'uahi 'new flows' seem pretty sterile - regardless of elevation - I suspect this reflects richness of available good agricultural land and water limitations - S. says this area has some of the best soil anywhere, and given water he could grow anything. So unlike La Perouse, for whatever reason in A'uahi didn't move too much in new areas.

4) Much of the traditional 'architecture' was functional minimalist - the flows tend to have produced numerous level areas, many of which now have a good soil layer - so other than clearing, as long as not playing with *kalo* don't have to build fancy irrigation walled systems or major house platforms (except at coast - Makee for example) - this is especially true in older 1000-2500' level, with numerous likely planting mounds and habitation areas so ill-defined as to be unmappable.

5) Shellfish and coastal resources did not move in large quantity up *mauka* - I have yet to see any sites with a truly serious midden. And yet from Makee upslope, though a killer, is not a real long walk - maybe 3-4 hours on a good trail. Can't explain the lack of midden.

6) Agricultural production *mauka* would seem to have been much greater than Sterling thought - more of the problem seems to be due to haole interest/focus on visible 'built' features & relative disinterest in less-formal features - which are often titled 'casual/temporary' due to construction quality and complexity (built) rather than any qualitative functionality. In fact, given mounded sweet potatoes, every time you pull out potatoes the mound gets screwed up. So why make something fancy with root crops. To a lesser extent this is also true of habitation features in naturally advantageous terrain.

7) Of interest in changing use is fading out of dispersed habitation settlement from 1800-1920 - depopulation of A'uahi, completely and concentration of population around Kanaio Church - it seems now that the Kanaio Church acted as a focal point, probably a

combination of Hawaiian choice (access to Euroamerican technology and goods, maybe *mana* of new religion, following commands of chiefs) and white demands to have all the Hawaiians under thumb - especially to control social behavior (sex, teaching Puritan work ethic, etc.). The final result is the total depopulation of area noted by Pardee Erdman in 1964. It is interesting to see the repopulation is still focused around church - though in part this reflects modern land ownership.

7/25/91: It's funny in that I feel real comfortable in Kanaio - I don't think I could get lost, even today wandering in flows, but A'uahi is what I consider *wiliwili* country. The *wiliwili* rule A'uahi - they even almost exclusively define where sites are - they control. Even in A'uahi I don't feel at all uncomfortable but I do find that I move carefully...

7/29/91: This upper section is remarkably empty - even in older flows. While *kīpukas* and gulches do have good tree clusters, rest of area appears somewhat dry - first area with a fair number of *pānini* - would be a lot more except for parasite.

Third Field Session, Winter 1991-1992

12/19/91: ...shifted to wind-blown rain rather than overhead stuff. Seems OK in Kanaio-A'uahi, though has rained fairly recently as everything is bright green, even Pohakea-Pimoe. Sure did feel better when back over there, sort of drains out of you (Manau?). *Wiliwili*'s along road all fat and happy, with green leaves everywhere. Took a couple of shots of new flow in A'uahi-Kanaio in lumpy section

12/22/91: It's funny how much Site 300 patterns and construction exactly the same in size, type and quality of construction as coastal villages saw yesterday - no difference except location and lack of coral.

12/23/91: Weather not that good - drizzling from Kula down - heavy cloud cover all around except small open section Lualailua Hills -> 'Ulupalakua Ranch - but as I write (2:00 pm) chunk of heavy cloud coming across Lualailua Hills this way. Somehow doesn't seem like trades but East winds instead.
...replace by a combination of resignation - stuck here so might as well get it done and short of conceptually/cognitively shifted gears - now A'uahi feels comfortable again. I think the killer march followed by short mapping was responsible. I also think I agree.. - for some reason A'uahi seems more low key, less 'frantic' - I'm not sure why, but combination of all

the cinder cones (especially Pimoe and Mahoe and *mauka* ones) combined with obvious recent numerous flow scars makes Kanaio seem like a place prone to randomness - a place where a follower of Pele could be punished while in part trying to do the right thing. NOT evil, but just natural randomness. Maybe that's really what Pele is - the natural random element, not at all human or even anthropomorphic like Kamapua'a or Maui - there's really nothing human about her - even her rages lack logic in why they're triggered or resolved (Hi'iaka and Lohiau). In fact Hi'iaka could be seen as the icon of logic and rationality, believing in truth, logic, kinship, social norms, etc. just to see it all dashed by the ultimate unpredictable nature of her sister - the yin/yang or profan/sacree dialectic. Kamapua'a then provides an interesting yet entirely separate dance (as in 3-D chess) on a different plane, between anthropomorphic forces of creation and essentially plant powers of creation, while Pele reflected geologic and non-anthropomorphic forces of creation - that of heat and rock.

While the two complement each other they are also mutually antagonistic at the same place and point in time - for the plants need the collapse of rock into soil, along with the enemies of rock-water carried on wind, to procreate. Yet the rock is the foundation - without it no plants - not even *limu* which needs coastal rock (but also slowly breaks it down). So the image of Kamapua'a pissing on the fires of Pele - with the other gods eventually restraining his destructive instinct to bring the two into balance, with her powers limited to a few regular areas but randomly hitting other locations (with some being especially sensitive to her influence like Kanaio) - in time but not random in place, is a complex conceptual and philosophical dialogue of the dynamics of creation vs procreation.

Maybe that's why A'uahi is more comfortable - while Pele has put her mark - kissed the landscape as it were - at Hokukamo, somehow this *ahupua'a* seems to be a part of a quieter, more benign or procreative landscape. Lualailua Hills is shifting but hasn't got there yet - I feel Pele will kiss it yet again. Kanaio is still in the dynamics of creation and definitely will be kissed again. The vegetation pattern reflects this - again due to differing geological soils the vegetation shows marked variation which supports the imagery. A'uahi had more traditional forest, but Kanaio is tougher in the struggle to survive and thus less fragile so today Kanaio is the more 'Hawaiian'. The two are both powerful places but Kanaio reflects the *mana* of creation and struggles therein - A'uahi the *mana* of procreation, its celebration of life but also death. So it less successfully resists foreign impact.

There are probably more 'native' trees total in Kanaio, but almost no stands - but this is probably a fairly close reflection of what it used to look like. In fact the upper section in *Pukiawe-Halapepe-'Ōhia* is probably a thinned out version of its former self. But A'uahi is fewer total trees, but little remnant forests fighting a final lost struggle against plant/animal

invaders - the *wiliwili* groves *makai*, the endemic exotics *mauka*. More variety, but more fragile.

Maybe Kahikinui was as much an image of the procreation - as it is bounded by areas of creation (or Pele boundaries) of active Kanaio and active Kaupo?

12/24/91: Short trail segment across arm of new flow to get down to *wiliwili*/jade plant *kīpuka* - those *wiliwili* are as big if not bigger than Hokukamo ones - but lot fewer. Good soil throughout the low. All this (trail heads *makai* into *kīpuka*) at 365m near Kanaio border in fringe of new flow.

Not sure if area below and West of Pimoe ever had sites - combination of very loose ash soil and lack of visible sites means either 1) just weren't any; 2) area grubbed and cleared - highly likely given how easy it would be even to remove trees from that stuff. So only major area that might have sites is triangle East and *mauka* of Pōhākea - also will hopefully locate trail as sure didn't pick it up at *makai* end - was hoping to walk up it rather than all the way over to Makee-Hokukamo.

12/25/91: Note - on Pi'ilani Trail to Makee not only 2 fairly deep caves (*makai* side) but also spread out at intervals (especially in middle section) were 'pit' C-shapes built into lower side of facing wall (*makai*) - obviously for shelter if caught by night and/or storm. I still can't figure why it was built the way it was unless for narrow carts (wheeled). It's so much more difficult to walk than a regular trail. And while it has been banged around in last 100 years, still doesn't seem to account for instability and loose feeling. Actually it says something interesting about their attitude towards that section - straight-line transect (freeway) to get through it as efficiently and quickly as possible. Maybe it wasn't any more attractive to them than us - but they needed access to the coastal resources and few nice spots but just wanted through the rest. Would also explain the pattern of coastal trail systems - 1) series of short trails from communities to resources and nearby things; 2) Pi'ilani Trail for quick long-distance travel coast-wise, with all communities linked to it; 3) the *mauka-makai* trails which tend to run *mauka* community-*makai* community, not to Pi'ilani trail, as their function was movement of people and resources between different environmental zones and resource bases. But think that Po was only part right - traditionally some of population would move down to coast - maybe ones in more marginal areas of water or soil, but rest stayed put, through had direct contact with group to coast. Don't think anyone stayed on coast full-time but could be wrong if had decent water - maybe the truly big locations were permanent - Makee, Keone'ō'io, etc., - but suspect the rest were 'seasonal camps'. Po's statement about bringing down soil sounds like it - have soil at good locations, but others got zip. But key is

upland area. With permanent agriculture systems wouldn't just abandon (though does only take approximately 2-3 hours to get uphill) - maybe between harvest/planting periods maintenance load was light enough to allow coastal shift. Probably worth noting that unless in area of permanent water (spring etc.) it would seem that agriculture in this area would be quite seasonal (which fits Po description) - thus cycle of agricultural work would in many areas - most of A'uahi and definitely Kanaio - be pretty off-on depending on rains etc. Need to keep some crops and animals on permanent water in dry times would encourage moving water-consuming excess people to coast - not only exploit protein-*limu* and prepare dry fish for rest of year, but more importantly impacting different water system - deplete coastal resources.

Would be interesting to see how long takes rain water in hills to seep to coastal area - would bet cycles into off-season upslope - so maybe people were actually following the surplus water to coast - doing limited agriculture and just using it till rain upslope re-triggers cycle. That would explain Pele's dog and spring - if cycle disrupted wouldn't do any good to go to other coastal systems as they're short too - and *mauka* even worse. What you need to find is hidden remnant of the last rains.

Actually could be effective social mechanism also. You figure extended kin group living together, but always going to have tensions, arguments, etc. - So decisions about going coast/staying *mauka* may have provided a release of tensions (as Aborigines do) - by the time everyone gets back into closer contact tension usually gone - if not then serious and requires *ho'oponopono*.

12/26/91: Trail is excellent - real nice, though fades out into alternatives when gets into easier terrain NE of Pōhākea. What was shocking was goat damage in that large *kīpuka* trail goes into - anything native just about gone except for a couple (3-5) widely scattered jade trees. Not a single *wiliwili* - just haole koa - can't imagine why. Have destroyed that shrub in this area - just like I saw 12/23 in other section - they just love to butt it over, but don't eat it - just break it.

12/27/91: Same pattern as A'uahi-Lualailua Hills or A'uahi-Kanaio - *ahupua'a* defined by change in land form but actual formal line is kicked off.

Says in book that *'Ōhia* can go from sea level-8000' - wonder why they are so altitude specific here? Same problem of goats/cattle - only thing I can think of is mist level - maybe they need slightly more water and so have to stay higher? but *koa* down lower - would have thought it needs as much if not more water?

12/29/91: Interesting value patterns - traditionally ag., but then by time of Mahele LCA's most were apparently involved in cash-cropping (note number and percent) either haole potato and pasture (this is assuming that *kalo* was for consumption not sale). The shift from this to complete desertion, probably in part due to difficulty of the place to provide enough to make an economic go on limited land area, but no trouble providing subsistence needs. Must find out genealogy of control for A'uahi - who no LCA's?? Would guess Princess Ruth shut it down since she had prior claim through Kamehemeha's. Wonder if A'uahi population succumbed to same economic desires as Kanaio? But shift to attitude... - that of "the place [Kanaio] was just all stones - not good for anything". Makes you wonder how much of Goodness...was on a population that maybe didn't care much any more - have to remember that even Sam Po left, and only came back to Kanaio when other things didn't work out - more as refuge than a 'place to make a go of it in the modern world.' This really hasn't changed all that much - the common thread that seems to tie people in Kanaio is 'the place to get away' - whether it be from others economically socially, haole congested society, preservation of life-style - a reactive place rather than a place where things happen to make change - an active place.

12/30/91: Land ownership (percent, interest) probably pretty close reflection of traditional land use - certainly doesn't reflect western individual ownership - rather application of laws of personal ownership to familial-group access - the complicated pattern seems to reflect idea that land belongs to group, not individual - but laws say must decide how much owner, so end up with percent/interest.

1/1/92: Just went down to *wiliwili* groves/sink West of Hokukamo for seeds - went down gulch and found another enclosure. Surprised aren't more visible sites in *wiliwili* groves as have water and good soil - only thing can think of is that other than clearing (not a lot of loose rock around) wasn't necessary to do much if used for planting - main problem was water not soil. So a good bet that most *wiliwili* groves were originally agricultural areas - maybe with *wiliwili* as shade/water catchment??

If traditionally the weather patterns were similar but lower, it must have been frustrating to be short of water and see all the squalls moving across the channel - So far every night that I can remember, from approximately 3:00 - 8:00 pm and again in morning a line of clouds marches down the channel towards Kaho'olawe with a skirt of rain squalls hitting the water - but never seem to hit this coastline and looks like break up just short of Kaho'olawe. Only satisfaction is cloud line, but that's upslope. It's just right along change in veg. line. Amazing how it consistently runs at this level - would be interesting to see why cloud there -

maybe always there? But again cloud usually same period as lower squalls, so maybe heat/cooling has some effect? It might just be illusion, but from campsite appears that cloudline closely follows shift in slope angle - cloud runs at line where is steep - but when slope gets slightly more gradual (downslope) then stops - makes more sense than trees since upper slopes actually have less trees/shrubs (at least in A'uahi/Lualailua Hills) than lower section. But why would angle of slope matter, unless has wraparound venturi effect on wind? Maybe pulls cloud down-over?

1/4/92: One interesting thing in this area - from Kanaio includes Lualailua Hills - is lack of petroglyphs even in flat *pāhoehoe* areas that would seem perfect - in Kanaio not even flats near habitation areas have anything. Area East of Lualailua Hills <u>much</u> more dissected to largely erosion (water). Area directly East combination of water and flow patterns (?). But area to East over to Nu'u is definitely tougher going in lower altitudes - many of those gulches are seriously deep and can't see how you would traverse them - either go way *mauka* or down to shore - but at shore cliffs a problem as beaches small isolates. Note striking vegetation change - even though erosion would suggest <u>more</u> water, no trees (very rare scattered *wiliwili* but more importantly <u>no</u> shrubs) - just grass. Maybe less soil. All suggests <u>less</u> water.

<u>Fourth Field Session, Summer 1992</u>

7/6/92: Time geography study out here would be pretty ineffective as no set patterns to daily activities - Time geography would only seem to function effectively where have repetition. But if don't have 'daily normal routine' won't work, as each day tracked is unique and not necessarily reflection of normal (or average) activities.

Around 1:00 had strange pattern of 'meeting winds' - strong trades blowing at camp, and upslope from Lualailua Hills standard mist-cloud marching West - but from 'Ulupalakua Ranch side wind pushing cloud around and above Puu Ouli to East - collide directly above slope at Nature Conservancy altitude - clouds quickly getting thicker and darker - serious dark line overhead and in Kanaio - I wonder if this is the cloud pattern described for *Ho'ulu heiau* - as stacking up (and moving downslope) at right location. Temperature drop approximately 10 degrees in 15 minutes - now actually cool wind (as was yesterday during botany hike).

7/8/92: When get back will have to take a closer view at State files - figure canoe sheds (if that's what they were) - if not actually mu'a - must be in that kiawe thicket at shore - but you'd have to have lot of guts to launch and recover canoe from here - even in light wind like today vicious chop/swell combination - any canoe big enough to handle would be too much to recover.

7/9/92: Alena seems real similar to East Kanaio/West A'uahi - even same native tree pattern in gulches, fresh lava, etc. - beyond that more dissected - heavier flash-flooding and/or less tube/subterranean water channeling.

Some serious rain earlier this morning - rain as last time: 5 AM. But this time hanging around and hit again at 7 AM - like a long squall as have slightly gusty trades - maybe my headaches are a barometer as I got them just before last rain and had again yesterday. This is a serious rain - leaves ground pretty soaked - would be just right for planting - not enough to wash away soil/shoots but serious water (especially if lay a mulch cover down afterwards to hold in water).

7/11/92: ...pointed out how much worse road and traffic has gotten - especially with bicyclists - he's always having close calls due to them, and tourists too ignorant to know how to drive on 1-lane roads, and local fishermen screaming around at 50-60 mph in jacked-up 4WD's. Said Grand Hyatt was supposed to budget out at 430 million, but went over budget to tune of 730 million - will likely go into Chap. 11 as can't find anyone to bail them out. 3 Seasons hurting - seems like Hyatt at 20% occupancy.

7/12/92: Classic case of two different culture value systems - the gap that permeates Kanaio - Hawaiian system is practical, use-based, land manipulation/production. Haole is ideological, belief-based, land worship/religion. Both espouse man-land harmony, but Hawaiian is based on kinship and historical/genealogical ties to land and place which legitimizes land-use decisions. Haole is legitimized by 'feelings for the land'...

APPENDIX III

THE NEW AGE BELIEF SYSTEM AND DEVELOPMENTS IN KANAIO

The New Age phenomena, an outgrowth of a multitude of exploratory philosophical and religious dialogs undertaken by groups and individuals during the 1960's and 1970's has become a potent marketing and imaging force in modern American society. It is worth noting that one reason that the movement has become so powerful is not just the rapid increase in converts to several hundred thousand but also their socioeconomic situation within Anglo-American society. As Melton points out:

> ...the movement has been able to penetrate and even develop its largest constituency from single, young, upwardly mobile, urban adults. Such upwardly mobile persons are most accepting of the processes of transformation, which they know naturally accompany increasing career success... New Agers are, as an affluent social group, among the most capable of providing firm support for a growing movement... (Melton 1990:XXX).

One of the more fascinating aspects of the New Age Movement is the tremendous diversity of approaches to achieving (and continuing the cycle) of transformations. The Movement is notorious for appropriation of spiritual beliefs, ceremonies, concepts and ritual tools from other diverse religious and philosophical orientations, most from non-Christian backgrounds, and the vast majority from non-European. There is a strong central belief in the 'primacy of native peoples' and a feeling that indigenous populations have a more clear understanding of the transformational process. This belief is based on the theosophical and parapsychological backgrounds of the New Age Movement and helps to explain the proliferation of both Native American and Asian ritual paraphernalia out of their traditional context. As Melton notes the transpersonal psychologists, who were a key synthetic element of the New Age development in the 1950's and 1960's, were in large part responsible for this in that:

> Their methodologies separated particular practices (such as a meditation or yoga technique) from the religious ideological context in which they had been developed and

justified their free movement from one to another. Now, for example, one could practice a Zen meditation without being a Buddhist or chant mantras without becoming a Hindu. (Melton 1990:xxvii)

While the phenomenon is typified by its eclectic approach to techniques and concepts that seem to "work" rather than a truly coherent belief system, there are common underlying beliefs that link the disparate aspects together. Primary is the engineering or technical aspect -- much of the New Age phenomena is handled in a very pragmatic, rational approach, combined with more traditional concepts:

> Any engineer will tell you that whenever two objects resonate in a harmonic vibratory state, energy is exchanged. And so, as Palonghoya beat his drum, life-force energy came coursing down into the navel of the Earth as the South Pole, and streamed down into the crystal at the center of the Earth. This magic stone redirected the life-force energy in all directions, like the fluffy seeds on a ripe dandelion head. The energy then rushed upwards, emerging from the Earth's crust. As the energy broke through the surface, the entire planet came to life. At some places the life force was more concentrated, due to the structural magic of Poqanghoya at the North Pole. These special nodes of concentrated vitality are the sacred places, the Hopi elders maintain. They are the "spots on the fawn," places of light, power, creativity, and healing. According to the Hopi, without these places and their powers, the world would fall apart. (Swan 1990:45)

> As humanity rushes into an age of ever-increasing technological sophistication, and at the same time becomes more aware that technology unconnected to nature's laws is suicidal, it becomes apparent that traditional wisdom holds keys to restoring sanity and balance to our lives...
>
> Carl Jung once wrote that people cannot conquer a new land until they have made peace with its spirits and their minds have sunk to the level of its indigenous inhabitants... What is needed is a new legitimate paradigm to "mind the Earth," as Joseph Meeker calls human-nature harmony. New words and concepts must be conceived and integrated into a new Earth language which can articulate a consciousness rooted in an honest experiencing of place.
>
> With or without Indian guides, there are certain places which draw us to them, and we need to pay attention to these feelings. (Swan 1990:76)

"The Mother Earth has special places to cleanse your body, mind, and spirit," asserts Lakota medicine man Wallace Black Elk. At such places the energies and spirit of the place are especially suited for absorbing negative energies, and recharging one's personal life force. The actual purification processes vary considerably...Hawaiians bathe in sacred waterfalls....

In the Indian world, health and wisdom arise from maintaining positive harmonic sympathy with the vital forces which keep life systems moving... In the Indian cosmology, some geographic places are best for purification, and each of these places is unique in its own right. (Swan 1990:48)

...I have been gathering data on the phenomenology of personal experiences associated with certain places...the common element in all cases was a feeling of being drawn to a certain place by a pull which seemed to arise from a source beyond normal rational consciousness. Then, upon reaching the destination, an experience unfolded which was out of the ordinary in terms of inner experience. (Swan 1990:84)

A number of people interviewed described automatic unions they experienced with parts of nature while visiting sacred places. Having gone to a sacred waterfall on Oahu, a young man felt sleepy and lay down in the shade to rest. Suddenly he felt as if he were leaving his body. He surrendered to the pull and found himself drawn up into space until he merged with the sun. During this brief moment of union, he felt oneness with the fiery sun and experienced heat, warmth, and peace. (Swan 1990:90)

In reviewing the variety of unusual experiences reported...a common pattern emerges. Initially the people about to have the experience feel drawn to the place by a source beyond normal human consciousness, as if they were being guided to be at that particular place at a certain time. Surrendering to this magnetic pull, they travel to the place. As they reach their destination, a sense of emotional arousal and extra energy are present. Then something happens which seems to "trigger" their mental process, shifting their mindset into some new dimensions of consciousness. In this transcendent state, unusual events take place in which the normal time-space frame of reference is non-existent, and the personal experience is intense and engages mind, body, and spirit. While in this state of expanded mindfulness, an extraordinary feeling of unity with reality occurs, and unusual events happen in the surrounding world... Finally, when consciousness returns to normal, the participants integrate their lives at a new and more

meaningful level, often resulting in changes in their careers and personal lives. (Swan 1990: 104)

This pattern of spatial and spiritual relationships seems to be the pervading logic of life-histories for the haoles in Upper Kanaio, though they went through this experiential cycle long prior to this exposition by Swan (most in the late 1970's to mid-1980's). This spirituality or discovery is also often brought up when the lack of concern for clear land title or building rights reflect a dialog -- the feeling that they have been almost passive participants in an event, and that "Kanaio" (as a superorganic entity) will provide or take care of them in terms of residence and lifestyle.

"North of Honolulu on the New Pali Road, the turn-out at the summit for the Nuuanu Pali Lookout offers a spectacular view of the north shore of Oahu. Looking makai, which means "seaward", there is a large bright-green spot dotted with open water ponds. This is the Kawainui Marsh, the largest freshwater marsh in Hawaii, home of the endangered Hawaiian coot and the Hawaiian gallinule, the two birds which brought fire to the islands. In the Hawaiian traditional mind, this marsh was a very sacred place... Guarding the marsh are the mo'o, two women who can change into the shape of lizards at will. They are the daughters of Haumea, the Earth goddess and mother of fertility who also resides here.

When one reads about mythic tales like these, they seem like great fantasies, perhaps inspired by unusual landforms. In the traditional mind, however, myths are forces and intelligences which live in the other world, and which can visit people in dreams and visions, or seep into their minds and move them to do certain things at various places. If one walks out onto Krider's rock, a house-sized boulder on the west shore of Kawainui, and someone mentions Haumea, people fall silent and some begin to cry. Kapunas (elders) like Auntie Thelma Bugbee say this is because Haumea's spirit is strong there.

The mythic identification of place, which Amanda Coomaraswamy called landa-nama, has tremendous importance to primal-minded people...

According to indigenous people around the world, the living landscape is filled with mythic beings who live at various places, and even when ceremonies are not conducted to propitiate the deities, seeing, thinking, and talking about these places can keep their values in mind, which aids cultural stability. In Polynesia, you can tell if traditional people like you according to which places they mention in their conversation, for to say the name of a sacred place is to call up its sentiments, which is like a gentle blessing.

People scoff about living myths, but those people who live around the Kawainui Marsh are not so skeptical. It seems that every so often the local police get a call from some worried person who has seen two women wearing white robes walking around out in the marsh, near the dangerous muds which could swallow them up. The police can never find these adventuresome women, but the calls keep coming in. Some say that this is to remind the people that the mo'o still live and want their marsh to stay protected. (Swan 1990:63-64)

The Development of the Black Hat Temple in Kanaio

The history of the building of the Black Hat Buddhist Temple in Kanaio is useful both as a view of the power of the place, but also as a single example of the process by which members of the Upper Kanaio community ended up as residents of this section of Kanaio. The following discussion is based on a series of interviews conducted with several individuals, chiefly J. M. who is the constructor and caretaker of the Temple and grounds.

When he (J.) first saw Kanaio he felt a connection with the place and the people that had lived here in the past (the Hawaiians). Kanaio felt special, and had a very special nature to it.

In the early 1970's (D.M.) bought 20 acres in Kanaio that was being sold to cover a gambling debt. D.M. was into Zen at the time and saw the land as being suitable for a Zen retreat, so in 1971, he and his wife moved out onto the property. The property included the old pastor's house (pastor to the Kanaio Church), lantana up to the top of the truck's cab, and was generally very dry, barren and forlorn. Given the lack of fences or marked features no one was really too sure what the property boundaries were, but given the lack of nearby neighbors, except for the Mendez downslope (Lower Kanaio), buildings were constructed based on estimated property lines. The community continued, with some growth and change of members, some leaving the island, others moving to Makena or Huelo.

J.M. noted that while some places in Kanaio are empty simply because they were never used, the *mauka* outcrop above the present temple is an example of a place which just appears to be empty but in reality has a feeling or imprint of past events, as the Hawaiians, because of their love of the land imprinted their energy on the land. In 1979-1980 the landowner (D.M.) decided that he wanted to do something with the property other than the meditation center,and wanted to sell the land. Prior to this several lamas including the 16th Karmapa were brought out to Kanaio by Upper Kanaio residents, which is a unique manifestation of the power of the place to attract such spiritually powerful individuals.

J.M. was involved in the construction of a stupa in Huelo during this period (1976), the second outside of central Asia. The Karmapa blessed the stupa, and informed a student that

he felt Maui was a "pure land" place, and suitable for a retreat. By 1980, now residing in Kanaio, J.M. felt (as did the lamas) that Kanaio was a suitable spot for another stupa, and possibly the retreat. So in 1980, when the Karmapa was in Honolulu, J.M. approached him and asked if he would be willing to bless the foundation site of the yet-to-be constructed stupa, and Lama Rinchin came over that year and inspected the location were the temple now stands. Originally the stupa was planned slightly downslope, but when Lama Rinchin arrived in 1980, D.M. and H.M. were convinced to donate the property over, which kept the property clean and suitable for a retreat.

In 1981 J.M. moved up to the temple site and started construction of the stupa, temple building, and Lama Rinchin's retreat house. The stupa was constructed in 1981 and dedicated in 1982, and contains ashes of the 16th Karmapa who passed away on November 5, 1981. The temple grounds were blessed in 1982 and were completed and blessed in 1991.

The stupa is set up in the center X of the four "visible corners of the property". Stupa are normally oriented with the Buddha to the east, but Lama Rinchin was there when they set it up and he shifted the east face to the south and said that was the orientation that this stupa should have. (Field interviews 6/15/92, 6/16/92, 6/28/92) Postscript: Stupas always maintain their own mandala directions regardless of ground orientation though it is best when the two co-incide. (personal note 3/22/95)

Ho'omanamana in Kanaio

This documentation is useful for understanding the pattern of ritual logic under which some of the *mauka* Kanaio residents operate. As this material has not been evaluated to any degree in the traditional literature other references are not available. As the beliefs determine behavior in Kanaio it is at one level irrelevant to what degree the beliefs are valued outside the place. The documentation was kindly provided by informants during the talks we had in Kanaio.

While this belief system is often referred to as Hunaism JM was kind enough to provide an explanation for the divergence in terminology:

According to Daddy Bray the Old Hawaiians did not refer to their spiritual practice as Huna, the Hawaiian word Huna meaning "hidden" was employed by Max Freedom Long to label his interpretation of Hawaiian spiritual thought and practice for publication throughout the world. This subsequently popularized the notion that Huna was what the Hawaiians themselves called their spiritual practice. According to Daddy Bray it was called *Ho'omanamana* when referring to the practice of the spiritual arts. Daddy Bray himself

disagreed with the philosophy espoused by M.F. Long as well as the label "Huna".(personal note 3/22/95)

The relationships between the Hopi, Daddy Bray and a spiritualistic belief system called *Ho'omanamana* (sometimes referred to as Hunaism due to popularizing by various authors) are extremely complicated and worth a dissertation in their own right. The major relationship to Kanaio-A'uahi is that the belief system is prevalent among some of the Upper Kanaio community. The key point of focus is that this belief system delineates how they view themselves in relationship both to the landscape and the past Hawaiian inhabitants. It provides a link or relationship between the new (*haole*) and the old, and thus legitimizes their residence in Kanaio. It also provides a codified way of describing their views towards the environment and each other. The excerpts below have been taken from a letter by Carpenter (1992) and are quoted in full to minimize distortion from the original meaning.

> Papa's [Daddy Bray] ancestors departed Heukovi village in Hopiland, near Oraibi, because they were Sun Clan People and amongst the strongest miracle-manifestors of the Hopi -- just like Dan Katchongva was. They departed because Great Spirit of This Land and Life ("Maassauu" in Hopi language) TOLD them to go to the west as far as possible because there were people over there who were in great trouble. They went to the coast of California and some stayed there but others continued on to Hawaii and found the people under enslaving kings and dictators, and people actually eating each other. Yes they were killing each other and eating each other. They really WERE in BIG trouble because that kind of activity is a gross violation of Creator's Law in Order. Nowhere in this world was THAT practice in the Original Teachings of ANY one of the 3 to 5,000 Original Nations of Earth and I can prove that fact by the Writings in the Rocks, the Neolithic Inscriptions and ideagrams worldwide (and even including Antarctica, as we shall someday see). So Papa's ancestors became the strongest "line" of Kahunas in Hawaiian history and The Aloha Spirit DID survive in Hawaii, and right down to the present day. With all of this confusion and truth-seeking in the world today I think it is very important for us to tell the truth and help restore Creator's Law(s) in Order...
>
> Another thing, I have been talking with Dan Budnik, former President of The American Photojournalists Guild who just returned from photographing rock writings along the Great Bend of the Lena River in Siberia. There are more petroglyphs per square mile, and in greater variety, than anywhere else on earth excepting Ayers Rock ("Loaf Mountain") in central Australia and around Oraibi, Village in Hopiland. So I think Great Bend was a "staging ground" or "rest and rehabilitation center" or a "jumping off place" for the explorers and settlers on East-West Land as they went there

from North-South Land (the Americas) during the 4 great "migration waves" to "The edges of the land." I have not yet seen the photographs he took... During our talk Dan told me of petroglyphs in Hawaii that show 4 different migrations there and he wants to take Hopi Chief Martin Gashweseoma there to try and read them... Martin is very good at reading rock writings and Dan and I both learned a little about it from the late John Lansa of Oraibi who was also very good at it.

Thor Heyerdahl's book "AMERICAN INDIANS IN THE PACIFIC" only tells of 2 migrations to Hawaii but there were Menehunies (black, tattoed smaller people already there when the first dictators arrived). Thor Heyerdahl also did not know about the migration of Sun Clan from Hopi to Hawaii after the first 3 migrations were completed and the people began to become corrupted again. So I want to see that rock with 4 different aged writings on it, and I think Martin should see it, and I think that the message on that rock may be of importance to many other people in this world at this time. (Carpenter ms 1992)

[The majority of the following text comes from a transcripted interview by Joy Gardner (1992?) of C. Carpenter.]

Daddy Bray told a story: he was living in a hotel room in Honolulu. He woke up early one morning, maybe two o'clock or so. There was a fire right in the middle of the rug in the middle of the floor. He thought the hotel was on fire. When he finally got his thoughts collected, a voice came out of the fire and told him to go to the Mainland and investigate a religious rebirth that was taking place there...

He came to the Mainland, and stayed with either Schwabacher or Fryrof of the famous printing firm in San Francisco, whom he had met ...during the time that Daddy Bray was a guide in the Throne Room in Honolulu, for the tourists.

When he was serving as a guide. He'd been told by his aumakua (probably Pele) to teach white people, the Haolis, something about Hawaiian magic, and so he'd try. The other Hawaiians were really looking down on him for fraternizing with the Haolis. Still he had to teach them what he could because the aumakua told him to do so. Most of the white people didn't understand what he was saying, even though they had that white light around them. But a few did respond...

"But," Daddy Bray then said to us, "I've been here in Los Angeles. I've looked around for a religious rebirth, and all I can find is a bunch of religious cranks. I don't know what I was sent over here for, but I do know that I don't belong here, and in four days I'm going back home to The Islands again."

So then he turned to me, and he asked me those four questions that Hopis ask of high-class people. Not that I was a high-class person, but I had some information. So he asked me (1) where I was from, (2) what my name was, (3) what my religion was, and (4) why I was there, in Los Angeles. In the course of answering those questions, I had a chance to bring out a brief review of the Hopi Message of Peace, which tells (1) where we as human beings came from (the underworld that was destroyed at the last great cleansing or purifying of wickedness off the face of the earth) -- where we came from, (2) why we came to this land, (3) what happened to us after we came here (how we met the Great Spirit and received His permission to live on this land with Him provided we followed certain specific instructions as to our way of life and our religious practices); (4) what is happening to us now (the period at the end of this long era in which we're being tested and tried to see if we can remain faithful to our original instructions, no matter what happens to us) .. and then the last point (the fifth finger of the hand), (5) what may happen to us and to all the other life forms on this earth if we as human beings do not correct ourselves and our leaders in accordance with our own sacred Original Instructions, while we still have time -- if we want to. Plain.

So as I answered his 4 questions to me I gave him the five basic points of the Hopi Message of Peace, and then I turned to him and asked him if he had any teachings or prophesies at all similar to these. I knew that the Hawaiians did, but I was checking this guy out to see how much of a Hawaiian he really was. I knew Hawaiians had similar teachings or prophecies because I already had years of contact and exchanging of communications with George D. Robinson, who, though he was not descended from Kamehameha -- whose blood line died out, for some reason -- he was from the side of the family whose blood line did <u>not</u> die out (an uncle of Kamehameha's), and he still had the Hawaiian royal bloodline in him. I always had hopes that his descendents could reclaim the royal lands of Hawaii, which is a third of the land area of Hawaiian Islands and do "a big thing" over there. (He wanted to start some traditional villages for the old people, he said...

Daddy and I went off to one side and talked more and more. He'd ask me questions. I'd try to give him more details on what I'd already told him, explaining all the while that I was just a messenger; I wasn't a leader. And what I was telling him was the best I knew, but it wasn't exactly right, and if he wanted to hear it exactly right, he had to go talk to those Hopi leaders and get it from them face-to-face...

He [Daddy Bray] said, "They ['aumakua] tell me this is the religious rebirth I was supposed to investigate, over in North America." He says, "In all my years in Hawaii, as far as I know, I never met another Indian. I certainly never heard of Hopis before.

How'd the Goddess Pele know what's going on in Hopiland? I want to go talk to those Hopi leaders."

So of course the answer to his question is a long story, but we know how She knew what is going on over here. So he says, "But -- since I represent a high-class family from Hawaii, I have to go in a traditional way, and that means I have to send a messenger ahead of me, one day, to let the Hopi leaders know I'm coming so they can prepare for me."...and so while Bob Leutweiley, famous Quaker pacifist from Coopersburg, Pennsylvania was visiting with some of the Hopi leaders I'd tell other leaders, "Hey, this Hawaiian is coming. He may be the biggest Poakka ("Two Heart", i.e., desires both good AND evil) in the world, I don't know, but he's got power. He says he's going to follow me one day. Maybe he will, maybe he won't.

"But his name is Daddy Bray. He was being raised by his Grand Aunt in the Court etiquette of traditional Hawaii. And Governer Dole heard about it. He was so afraid they were going to raise up this revolutionary Hawaiian leader -- The Big Five had already put down one revolution, you know -- and grab control of the islands. -- so Governor Dole's co-workers are afraid of this young revolutionary leader coming up, so the Governor grabbed him -- and used the word "adopted," adopted him, took him into the Governor Dole family. So here's this kid who'd been trained in Hawaii Hoomanamana, being raised by the Governor of Hawaii. So when the other Kahunas and chanters are being put in jail for practicing paganism, they didn't dare touch Governor Dole's kid. So he was allowed to practice openly, and therefore Daddy Bray became the most prominent or famous "chanter" or Kahuna in the Hawaiian Islands."...

"Well", Thomas Bermyacya, translator and interpreter for Hopi traditional and religious leaders, said, "they're laughing because one old man in the back of the kiva -- when he saw Daddy Bray coming down the ladder into the kiva that old man said, "What village is that man from? His face is familiar, but I just can't place him."

That's when Thomas told him, "He's from Hawaii, in the middle of the Pacific Ocean, a third of the way around the world." So all the other men in the kiva laughed at that mistake. But then I didn't feel so bad about thinking he was a Hopi when he walked into Wing Anderson's office. Even a wise Elder Hopi thought he was a Hopi.

And he was! Come to find out. Because down in the kiva they compared migration stories (that's the histories), the present problems, the future prophecies, and in the process, the Hopis checked out a few key words to see if they were the same in Hawaiian language because, although the stories dovetail perfectly. Every original, traditional, nation is also supposed to have a couple of words in the Hopi language, which strengthens the Hopi's belief, or teaching, that when their Maasau (the Great Spirit of

This Land and Life -- now many call him Bigfoot) split the people up into different nations. He gave them each their different languages. But he gave each of them a few words of the language he entrusted to the Hopi as one of the signs, or symbols, when they reunite in these last days, that they really did all start from the same place, near where Grand Canyon is today.

So, it all started from there, when they were split up and sent out to permanently explore, claim and inhabit the land surface of earth. At first I thought the Hopi meant just North America. Now I think it's worldwide, as I talk to traditionals in different parts of the world. The point is that the Hopi couldn't find any Hawaiian words that dovetailed with theirs, and that was a mystery to them. Because everybody else they had compared Original Languages with DID have some words the same as Hopi.

During that meeting in Shungopavi they told Daddy Bray from the Hopi Knowledge how his people had reached the western shore of North America. He didn't chant for them the Hawaiian history which tells where his forefathers came from the shores of Kahikiku, which the anthropology professors at that time said was Tahiti, but he said means "sunrise." We came from North America. The place we set sail from on the coast of North America had these gigantic trees growing right next to the ocean, which is what me made the dugout canoes out of to go out to Hawaii, and due East of it is a great grey mountain with snow on it all year round."

Well, there are four places on the coast of North America which fit that description, and all four of those places have got verbal histories of Indians that just disappeared overnight. The people who stayed behind and tell these histories don't know where they went, or where they came from. The strange people just mysteriously appeared, stayed around for awhile, until they learned how to work with the ocean aumakua (unseen helper persons from the lowest to the highest) and then suddenly disappeared.

So I don't know if it's down at Big Sur -- those Essalen Indians - that his forefathers set sail from, or up at Humbolt Bay, west of Mt. Shasta, or Puget Sound/Olympic Peninsula, or north tip of Vancouver Island in British Columbia, that his forefathers set sail from. But we <u>do</u> know that they left the coast of North America and to this day, after some of the Pacific storms, some of these great big logs from the Pacific Northwest wash ashore on the beaches of the Hawaiian Islands with "Weyerhauser" stamped on their butt. So there <u>are</u> currents and winds that can take people to Hawaii, even if they're just riding on a big log stamped with Weyerhauser on the butt.

But Daddy Bray didn't know how his ancestors reached the coast of California, Kahikiku. He'd met Jane Penn (near Benning, California) and after the meeting with her, he said, "She looks just like some of my relatives. Just <u>exactly</u> like one of my

relatives." He said, "I think she's some kind of relative." Well, we found out in that Shogmopavi village kiva that she was one of Daddy Bray's relatives -- more than 27 generations "removed", of course. Cahuilla (Kahweah) indians, descended from Hopi. Daddy Bray's family, Sun Clan family, descended from the Hopi village of Heukovi near Hotevilla and Oraibi.

The Hopi elders, through Banyacya, their translator and interpreter told Daddy about the village of Heukovi being given instructions by Maasau -- they were Sun Clan people -- to go to the West as far as possible, because there were people out there that were in big trouble and needed help. Hopis knew those Sun People left Heukovi Village and finally reached the coast of California, but they didn't...

So the Hopis know anybody among them had enough courage and enough strength, were sincere enough in their religion and were brave enough to keep on going to the west after they reached the Pacific Coast, til Daddy Bray come back to Hopi with his report and dove-tailing traditional histories. Well, he checked through and it was either 24 or 27 generations before that his forefathers left the shores of Kahikiku, and so it's been about a thousand years since the Hopi had received any word from "the people who went to the west as far as possible." That day, and in that kiva was the first report that the Hopi had received back again. Yes, those oral traditions, those ancient verbal histories, contain factual information from those miraculous people that they had completed their duty, and were still fulfilling that duty as best they could, those ancient verbal histories were still accurate enough to be easily recognized and positively identified. So words don't have to be written down in black and white to be remembered...

So then when they were finished with that kiva meeting, Daddy asked the Hopi if he could leave a blessing with them before he departed. And they said they would appreciate that. So then he brought out his "gift," his voice, his chant, and he sang his chant, and I noticed some of the old men looking at each other out of the corners of their eyes, down there, in that kiva. But I didn't know why those respected elders were doing that. Some time later Thomas asked me, "Did you notice those two men look at each other out of the corner of their eyes there in the kiva? do you know what that was about?"

I said, "No."

He said, "Well, that sacred chant, that Blessing Chant that Daddy Bray was singing, was almost exactly one of the most sacred Hopi chants. It's so sacred it's never even sung above ground. It's just sung in the kiva."

So when the Hopi heard that Blessing Chant in the kiva that "clinched it." Because in that ancient chant, he was using the ancient Hawaiian language and therefore revealed the Hopi words in traditional Hawaiian language they had been searching for, he was using the Hopi words. Yes, now we find out, after I've been to Hawaii... Craig Thurston ended up living on Maui in a teepee, and the tourists used to fly over and circle around over his teepees there, and said "This is the only Indian village in Maui." He told me that from his studies the missionaries had somehow changed the Hawaiian language and taken all the "r's" and put "l's" in there, so that Haleakala Crater is really Hareakara -- like Ra in Egypt, for the Home of the Sun.

Isn't that far out? And that ties in with George Robinson, descended from Hawaiian royalty. Daddy Bray was descended from royalty directly; but he was also descended from the strongest Kahuna in the history of Hawaii, a man named Hewahewa. The Sun Clan people came over to "straighten those guys out" in their cannibalism, and in their blood rituals and ancestor worship as opposed to CREATOR worship, over there. There were still pacifists there in Hawaii when Bray's ancestors arrived, but they were really being crushed in a hurry, and needed these pacifist Hopis to go in there and straighten out those bloody dictators. They weren't straightened out completely, but at least the pacifists survived to this day. The Peaceful People (that is what the word Hopi means) are still there, the "Aloha Spirit" survives in Hawaii.

George Robinson told me his family history from the time they lived at the western end of the Sahara Desert, and the time when that "dryest desert in the world" was all covered with grasslands. A lot of people started building cities there and thus, of course, became corrupted. so the country dried up and it's dry to this day -- the Sahara Desert. Then the people who wanted to survive, to be good, moved eastward, he said, to a fertile valley, which he assumes is the Nile Valley, and settled that. There, in time again, they started building big cities again, and began having dictators again. So again the few righteous people had to split off from the overwhelming wicked ones. George said, "We looked, we travelled the whole earth over, in our spirit bodies, to find a spiritually clean and righteous place to migrate to,and," he says, "we finally found this place Polynesia. It was almost on the exact, opposite side of the earth from Egypt. And in Polynesia we found Hawaiian Islands, also another island -- maybe Tibet, or someplace --" those were his exact words. But Tibet is not an island. Yet that is what he said:

"Another island -- maybe Tibet or someplace. Part of us went to this other island and part of us took the long migration to Hawaii, and" he says, "we took our time getting there to Hawaii because we knew if we settled down and stayed there for any

length of time, we'd start building cities again, and we'd start eating each other again, and that way of life don't work out very well," he said.

So George's ancestors finally waited until nearly the very end of this era before they went to Hawaii, the place they knew about before they ever departed from Egypt. He said that when they got there, there were already people there. He was from the royal class, big shots, the class that eventually produces those doggone dictators, "we have been in Hawaii ever since." That was his story.

So Daddy Bray's thing about Hareakara -- I mean, my use of that word Hareakara instead of the modern Haleakala -- illustrates the fact that the Original and Ancient Hawaiian language has been changed -- and I can understand now why the missionaries would want to change it -- dovetailed with what George Robinson told me. When I finally got George Robinson and Daddy Bray together, since they're from different families, there was a little envy, or suspicion -- mutual suspicion. But they were both working with the Goddess Pere, or Pele. So that was something they had in common between them. But there's still this little family -- not competition ... well, different families have different responsibilities, and that "difference in responsibilities" manifested between them, but still they were cordial and friendly with each other and it was great to see them meet together...

Yeah, Daddy Bray had the strong miraculous physical power plus the healing power. George Robinson had the strong miraculous healing powers, plus other miracle powers.(Gardner ms)

The Bock Saga and Kanaio

Unlike the followers of Hawaiian-based religious systems in Kanaio, the Bock Saga argument is not strongly tied to Kanaio by place-specific references but rather the interests of a particular resident. In order to minimize the distortion, I have provided a copy of the document below, which is titled "LeminKainen Tempeli and THE BOCK FAMILY TREASURES CHAMBERS:

What is today in part called Finland was at one time called *VINLAND*, *Vin* [say "veen"] meaning *wine* but refering to the *VIN* necessary for Human procreation, named in *Rot: sperma*, in English, sperm.

Being few in numbers that but gradually were increasing as the breeding and information system of *PARADISET* brought more *pipol* inot the *plan et* to create and

populate more ringlands, the *HIDENS* understood that *if* for any reason the (Human) *sperma* [only Humans have S PER MA) from which all are born were to degenerate, OUR species would die out and the *plan et* would fail. Hence there was great, sincere and profound appreciation both for *sperma* itself and for the system which insured its highest and unadulterated quality and health from generation to generation.

In time, this appreciation began to express itself VIA *Jehova*, itself a system.

In *Rot*, *Je* means we give; *hov* means court; and a means *Aser*; *OK*; and *AKA*. Hence *Jehova* means "we give to the court of the *ASER*, of *OK* and *AKA*". The court of the *ASER* was the court of *Ra* and *Maia*, representing the moon as *King* and *Quena*, the first-born son and daughter of *OK* and *AKA* when the latter was beginning their earlier mid-Life roles as *BOCK* and *SVAU*, representing the sun.

The court of the *ASER*, the court of *Ra* and *Maia* who presided over it on behalf of their parents and of all *ASER* and *VANER*, was held at *Ra a pori*, today Rasepori, whch one can visit in *Tuna*, 90 kilometers west of Helsinki in *VEST ODENMA*, today in Finland spelled Uudenma.

Following *Jehova* according to individual inspiration, Talent [Nature gifts] and feeling, the *VANER* could spend many years or a Lifetime [they lived according to THE LIFE WHEEL which afforded Life's Weal with no impairment from any money wheel as enslaves us--separates us from nature--today] creating *aesthetiques*--esthetic objects of art and craft. The finest selections of these, "created for Tuna Te", were chosen to represent each ringland in each generation and it was of course a great honor (*forTunaTe*) to have one's piece, one's peace, one's lifetime labor of Love and appreciation, sent to *HEL*--sent to the north pole of the *Bal*--sent to *Racpori* the *cas tel* of *Ra* and *Maia* in *Tuna*, where it would rest, on view, upon a mantle frieze called *credence* [prounced as it were French] until the reign of *Ra* and *Maia* would draw to its close.

As each reign of *King* and *Qvena* would begin, *Racpori cas tel* would be empty of *aesthetiques*. As each reign progressed, the *cas tel* would gradually fill, and as each reign concluded, the *cas tel* had become the *plan et*'s *mo c um*--museum--giving *credence* [this time in English] *credibility*--to *Jehova*.

Leminkainen Tempeli in *Erst* [east] *ODENMA* played a most important role--served a pivotal function--in the breeding [or procreation] and information system of the *plan et* which must be detailed elsewhere.

Beneath *Leminkainen Tempeli*, deep inside *Kypelivorhe* mountain, carved out of the granite bedrock many miles thick and extending for hundreds of miles in all direction from today HELSinki, the BOCK FMAILY TREASURES CHAMBERS assumed the form of a cone [from which the Santa Clause hat more recently took its shape]--small at

the top, expanding downward from its *cupol*, from generation to generation, as along the spiraling inside balcony roadway, chamber after chamber with adjoining storerooms was prepared to receive, and later display, the *Maia Aesthetiques* in today's English shortened to "majestics"] representing the ever-growing and developing population and its *ca pa c Te* [say "Ka^h pa^hsee Tey]--capacity--to express feeling and experience in enduring material form.

When the *cas tel* of *Ra* and *Maia* had been emptied and the transfer of *Maia aesthetiques*--majestics--to the most recently created *salle chamber* complex had been completed, its door would be closed--not sealed--and before it placed a life-size gold statue of LeminKainen--*bar* [naked]--anatomically correct in minute detail as he stood at age 27 when becoming the *BOCK*--the breeder--for the period of the *plan et* thus represented in following *Jehova*.

The *Jehova* system was interrupted 50,010,011 years ago. It was resumed 9,011 years ago, continuing until 987 A.D. [as marked by the decidedly unnatural Gregorian calendar] when *Leminkainentempeli* was closed, sealed, and its entrance disguised and hidden to save it from otherwise certain looting and destruction at the hands of either the Greek Orthodox church moving northward to the east or the Roman Catholic Church moving northward to the west. *Ros Land* to the east fell under Greek Orthodox domination in 987 A.D. What is today Scandanavia to the west fell under Roman Catholic domination in 1008 A.D.

At that time in 987 A.D. it was declared by the *ASER*, about to begin their escape to the north: "That *BOCK* who is Living 1,000 years hence, on the 24 in 7, 1987 [July 24], at noon, has the right to open it." It is upon the broad shoulders of IOR BOCK--the last BOCK who will inhabit the Earth--that this awesome, profound, incredibly understandable task has fallen, to share as he does so generously, with his friends and with any who claim as well this labor to be their own.

The efforts made in recent years to excavate the entrance to *LeminKainen tempeli* and the BOCK FAMILY TREASURES CHAMBERS, Humanity's only "time capsule" form an ancient past of which it otherwise remains oblivious, have in themselves generated a modern saga of truly epic proportion. While this unprecedented work seems quite naturally inspired by a growing understanding of *ALPHERNAS BETEN* and *Rot* among a very few, the obstacles that have been and as of this writing are now continuing to be encountered, without doubt define the very meaning of NORMAL which characterizes the essence of modern "thought", or more accurately its absence, as replaced by human preoccupation with the MONEY WHEEL.

Given all of the foregoing but a single pointed question remains in the present writer's mind, can you dig it?

On July 24 1987 POSITIVE FOUNDATION was set up in order to disseminate and promulgate the teachings and story of BOCK SAGA.

It is a non-profit Foundation centered on the island of Maui, Hawaii and will become a central archive for all materials in any form produced about the BOCK SAGA. In this form it can become an information centre accessible to anyone wanting to promote or support BOCK SAGA and the opening of the Lemminkainen Temple.(Rice 1992:32)

APPENDIX IV

PLACE NAMES FOR KANAIO AND A'UAHI

Compiled from:

Elspeth P. Sterling. *Sites of Maui*. Ms. copies at Bernice P. Bishop Museum and Maui Historical Society.

Inez Ashdown. 1970. *Ke Alaloa o Maui: The Broad Highway of Maui*. various ms;

Land Commission Award Testimony: *Native Testimony for Land Court Awards and Native Register for Land Court Awards*. Ms. at the State Archives of Hawaii, Honolulu.

Pukui, Mary K., Samuel H. Elbert & Esther T. Mookini 1974(1981). *Place Names of Hawaii*(rev. ed.). Honolulu: University Press of Hawaii.

Pukui, Mary K. and Samuel H. Elbert 1971(1979). *Hawaiian Dictionary*. Honolulu: University Press of Hawaii.

Handy, E.S. Craighill 1940. *The Hawaiian Planter: Vol. 1: His Plants, Methods and Areas of Cultivation. Bernice P. Bishop Museum Bulletin #161*. Honoulu: Bernice P. Bishop Museum.

Historic Sites Division, Department of Land and Natural Resources. 199-1993. Files for archaeological sites within Kanaio-Lualailua Hills, Maui. Ms.

'Āhihi: Bay on east Maui.

Lit.= entwined. (Pukui, Elbert and Mookini)

Aiea: Boundary marker/*ahu* , where Kahikinui crossed old *alaloa*.

Lit.= '*Aiea*= Nothocestrum tree. (Pukui, Elbert and Mookini)

This land also adjoined Kahikinui [Auwahi] and where the boundary crossed the old alaloa mauka of Lualailua hills, was the ahu of Aiea. The old alaloa is quite a ways mauka from the present Government Road and overgrown with forest.

This ahu was located on the mauka side of the old alaloa, and was a large and well built pile of stones and was the first real ahu puaa pile of stones that I have seen. (Sterling:6)

'Aku: A *ho'oulu'ai heiau.*

Lit.= *'Aku*= Endemic lobelia (Cyanea tritomantha), tree 6-9 feet high, clustered leaves--leaves cooked and eaten like cabbage.

'Aku, a ho-oulu-'ai heiau lies on the seaward side of the road. (Sterling: 1)

Alaha: A village complex in Kanaio.

Lit.= ?

Site 50-14-1002= Alaha Village Complex: (Connolly 7/11/74). Also B.M. B1-1-22. A village site on the coast with enclosures, platforms and spring, agricultural pits and a indeterminate ko'a. "Wakalani in place names, SE Maui, collected from Sam Po, 1966-67--from Chapman 5/12/66... Site there, around a small bay at edge of a'a flow at beach. Vegetation is kiawe and lantana. 36 features both pre-contact to historic cattle pen. Unusual in that no readily identifiable religious sites. Land leased to Maui Factors. On map are 2 bays noted--Kalapawai and Kalani Kanaio at 14-1002 complex. Nat. Reg. site 12/90. (Historic Sites File)

'Alenuihāhā: Channel between Maui and Hawai'i.

Lit.= great billows smashing. (Pukui, Elbert and Mookini)

Anahulu: Stream and *ahupua'a*, O'ahu.

Lit.= ten days. (Pukui, Elbert and Mookini)

'Āpu'u: An *'ili* in Kanaio.

Lit.= 'apu= A taro cultivar, perhaps related to *'apu-wai*. *'Apu'u*= Hill, mound. (Pukui and Elbert)

LCA testimony: #3784 (Ohule): Section 2--pasture in Apuu 'ili. Apuu is the 'ili, 12 *kihapai*. (1)

LCA testimony: #3784B (Puupuu): Section 4--pasture in Apuu 'ili. Section 5--pasture in Apuu 'ili. Apu'u is the 'ili. (1-2)

LCA testimony: #5275 (Kekuhauloa): Section 1--taro 'ili in Apuu 'ili. Section 2--pasture 'ili in Apuu 'ili. At Apuu are 4 *moku mau'u*. (3-4)

LCA testimony: #5278 (Kainoa): Section 2--pasture in Apuu 'ili. at Apuu, 5 *moku mau'u*... (4)

LCA testimony: #5403 (Mai): Section 1--pasture, taro, sugar cane, potato in Apuu 'ili. Section 2--animal corral and house lot in Apuu 'ili. Section 3--pasture in Apuu 'ili. (4)

A'uahi / Auwahi: An *ahupua'a*.

Lit.= Smoky glow (Pukui, Elbert and Mookini). The misty-white smoke of the lava flows (Ashdown:13).

[from The Story of Kihapiilani] ...After a little while they went on to Auwahi for which these few lines of song are the beginning:

Hot is Auwahi

Glowing, the lava of Hauaka'ie'ie

It wasn't long before they came among the wiliwili trees and 'akoko shrubs. They reached Ke-ahu-'aiea which is the boundary of Honua'ula and Kahikinui. They climbed above the wtin[?] hills of Luailua[Lualailua] and the stream of Waiahu'alele and reached Olepelepe, the place where one sees Kaupo stretched out and Ka-lae-o-la-'ilio jutting out into the ocean... (Sterling:4)

Auwahi Forest

On Oct. 3, 1964 I made the trip to Auwahi Forest in the company of Henry Alau, Jr. and Brother Charles from St. Anthony's School. None of us were familiar with the area or the plants however we spent some time in the forest and were able to identify several specimens. We also saw one peacock. We continued along the jeep road which finally brought us down to the main road, Piilani Highway, about 6:30 PM.

We went to Waihou Springs and Auwahi Forest Aug. 1969. The forest is deteriorating rapidly. Many of the trees are covered with a choking white moss and are dying or are dead. (Sterling:6)

Ahupua'a Stone:

On March 15, 1883, we moved camp to Kanaio and pitched our tents near Kumukau's house. Kumukau was the leading character in this region...

The boundary work in this region was very interesting. One large ahupuaa--"Auwahi" was owned by Kamamalu, or rather Ruth Keelikolani at that time and this land was surrounded on all sides by Government land, so that I had to make a survey of Auwahi, the land was one of those awarded by name with no survey. This land also adjoined Kahikinui and where the boundary crossed the old alaloa mauka of Lualailua hills, was the ahu of Aiea. The old alaloa is quite a ways mauka from the present Government Road and overgrown with forest.

This ahu was located on the mauka side of the old alaloa, and was a large and well built pile of stones and was the first real ahu puaa pile of stones that I have seen. (Sterling:6)

Heiau at Auwahi Site 185 [A37-12]

Locat.= West of Lualailua Hills 50 yards South of junction of beach trail, on West bank of gulch.

Descript.= A small heiau of rough lava blocks, dimensions 50 feet x 60 feet. A low wall surrounds the inner court. At the North end is a platform 4 feet high. There is a smaller platform at the other end with a pit in it. (Sterling:6-7)

Best preserved but not studied site is Maonakala village near Keoneoio, and along with this sites at Make'e, A'uahi (now spelled Auwahi on maps)... (Ashdown:13)

Auahi or Auwahi forest

50 species of native trees, once. Maui hibiscus grew here. Mahoe tree--last one here. (Twin) Double fruit with, inside, a shiny "chestnut-brown" seed clasped in a scarlet aril. Olapa plant or Paliku. Kupaoa plant. (Ashdown:14)

Ha'ikū: Land section and village, East Maui.

Lit.= speak abruptly or sharp break. (Pukui, Elbert and Mookini)

Hale'ahu: A place, residence in Kanaio.

Lit.= ?

After Ma^{u}hu came to Hale'ahu- a wealthy native Ku'lani'paha'a lived there. When he died people dug up his property looking for money (none found). (Sterling:1)

Haleakalā: Volcano, crater and peak, East Maui.

Lit.= House [used] by the sun. (Pukui, Elbert and Mookini)

Hāna: District, town, and bay, East Maui.

Lit.= [poetic] rainy land, low-lying sky. (Pukui, Elbert and Mookini)

Hanaka'ie'ie / Hanakaieie / Hauaka'ie'ie: Name for lava in A'uahi.

Lit.= ?

After a little while they went on to Auwahi for which these few lines of song are the beginning:

Hot is Auwahi

Glowing, the lava of Hauaka'ie'ie (Sterling:4)

Upon their arrival at this place they began digging a pit which they left open on the top of the mountain. The rocks at Hanakaieie, at Kahikinui, are those that were dug up by Pele and Hiiaka.

{Note by EPS} = This had reference to a cluster of rocks in a field or section of aa rubble lava in the uplands, said rocks being noted for their grouping rather than extraordinary size. (Sterling:4)

Hanalei: Land division, village, bay, and river, Kaua'i.
Lit.= crescent bay. (Pukui, Elbert and Mookini)

Hanamā'uloa / Hanamauulca / Hanamuuloa village: Village site near Kiakeana Point, between A'uahi and Lualailua Hills.
Lit.= ?

Hanamauloa, the largest village, is situated at the shore below Lualailua Hills. It contains approximately 80 sites of all kinds which is about four times as many as the average village contained. Not all of those sites were used as human habitation, and it is difficult to determine which ones were so used. (Sterling:8)

Hanamauuloa is a large village near Kiakeana Point. The trail here leaves the lava flow and comes out into a grassy basin. The trail itself is 6' wide and has curbs 2' feet thick of slabs of stone. 70 sites were seen in this vicinity including heiau sites 180, 183, 184. The 28 house sites are large, the platforms covered with pebbles and coral. There are several large caves at the shore which have been used for shelters and are still used by fishing parties. A windmill and wooden cabin show that the place was occupied at a comparatively recent date. (Sterling:8)

50-15-1164= Hanamuuloa Complex: (Hommon 1/30/78). Letter from Inez Ashdown to Frances Jackson, Historic Places Review Board 1/30/78.

2. Recently I was invited to accompany Rob Hommon [by helo]...to overlook the Hanamuuloa site. I have been there many times on horseback but must say that an entirely different view is presented from the air!

Most of all, I was excited about the two Platforms having each a design upon the "floor", and made of what appears to be large white coral stones. I asked the two archaeologists if they had any ideas about what the markings mean; and also hoped they might let me have a report on their findings while they were studying the Complex from the ground that day. No luck so far.

3. We believed this complex to be a kind of 'industrial complex' where artisans of all sorts congregated to do everything from house-building to sharpening tools. We believed that the white-stone markings were associated with astronomy and navigation, both study and voyaging, etc.. Anciently, all Honua'ula from Nu'u to

include Pae'ahu was a huge village. Despite the earthquakes and lava flows the poe kahiko had held on and continued to dwell there. The heiau must have been both a school and place of worship, as in most villages. How the people walked, farmed, even remained upon that a'a lava area was a mystery to us. It has not changed today, either. Just the wondrous engineering and stone-masonry, the stone-paved wells and roads, all have seemed marvelous to me and my neighbors on Maui." [I. Ashdown 1/30/78]

A large coastal complex containing 97 features in 19 hectare area. Brief description by Walker (pp. 68, 93) as Hanamuuloa Village. Located SE of Lualailua Hills along 840m of shoreline. Bounded on N by Hoapili Trail, to E & W are rough expanses of a'a without features. The Western 600m is a broad fan of alluvial soil deposited by small streams. The rest of the complex is bare lava with small pockets of alluvial soil.

Contains-- 4 canoe sheds; series of grinding depressions; extensive surface midden; 14 habitation enclosures; 58 temporary habitation areas (includes 24 oval enclosures, 10 rectangular enclosures, 14 C-shape enclosures, 2 L-shape walls, 8 terraced platforms); 12 stone-lined fireplaces (within 10 structures); 2 heiau (Walker's sites #180, #184), 1 possibly luakini; 1 ko'a. (Historic Sites Files)

Hawai'i: Largest island in the Hawaiian group, 76 miles wide by 93 miles long. Also the collectie name for the island group. The name is common throughout Polynesia as Havaiki, usually as the name of the homeland or underworld. (Pukui, Elbert and Mookini)

Hekilipaihi / Hikilipahi: Fishing landmark. Heki'i= a point, Olowalu quad.
Lit.= thunder. (Pukui, Elbert and Mookini)

When Punalena is in direct line with the depression on Ka-lae-o-ka-ilio, it is there, at the same place, where Kiele is located. the main landmark is Hekilipaihi [Hikilipahi in Hawaiian text]. (Sterling: 10)

Holu Point: a landmark noted on maps and in Sterling (1966-7 1).
Lit.= *holu*= Springy, pliable, resilient-- as a mattress, to sway-- as palm fronds; to ripple, as waves; name of a star; name of a god. (Pukui and Elbert)

Honolulu: City and the capital of the State of Hawaii.
Lit.= protected bay. (Pukui, Elbert and Mookini)

Honua'ula: A *moku*. Congregational church at Ka-naio and nearby land division, Mākena quad, Maui. Cove and land sections, Kai-lua, Kona; *heiau* for human sacrifices, Wai-pio Valley, Hawai'i. Valley, Wai-mea district, Kaua'i. Point, north Lana'i. Valley, south Ni'ihau. See also Pu'u-honua'ula.

Lit.= red land. (Pukui, Elbert and Mookini)

Area between Nu'u and Paeahu was called Honua'ula. Now commonly called Kahikinui.

Area has not been studied thoroughly by archaeologists but valuable as *heiau*, house sites, etc. remain from antiquity. The Pi'ilani paved road from Keoneoio to Nu'u is about all that remains of the trail built by order of King Pi'ilani who died in 1524. His son, Kiha, is credited, but he simply completed the road round West Maui.

The Lalani Pu'u or hills made by *Pele* mainly from lava flows; Pu'u Makua is approximately 600 years old; Pu'u Keonehuna 700 years old; Kaumahina, over 1000 years old; Pu'u Naio and Pu'u Ka-lua-'Olapa 300 years old; Lua Palani 300 years old; Pu'u Pi'imoe 200 years and still dormant. (from informants.)

Best preserved but not studied site is Maonakala village near Keoneoio, and along with this sites at Make'e, A'uahi (now spelled Auwahi on maps), lower and upper areas all the way into Kaupo. (Ashdown: 12-13)

Hoapili trail is one name for Pi'ilani's road, but only because the governor had workmen lay pili grass over it when Kamehameha III was traveling it on horseback, probably late 1825 or so.

When I lived at Ulupalakua, the Honua'ula area was rich with Pili grass, tobacco, cotton, Ilima, and other native plants and trees, particularly Noni, Kukui. Now koa-haole is overrunning everything. Pili grass is becoming extinct. (Ashdown: 13)

The Ua-lani-pili used to make cloudbursts all in Honua'ula, along with the Ua'lani-pa-ina rain of Ulupalakua and these two rains along with Naulu kept the land fresh. I do not see them anymore. Sometimes a Kilihune blows a bit of moisture, softly, but the land is too dry. Pili grass should be planted. Even the Wiliwili and Neneleau are dying...Even the forest mauka seems to be disappearing. (Ashdown: 14)

Honua'ula, the Rich, Sacred Earth

...Each gully, hill, flatland, stream and area has a name which. properly translated, gives a wealth of material upon which the proper translator can found the history and legend of a nation of residents here on Maui since antiquity.

Each place-name is a part of a prophecy very meaningful to old and young people of today. At Kanaio, the Destruction, the man named Paea dwelt at Make'e and desired everything for himself. He brought punishment upon his wife 'Olapa and after destroying her was, himself, ground like stone into powder. His head and torso are Pohaku Paea at the Ana Muki; his lower body is Pohaku Paea in the Sea of Keoneoio where the spirits mourn at Ku-makena, Nahawale, and Maonakala which once was a thriving village. From there to Lelekea the Springs by Hale Ki'i the land is a picture of abandoned house sites, temples, fishing trails paved for easier travel, and dry river beds and once flowing Springs giving life to land and villagers. (Ashdown: 14)

In Honuaula, as in Kaupo and Kahikinui, the forest zone was much lower and rain more abundant before the introduction of cattle. The usual forest-zone plants were cultivated in the lower upland above the inhabited area. Despite two recent (geologically speaking) lava flows which erupted from fissures below the crater and only a few miles inland and which covered many square miles of land, the eastern and coastal portion of Honuaula was thickly populated by Hawaiian planters until recent years. A few houses are still standing at Kanaio where the upper road (traveling eastward) ends, but only two are now occupied. A number of Hawaiian families whose men are employed at Ulupalakua Ranch have homes near the ranch house. About these native homes a little dry taro is cultivated. Formerly there was much dry taro in the forest zone. (Handy: 113-114)

Sweet Potato planting times:

In dry localities wait until the ground has had several good soakings, then plant your slips and pray for more rain after they root; in damp localities wait until it is obvious that a rainy period has come to a close, then plant and hope for a season of light showers and plenty of sun. The Kona storms from December to February drench all windward localities which are generally dry in summer; hence late winter is a planting time in these places, but a time avoided elsewhere. However, the situation may be reversed, as recently at Ulupalakua and Makena on southwestern Maui, where, after continued drought unbroken even in the winters of 1932, 1933 and 1934, heavy rains came in late spring of 1934, bringing conditions favorable to planting. (Handy: 143)

The ancient Hawaiians planted potatoes in mounds (*pu'e*). Where soil is powdery and dry, as at Ulupalakua and Makena on Maui, the earth is heaped up carelessly into low mounds spaced with no particular precision or care. (Handy: 146)

Between Makena and the lava-covered region of Keoneoio (another famous fishing locality) the coastal region includes the small *ahupua'a* of Onau, Moomuku, Mooloa, Mooiki, Maluaka, and Kaeo. According to old *kamaaina*, these *ahupua'a* had in former times a continuous population of fisher folk who cultivated potatoes and exchanged their fish for taro, bananas, and sweet potatoes grown by the upland residents of the Ulupalakua section. A few Hawaiians still live here. One living near Puu Olai has a sizable sweet potato patch in the dusty soil near the shore; another raises fine potatoes in a low flatland of white sand near the abandoned schoolhouse of Makena. (Handy: 159)

From here [Kaupo] through Kahikinui, Honuaula, and Kula the sweet potato was the staple food for a considerable population, supplemented with dry taro grown in the low forest zones. This is the greatest continuous dry planting area in the Hawaiian islands. A few Hawaiians at Ulupalakua have sizable patches of sweet potatoes at the present time, and a few patches are still planted at Kaupo; but beyond this, the ancient subsistence culture has completely vanished from these vase *kula* slopes which are now given over wholly to ranching. The fishermen along the coasts of Kahikinui and Honuaula used to exchange their fish for sweet potatoes and taro grown by those living up on the *kula*; Hawaiian tradition gives ample evidence that the population of this now almost depopulated country was considerable. (Handy: 161)

Hulapapa: A place where Papanuiokāne *heiau* is located.

Lit.= *hulapapahehi* = Dance in which dancers use *papa hehi*--treadle boards--said to have originated on Niihau. (Pukui and Elbert)

Papanuiokane heiau Site 192 [B1-27]

Locat.= At Hulapapa, approximately 200feet above the upper Kaupo Trail.

Descript.= Platform 63 feet x 44 feet, of rough aa without pebbles or coral. Front is 3 feet high. Drums are heard from this heiau. (Sterling:3)

Hulupapa: A place where a heiau is, with a fig grove mauka of it.

Lit.= *hulupapa* = light brown, bay (as a horse). (Pukui and Elbert)

Another heiau is at Hulupapa, a fig grove lies mauka of it. (Sterling: 1)

Kā'anapali: Landing, village, and district, West Maui.

Lit.= Kā'ana cliff. (Pukui, Elbert and Mookini)

Kaeo: An *'ili* in Kanaio.

Lit.= *ka'eo*= Resentful, peeved, indignant. *Ka'eo*= Full, as food calabash; strong, zealous; hair gathered in topknot on head, as by priests for ceremonies. (Pukui and Elbert)

LCA test: #5403 (Mai): Section 7--pasture in haole potato in Kaeo 'ili. (LCA Testimony)

Kahawaihapapa: A point near Uliuli village.

Lit.= ?

Locat.= Village site of Uliuli located near the point of Kahawaihapapa... A well built koa stands on the point a few feet back from the shore... (Sterling:4-5)

Kahikinui / Ka-hiki-nui: A *moku*. Land division and forest reserve, Lualailua Hills quad.

Lit.= great Tahiti(Pukui, Elbert and Mookini). The big horizon. (Ashdown ms)

Ka-hiki-nui= the big horizon. Named by Hawai'i-loa-ke-kowa, the first navigator. Named the big island for himself, and others for his family. Pu'u Ani-Ani in Kahikinui is named for his father, Ani-ani-ka-lani, also a great navigator.

Hawai'i-loa "drew" the navigational triangle, from Maui to Kohala, Hawai'i, and to South tip of Kaho'olawe named Ke-ala-i-Kahiki [trans.= the-roadway-to-and-from-the horizon]. Kahiki doesn't necessarily mean Tahiti. Kahiki-ku is the entire horizon as far as the eye can see. (Ashdown: 12)

Area between Nu'u and Paeahu was called Honua'ula. Now commonly called Kahikinui. (Ashdown: 12)

Kahikinui, the Broad Horizon... (Ashdown: 14)

Kahikinui is a vast arid waste covered with what is probably the most recent lava flow from the now extinct crater of Haleakala. It is now uninhabited. Fishing is comparatively good along its rugged shores, and in former times Hawaiians lived in isolated communities on the broken lava scattered from one end of the district to the other, close to the sea or slightly inland wherever potable water was to be found in some brackish well or submarine spring offshore. I am told by an old informant, born at Kanaio in the next *moku*, that the Hawaiians formerly living along the coast of Kahikinui had their plantations of dry taro and other edibles inland in the forest zone, where the forests along the southern wall of Haleakala came much lower and where rainfall was more plentiful than it is today. (Handy:113)

Sweet Potato planting times:

At Kaupo on southeastern Maui planting is begun in August, when showers generally start, and no planting is done after April, when drought usually begins; but in 1933-34 the winter months were dry and rains came in the spring and summer of 1934. At Kipahulu on eastern Maui, just beyond the genuinely wet windward coast, there is normally one planting in September when winter rains begin in moderation and another in March when the heavy winter rains end and summer showers follow. (Handy: 143)

Where potatoes are planted in crumbling lava combined with humus, as on eastern Maui and in Kona, Hawaii, the soil is softened and heaped carelessly in little pockets and patches utilizing favorable spots on slopes. The crumbling porous lava gives ample aeration without much mounding. (Handy: 146)

From here [Kaupo] through Kahikinui, Honuaula, and Kula the sweet potato was the staple food for a considerable population, supplemented with dry taro grown in the low forest zones. This is the greatest continuous dry planting area in the Hawaiian islands. A few Hawaiians at Ulupalakua have sizable patches of sweet potatoes at the present time, and a few patches are still planted at Kaupo; but beyond this, the ancient subsistence culture has completely vanished from these vase *kula* slopes which are now given over wholly to ranching. The fishermen along the coasts of Kahikinui and Honuaula used to exchange their fish for sweet potatoes and taro grown by those living up on the *kula*; Hawaiian tradition gives ample evidence that the population of this now almost depopulated country was considerable. (Handy: 161)

Kaho'olawe: Island 11 miles long by 6 miles wide south of Maui.

Lit.= the carrying away [by currents]. (Pukui, Elbert and Mookini)

Kahopeakawa'a: A landmark linked to or same as Puwai.

Lit.= ?

Kahului: Port, bay and town in central Maui.

Lit.= the winning. (Pukui, Elbert and Mookini)

Kaimalo / Kaimaloo: An *'ili* in Kanaio.

Lit.= kai malo'o= Low tide, as when much of the reef is exposed. Dry sea. *Kai mālolo*= quiet sea, as in a calm cove. (Pukui and Elbert)

LCA testimony: #3784 (Ohule): Section 1--haole potato in Kaimalo 'ili. Section 5--pasture in Kaimalo 'ili. Kaimalo is the land, 5 *kihapai* of Irish potatoes, 1 *mala* of sweet potatoes. In this land, a house claim.

LCA testimony: #3784B (Puupuu): Section 1--haole potato in Kaimalo 'ili.

LCA testimony: #4151 (Kalawaiakumoku): Section 1--pasture in Kaimalo 'ili. ...I hereby state my claim for my 'ili of Kainalo. I have five claims in it: 1 *mala* of gourd, 3 fallow fields, 1 *mala* of Irish potatoes, a land, 1 *mala* of bananas.

LCA testimony: #5274 (Kaawaapahulu): Section 1--pasture in Kaimalo 'ili. Section 2--pasture in Kaimalo 'ili. Section 3--pasture in Kaimalo 'ili. Section 4--haole potato in Kaimalo 'ili. I hereby state my claim for 13 *moku mau 'a* at Kaimaloo...

LCA testimony: #5275 (Kekuhauloa): Section 3--pasture 'ili in Kaimalo 'ili. 4 *mala* of Irish potatoes are at Kaimaloo.

LCA testimony: #5278 (Kainoa): Section 3--pasture in Kaimalo 'ili.(5)

Kaipolohua: A cave in Kanaio, possibly tied to *Pamoe*.

Lit.= ?

The Story of Kihapiilani

...They [the chief's party] reached Ulupalakua, the place where Captain Mckee's houses are. They went down the road used by the inhabitants, mauka of the hills as far as Keakohi, next to Kanaio...

On this upper road...in Kanaio, they passed the cave of Kaipolohua, seaward of place of Lono, son of Pamao, the person about whom there is a story full of pathoes... (Sterling:4)

Site 50-14-1234= Kaipolohua Cave: (Hommon 10/31/73). A very large lava tube identified by Manu (Kuokoa Feb. 23, 1884) as cave of Kaipolohua... Vegetation is koa haole and Apple of Sodom bush. Mr. Henry G. Voss of Kula is the owner of the property.

Cave 56m long, 3.6m x 11.5m wide. No structures of cultural material noted. Just outside is 10m square enclosure--Voss says built turn-of-century as pig pen. Also terraced platform and retaining wall. Voss has been told that a former minister of the nearby Kanaio Church was buried in the cave in the twentieth century. The smaller of the two terraced platforms may be the grave monument. Nat. Reg. site 12/90. (Historic Sites Files)

Kalaeoka'ilio: A fishing landmark. A point at Kaupo, Maui.

Lit.= the cape of the dog [Pele's dog]. (Pukui and Elbert)

When Punalena is in direct line with the depression on Ka-lae-o-ka-ilio, it is there, at the same place, where Kiele is located. the main landmark is Hekilipaihi [Hikilipahi in the Hawaiian text]. (Sterling: 10)

The landmark is located in Kipahulu [for fishing ground Kiele]. It is the hill of Kalena, when it is in line with the depression at Ka-lae-o-Kailio. The stone of the cape is its principal mark. (Sterling: 10)

Kalapa'ula: A place.

Lit.= ?

Next to it [Hulupapa] is Ka-lapa-'ula. (Sterling: 1)

Kalena: A hill and fishing landmark. Land section and peak, central O'ahu.

Lit.= the lazy one. (Pukui, Elbert and Mookini)

Kalo'i: The *ahupua'a* bordering Kanaio to the west.

Lit.= ?

Then the lower section of Kalo'i- have an 'ohe tree (not bamboo)- sap used to gum branches for bird catching for one of the trees listed by Kamakau as a form of female prison god (found on Maunaloa, Molokai). (Sterling: 1)

Kalo'i House sites: Below trails and in vicinity of Black Sand Beach- a number of nice house sites. Behind are wells. (Sterling: 1)

Site 50-14-1238= Kalo'i Site Complex: (Hommon 9/4/73). Near the Kanaio-Wawaloa (14-1002) complex. Covers 20 hectares. Probable heiau, 3 pahale (house enclosures), 14 wells, 2 lava bubble shelters, a koa (fishing shrine), 9 ahu. Several shelters excavated by Kirch & Chapman in 1966, including B.M. site Ma-B2-1 & M8. Three named bays on map at DLNR-- Wawaloa Bay, Paina Bay and Kalama Bay, none of which mentioned on maps or other accounts. (Historic Sites Files)

Kalua'ilio: Dog-cave.

Lit.= ?

Kumukau's place= makai is a cave called Ka-lua-'ilio (dog-cave). Is at the edge of the place where Pamano met his death. (Sterling: 1)

Kaluakakalioa heiau: In Lualailua Hills above Hanamuuloa village.

Lit.= ?

Kaluakakalioa Heiau Site 183 [A37-3]

Locat.= Above village site of Honamuuloa near water tank. Elevation approximately 300 feet.

Descript.= A good-sized walled heiau 48 feet square. The walls are built of massive blocks of basalt to a height of 6 feet and 8 feet. They are 6 feet thick and have image holes in the top... The interior is divided into a lower and an upper court, each with its low terraces. The lower court is paved with flat slabs, coral, pebbles and cinders. The North East corner is the highest part of the interior. (Sterling:7)

50-15-183: Kaluakakalioa Heiau= (Hommon 9/4/73). Well preserved inland Heiau with complex interior features. Rectangular enclosure identified by Walker as Kaluakakalioa Heiau #183...

Very well built, 15.5 meters x 16.1 meters, walls up to 1.9 meters high x 1.9 meters wide.

50-15-1160: Kaluakakalioa Cave= (Hommon 10/31/73). Lava tube with also numbered as B.M. Ma-A37-5. Named as is near Kaluakakalioa Heiau (15-183). Is approximately 600 meters to the northwest of 15-183, 1.12 kilometers from the coast...

Weathered pahoehoe and soil pockets, lantana and low grass, with passion-fruit vines at the cave entrance. Formed by the collapse of a tube section, extends south of entrance for approximately 57 meters. About 7 meters outside the entrance have 2 massive (1.3 meters x 1.3 meters) walls which channel the tube into a narrow passageway. Floor rough, but there is a 3 meters x 3 meters cleared area, with coral abraders. In 1966 Ms. Jean Booth of Maui collecte a cowrie-shell squid lure, a piece of cut wood and a bird-bone 'pick' from the cave. (Historic Sites Files)

Kalua'Olapa: A cave in Kanaio below Pu'u Naio.

Lit.= ?

Ka-lua-'Olapa= in Kanaio, below Pu'u Naio in the ili of Kalihi and mauka of Keoneoio. (Ashdown: 15)

KaluaPapaka: A cave in upper Kanaio.

Lit.= ?

Ka-lua-Papaka= in upper Kanaio-Papaka area. Has a large opening and, until a landslide occurred midway, you could travel to the beach at Ahihi Bay in that lava tube cave. (Ashdown: 15)

Kanaio: An *ahupua'a*.

Lit.= the bastard sandalwood tree. (Pukui, Elbert and Mookini)

Location= Above shore trail several hundred feet near the aa flow on the Kaupo side.

Description= Large rectangular enclosure approximately 60 feet x 60 feet, of aa slabs (not chunks). In the walls are pieces of coral. Opening on the Kaupo side. Walls are 10 feet high, 3 feet thick. Depressions on top of walls possibly for images. From shore trail to this structure are scattered a number of stone cairns approximately 6 feet high.

Also in the vicinity are house sites, and semi-circular [C-shape] walls (for sweet potato).

Against the lava bluff are shelter caves, on top of the aa flow are walls forming shelters. The area is surrounded by an aa flow (and is apparently an old pahoehoe flow). The old trail must run from here to Kanaio village-see Hawaii Terr. Survey Map 1929. (Sterling:2)

Ko'a Ho-4 [B2-6]

Near the shore and below the trail and a little towards the Kula side of heiau [Ho-3] is a large pond (now dry). On the makai side is a rectangular platform which may be a ko'a. Coral on top. (Sterling:2)

[From Waiailio Village #2] On trail up to Kanaio [from village] 12 house sites seen, located on grassy bench among the lava flows, and several cultivation patches (potato likely). (Sterling:2)

From Hana-mani-o'a to Wai-aka-puhi we never fooled around with that sea. Pele had been angry with a certain man who was unreliable. She cooled her anger by destroying this Puhi-'o-'a there and filled his mouth with boiling lava. Plenty puki were there, huge ones. And the eel shadows were eery. The Ua-lani-pili used to make cloudbursts all in Honua'ula, along with the Ua'lani-pa-ina rain of Ulupalakua and these two rains along with Naulu kept the land fresh. I do not see them anymore. Sometimes a Kilihune blows a bit of moisture, softly, but the land is too dry. Pili grass seed should be planted. Even the Wiliwili and Neneleau are dying... Even the forest mauka seems to be disappearing. (Ashdown: 13-14)

In one sense, Ka naio refers to destruction, and it occured in Kanaio in 1736 or so.

Down near the shore is Ke awa naku (Ke awa nuku?) heiau. The Rolling Waters?

or a harbor-- Or is it Kanahena where that harbor of Paako is said to be where people were "given to the *mano*"? (Ashdown:14)

Each place-name is a part of a prophecy very meaningful to old and young people of today. At Kanaio, the Destruction, the man named Paea dwelt at Make'e and desired everything for himself. He brought punishment upon his wife 'Olapa and after destroying her was, himself, ground like stone into powder. His head and torso are Pohaku Paea at teh Ana Muki; his lower body is Pohaku Paea in the Sea of Keoneoio where the spirits mourn at Ku-makena, Nahawale, and Maonakala which once was a thriving village. (Ashdown: 14)

Site 50-14-1235 = Cave of 7 Coffins: (Hommon 7/17/73). A lava tube/bubble 100m NE of the base of Pimoe cone, surrounded by low rock knolls. Lantana main vegetation. Entrance sealed with a stone wall, nearby a small wooden shrine, shaped like a gabled house, with a statue of Christ and lamb and 2 votive candles. Did not enter.

Went on 4/13 with EPS and two teachers from Maunaolu College to see the cave--a year earlier had 1 burial with jade jewelry. On 4/13 the coffins were open, the contents strewn round, jewelry gone. Cave now sealed, quite small. 7 coffins, most smashed. 8 crania seen. Burials apparently within last 50 years [though several coffins had square forged nails]. Later heard that a group of students (?) had followed us there that day. (Soehren 1963 letter, Historic Sites Files)

Site 50-14-1006: Kanaio Mauka Complex: (Hommon 8/15/73). An early historic houselot complex in an arid area. Consists of several enclosures, walls, and terraced platforms. Sparse lantana, koa haole and Apple of Sodom bushes, and at the NE corner a thick tangle of fig trees.

A large terraced platform at the NE end is EPS HO-2 (B.M. Ma-B1-13)... Complex measures 105 meters (east-west) x 70 meters (north-south) of a'a, most on flat ground or base of 5 meters cliff. Has both historic and pre-contact artifacts. Nat. Reg. site 12/90. (Historic Sites Files)

Kanaloa Point: A point.

Lit.= ?

Lava tube with human remains and lava basin with pure fresh water near South shore Maui. From lower trail along coast, take the trail North along first gulch approximately 1/4 mile east (Hana) of Kanaloa Point. About one mile up the trail, approximately 600 feet level, just off to Right, east, are two tubes. Upper one leads down into two branches. Water basin in Left, east, Branch. (Sterling: 1-2)

Kāne'ohe: Land section, village, bay, stream and harbor, O'ahu.

Lit.= bamboo husband. (Pukui, Elbert and Mookini)

Kapahuhu: A lava flow? in Kipahulu.

Lit.= ?

At Kapahuhu, in Kipahulu, the lava west on a slant below Ke'aha-moa from Hale-a-ka-la to Luala'ilua, and made two mounds, called Na-pu'u-mahoe (Twin-hills), that remain to this day. Above these mounds was the first long trail connecting noted places and between these mounds is the new government road being used now. (Sterling: 10)

Kapalua: Fleming's beach, Maui.

Lit.= two borders.

Kapapaiki: A place, where Momoku *heiau* was built by *menehune*.

Lit.= ?

Momoku was the heiau that was built by the menhune[sp] at Ka-papa-iki. (Sterling:8)

Kaua'i: Westernmost major island in the Hawaiian group, 33 miles long by 25 miles wide.

Lit.= ? (Pukui, Elbert and Mookini)

Kauhuka heiau: a *heiau* in Kanaio.

Lit.= ?

Kauhuka heiau Site 188 [B1-23]

Location= 1 mile East of J. Burns house above the Kula trail, elevation approximately 700 feet (at Kaunu Keaha).

Description= Small platform of basalt blocks on top of a rocky knoll. Measures 15 feet x17.5 feet, average height of 3 feet. Likely a "Houlu ua" or rain shrine type as natives said that whenever the clouds gathered over this spot it would surely rain. (Sterling:3)

Kaunu Keaha: A place where Kauhuka heiau is located.

Lit.= kaunu= variant of kaulu= ledge, step, jog--as on a cliff; constellation Southern Cross; all species of trees (*Pteralyzia*) related to maile-found only on Oahu & Kauai; same as 'ala'a (*Planchonella*) tree; aulu (*Sapindus*) tree. (Pukui and Elbert)

Kauhuka heiau Site 188 [B1-23]

Locat.= 1 mile east of J. Burns house above the Kula trail, elevation approximately 700 feet (at Kaunu Keaha). (Sterling:3)

Kaupō: Quadrangle, village, old district, homesteads, trail, and gap, East Maui.

Lit.= landing [of canoes] at night. (Pukui, Elbert and Mookini)

Keahu'aiea: The boundary between A'uahi and Luala'ilua Hills, also (possibly) the boundary Honua'ula and Kahikinui (second is suspect). Beyond Hanaka'ie'ie. Land section, Makena quad.

Lit.= the heap of *'aiea* trees and shrubs.(Pukui, Elbert and Mookini)

They reached Ke-ahu-'aiea which is the boundary of Honua'ula and Kahikinui. (Sterling:4)

We, O reader, shall move to Auwahi [going past] Ke-ahu-aiea at the boundary of Kahiki-nui and here we came to Honua'ula. [Ke-ahu-aiea is on the boundary of Luala'ilua and Auwahi and the maps show Auwahi as in the district of Kahikinui. EPS] Between the hill of Nale and Ke-puka-hala-malo at Auwahi, is the source from which Pele descended to a place called Kuanunu. (Sterling:10)

Keakohi: Place next to Kanaio.

Lit.= ?

Keakoko/Keaakoko: = An *'ili* in Kanaio.

Lit.= ?

LCA testimony: #4144 (Kaaeamoku):...Kaaeamoku's pasture land is in Keaakoko *'ili*...

Ke'anae: Land section, village, point, landing, stream valley, and peninsula, East Maui.

Lit.= the mullet. (Pukui, Elbert and Mookini)

Keanawa'a: A cave on the coast below Kanaio, an informal name given by Ashdown to a burial cave.

Lit.= the canoe cave (Ashdown).

Ke-ana-wa'a= is a burial cave on the coast below Kanaio and we called it so because the "coffin" was a canoe. (Jauquin "Jack" Freitas and other cowboys know these places well and perhaps the proper names also. "The Canoe Cave" simply is our way of identification.) (Ashdown:15)

Keaoneulaula: Red...Sand.

Lit.= the Red Sand.(Ashdown)

Keaukolo: An *'ili* in Kanaio.

Lit.= ?

LCA test: #4151 (Kalawaiakumoku): Section 3--pasture in Keaukolo 'ili...

Keawanaku: Site complex in Kaunauhane.

Lit.= ?

Site 50-14-1280= Keawanaku Complex: (Connolly 11/5/73). Complex with 70 features around a small bay--platforms, enclosures, shelters, religious structures, walls. Very dense habitation area. Includes Walker's Ku'ula Heiau site #193. Nat. Reg. site (12/90). (Historic Sites Files)

Keōkea: Land section, village, and park, Pu'uokali quad, Maui.

Lit.= the white sand. (Pukui, Elbert and Mookini)

Keone'ō'io: Land section and bay (also called La Perouse Bay), Mākena quad, Maui.

Lit.= the sandy [place with] bonefish. (Pukui, Elbert and Mookini)

Kepukahalamalo: A hill in A'uahi.

Lit.= ?

Between the hill of Nale and Ke-puka-hala-malo at Auwahi, is the source from which Pele descended to a place called Kuanunu. (Sterling: 10)

Kiele: A fishing ground/spot.

Lit.= kiele= to emit fragrance//to paddle. (Pukui and Elbert)

When Punalena is in direct line with the depression on Ka-lae-o-ka-ilio, it is there, at the same place, where Kiele is located. the main landmark is Hekilipaihi [Hikilipahi in Hawaiian text]. (Sterling: 10)

The important fishing ground, of the places mentioned (La-pueo, Alena, Lualailua) is Kiele, belonging to the Ahupuaa of Lualailua. The landmark is located in Kipahulu. It is the hill of Kalena, when it is in line with the depression at Ka-lae-o-Kailio. The stone of the cape is its principal mark. It is 120 fathoms deep. (Sterling: 10)

Kihei: Village, plantation, elementary school, boat landing, beach park known as Mai-poina-'oe-'ia'u, Mā'alaea quad, Maui.
Lit.= cape, cloak. (Pukui, Elbert and Mookini)

Kiipuna: Heiau site?
Lit.= ?
Heiau Sites (?) Heiau at Kiipuna, Ninaulua nui
Location= In the lava flows makai to trail between Waiailio and Wahene.
Description= Large open platforms of iliili and coral and pebbles, no walls. Not seen--reported by Ben Aikala, but his information is not reliable as he confused heiau and burial sites. (Sterling:3-4)

Kipahulu: A fishing ground landmark. Forest reserve, quad, village, district, valley, East Maui: home of Laka, a god worshipped by canoe makers.
Lit.= fetch (from) exhausted gardens (*ki* is short for *ki'i*). (Pukui, Elbert and Mookini)
Pi is the fishing ground, and its landmark is located at Kipahulu. (Sterling:10)

Kohala: District, volcano, land section, mountains, and village in northwest Hawai'i. *Heiau* site in Kanaio.
Lit.= ?
Kohala heiau Site 189 [B1-24]
Location= South of Kula Pipe line 1/2 mile east of J. Burns house.
Description= Rough platform of basalt blocks on end of a high ridge overlooking the sea. 53 feet x34 feet. Front is terrace 3 feet high extending for 23 feet. Stone paving only 8 feet back. West side faced but no free-standing walls. Hill extends for level in front of platform and some of the open space may have been within the hieau confines. (Sterling:3)

Kohaluapapa heiau: A *heiau* northwest of Lualā'ilua Hills.
Lit.= koha lua= To resound loudly, as poi vigorously pounded. (Pukui and Elbert)
Heiau at Kohaluapapa Site 186 [A37-8]
Location= North West of the hills on a high shelf of land.
Description= A large walled structure of irregular plan. Total length of 110 feet. Construction is of massive basalt with iliili, pebbles and coral scattered plentifully everywhere. Walls are massive, 6-8 feet thick and 4.5 feet high at west. The south

side is terraced in two tiers on the rocky hill, and is open to the sea. Four main enclosed courts can be seen. A is unpaved, B is the central court rough paved where the principal ceremonies were likely carried out. At the west end are two pits or depressions without stone lined sides. C is a smaller enclosure probably for a house of some kind. The east wall is 6 feet high. Between C and D is an open platform terrace approximately 2.5 feet above the level of D. D is a large court with a high wall on the east side and a low wall at the front, below which is a second step terrace 5 feet high. The west end is open, there being no definite border but a large rock on which are some pebbles and iliili, perhaps an altar of some kind. Adjoining the heiau are a series of walls forming irregular enclosures extending to a large dwelling site on the point, which may have been the house of the Kahu. (Sterling:8)

Koholuapapa: A habitation complex in Luala'ilua Hills.

Lit.= ?

50-15-186: Koholuapapa Complex= (Hommon 10/30/73). An unusual inland heiau and associated possible kahu's house. Walker's site 186 (pp. 256) and BM Ma-A37-8.

The complex consists of Walker's heiau, a probable habitation structure that Walker believed was for the kahu, and an enclosure... Lantana, Apples of Sodom vegetation with two small mangoes growing in the heiau. The heiau has several stone-lined pits, appears that different sections may have had different functions. Has much coral. Habitation last used in historic (late 19c.-early 20c). (Historic Sites Files)

Kona: Leeward districts on Hawai'i, Moloka'i, Ni'ihau, and O'ahu.

Lit.= leeward. (Pukui, Elbert and Mookini)

Kuanunu: Famous lava flow/section at Puu o nole.

Lit.= *kuanunu*= hold in *lua* fighting. *Kuanu'u*= Kauai name for *maono*--a basalt. (Pukui and Elbert)

[from The Story of Kihapiilani] They passed Kanaio reaching Puuonole where they tread the famous lava of Kuanunu... After a little while they went on to Auwahi... (Sterling:4)

Between the hill of Nale and Ke-puka-hala-malo at Auwahi, is the source from which Pele descended to a place called Kuanunu. (Sterling: 10)

Kuehu / Kuehunui: An *'ili* in Kanaio.

Lit.= *kuehu*= to shake, stir up, as dust; to toss up, as spray; to brandish, wave; to clear of weeds; to drive off, especially evil spirits (with *tapa* or *ti*). (Pukui and Elbert)

LCA test: #4151 (Kalawaiakumoku): Section 2--pasture in Kuehu 'ili...

LCA test: #5275 (Kekuhauloa): Section 4--pasture *'ili* in Kuehunui *'ili*. At Kuehunui are 2 *moku*...(4)

Kula: Elementary school, sanatorium, land area, forest reserve, and former district, Kilohana quad, Maui.

Lit.= plain. (Pukui, Elbert and Mookini)

Kuwaiala'ilio: A cave near Hale'ahu.

Lit.= ?

Sam Ka-lani-paha'u (his brother) built a grass hut near the cave Ku-wai-a-ka-'ilio. (Sterling:1)

Laeloa: A fishing ground landmark. Point South of Honauhau Bay, Hawai'i.

Lit.= the long point. (Pukui, Elbert and Mookini)

Lanikāula: A sacred kukui grove. Linked to Moloka'i grove-trees imported from there. A kukui grove on Moloka'i.

Lit.= the royal prophet; priest aristocrat.

Has kukui nuts from the grove of Lanikaula (Molokai)-this became a second grove also called Lanikaula. (Sterling:1)

Luala'ilua Hills / Luailua / Lualualaea: An *ahupua'a*. Quad, hills and land division, East Maui.

Lit.= two-fold tranquility. (Pukui, Elbert and Mookini)

Site 182 [A37-7]

Location= North side of hills near trail which comes up from south east.

Description= A small heiau in the a'a of rough construction made of basalt chunks and iliili. No pebbles, but some pieces of coral found. It is notched and shaped and measures 38 feet long x 23 feet wide. It is walled all around to a height of 2-3 feet inside and about the same in thickness. The highest part outside is south side, where the wall has been built up to 7 feet. A rough pavement covers the interior

and at the east end a low platform 6 inches high occupies the space between the walls. The entrance is at the seaward side. A tiny enclosure 3 feet square and about the same height has been built into the corner of the jog on the outside. Naio branches and stones cover the opening, but only a large chunk of coral was found. (Sterling:7)

Site 184 [A37-6]

Location = Along the shore 75 yards from Site 180.

Description = A small L-shaped heiau measuring 25 feet x 25 feet. Built of slabs of basalt some of which are placed on edge in a wall 3 feet high. On the seaward side is a step-terrace built of coral. There are low terraces in each arm of the L with chunks of coral scattered over them. The small square hole in the corner contained bits of sea urchin and other shells. (Sterling:7-8)

Water in Lualailua (Kahikinui, Maui trip with Mr. Lawrence, Oct. 1881)

We finally located a waterhole up above Lualualaea [Lualailua] Hills, and pitched our main camp up there...

Mr. Lawrence was making a general survey of Kahikinui and our first work was setting up our trig. station...

Paiko's windmill is located below Lualualaea Hills, about a mile back from the sea, and is very interesting; we climbed down the shaft of the windmill into a immense lava tunnel cave, the lava tunnel being about 20 feet x 20 feet on one side of the lava tunnel was flowing a beautiful stream of water. The stream I should judge was about 1 foot deep and 3 feet wide, flowing on quite a grade. The country is very barren around the lava tunnel, also there are no woods to speak of above on the Haleakala slopes, yet the natives speak that this stream of water never diminishes. (Sterling:9)

...Kalaula and Luala'ilua, are the names, means something. Names confirm a "legend". (Ashdown: 14)

50-15-1389 = Lualailua Terrace Complex:(Hommon 10/31/73). Dryland agricultural complex, arid area, near Hanamuuloa Complex. @ small shelters (1 c-shape, 1 bubble shelter) and 10 rectangular terraces with front facing.

Previously unrecorded complex consists of 10 terraces with retaining alignments and associated shelters. Located approximately 300 meters northeast of northeast corner of Hanamuuloa Complex (15-1164), 10 meters north of Hoapili Trail and approximately 300 meters from shore... No surface artifacts.

50-15-1163m = Lualailua Enclosure: (Hommon 8/9/73). Rectangular enclosure without an entrance.

The site is a rectangular enclosure referred to by the B.M. as Ma-A37-11, "walled enclosure without an opening". Located approximately 300 meters west of foot of northwestmost Lualailua Hills. Also approximately 35 meters east of water tank marked on USGS Quad (# 15), and 90 meters northwest of site 15-186... Relatively flat, vegetation lantana, scattered Apples of Sodom bush, scattered panini cactus. Land is Hawaiian Homes, leased by Maui Factors.

Measures 10.6 meters x 17.7 meters, core-filled, 1.3 meters high x 1.2 meters wide, no midden visible. Likely historic (50-100 yrs old).

50-15-1161= Lualailua Cave: (Hommon 10/13/73). A lava tube apparently used by travelers as temporary camping place. Bishop Museum site #Ma-A37-9 and M9 (Chapman & Kirch)... Crater 50 meters in diameter, with lantana. An 'ohe 'ohe (Tetrasandra kauaiensis) tree is at the cave entrance. Land is owned by Hawaiian Homes, leased by Maui Factors. Lava tube, mouth opens to northeast, protected by rubble 2 meters high. Cave 9 meters deep, 5 meters wide, approximately 2 meters high. At the southwest corner is a rough possible pavement with a rectangular fireplace. Cave excavated 1966 by Chapman and Kirch. About 5 meters northwest is a smaller cave, 3.5 meters deep x 1.3 meters wide x 1.0 meter high with low rubble wall (1 meter) across entrance. No midden in either cave.

50-15-182= Lualailua Heiau: (Hommon 10/13/73). Notched enclosure Walker site 182, an unnamed heiau... Thick lantana cover. Covers 8 meters x 11.5 meters, walls 1.1 meter high x 1.1 meter wide. No midden, but notched enclosure frequently is a heiau in the Kula section of Makawao. Another heaiu in the immediate vicinity was bulldozed by Elmer Davis in 1962. (Historic Sites Files)

Mā'alaea: Bay, village, and small boat harbor, Maui.

Lit.= Perhaps a contraction of *Maka'alaea*= ocherous earth beginning. (Pukui, Elbert and Mookini)

Mahiehie: A place in Kalo'i or Kalihi. *Makai* side of Pu'u Naio?

Lit.= *mahiehie*= redup. of *mahie*= Delightful, charming, pleasant.(Pukui and Elbert)

Next is place Mahiehie, on the makai side of Pu'u-naio, Ka-lua-lapa, Pu'u-one, Ke-one-'oio. (Sterling: 1)

Makaniho: A place or area. In Kalo'i or Kalihi.

Lit.= ?

In Makaniho the 'a'alii are plentiful (both large and small). (Sterling: 1)

Makawao: Land section, village, and district, Maui.

Lit.= forest beginning. (Pukui, Elbert and Mookini)

Makee / Make'e village: Village in A'uahi.

Lit.= *make'e*= covetous, greedy, desirous to have, to have affection for. (Pukui and Elbert)

Makee is the site of a larger village and heiau described as Site 187. Extending back from the shore, eleven large dwelling sites were seen. A dwelling site is a platform or enclosure within which are one or more house platforms and smaller enclosures presumably part of the same establishment. A fine example of a site of this kind is located on the highest point of the village. The terrace is 60 feet long built up 9 feet at the front. A wall 7 feet high bounds it on the east, and forms a small enclosure on the north. The house platform is 14 feet x 30 feet raised 18 inches above the terrace. It is paved with pebbles and coral, and in the center is a firepit. This was in all probability a chief's house. (Sterling: 5-6)

Heiau at Makee Site 187

Location= At the village site of Makee at the shore, 75 yards above the trail.

Description= A small heiau 60 feet x 30 feet of the walled enclosure type with a high open platform at the south end. On the east and north sides are walls 6 feet thick and 8 feet high. At the south east corner is a hole opening into a tunnel which extends under the platform. The sides were walled with rock but the hole was too narrow for a man to crawl into with safety, as several large rocks had already fallen in, but nothing could be seen inside. This platform, 25 feet x 30 feet and 5 feet high was paved with pieces of a'a, coral and pebbles. Part of it had been torn away on the south side to build a modern cattle wall. A small narrow enclosure is shown against the east wall in the plan. (Sterling: 7)

Best preserved but not studied site is Maonakala village near Keoneoio, and along with this sites at Make'e, A'uahi (now spelled Auwahi on maps), lower and upper areas all the way into Kaupo. (Ashdown: 13)

Site 50-14-1472= Makee Village Complex: (R. Connolly 11/5/73). Covers 4 hectares. Complex includes houseyards, rock shelter, platform, burials. Located on the coast and continues 300m inland. Rugged terrain, numerous a'a outcrops, small gully at

E end of complex. Has 52 features with house-yards, rectangular and circular enclosures, platforms, rock shelter, possible burials, trails, heiau. Walker #187 (pg. 257)--the one with the tunnel. Nat. Reg. site (12/90). (Historic Sites Files)

Mākena: Village, bay, landing, school, and quadrangle, East Maui.
Lit.= abundance. (Pukui, Elbert and Mookini)

Maluaka: A place in either Kanaio or Ka'eo *ahupua'a*.
Lit.= *malua-kele*= Trade wind, as on North Kauai. Damp *Malua*. *Malua*= net mesh large enough for 2 fingers; sea breeze; depression or cavity of any size. (Pukui and Elbert)

Manini village: Reef, East Maui?
Lit.= surgeonfish. (Pukui and Elbert) [Note that this is seen in large numbers along this coast, at Hanamanioa and Keone'ō'io.]
At Manini is a village of 10 house sites with accompanying pens, burial platforms, and irregular enclosures some of which are places where tapa was dried out of the wind. The six large house platforms are coral paved with ends to the wind. They average 12 feet x 25 feet. At the beach is a canoe shed. One spot littered with chips and fragments of beach stones was probably a workshop where adzes were made. None were found, but four stone squid sinkers were picked up. (Sterling:6)

Manokaahia heiau: *Heiau* site?
Lit.= ?
Manokaahia heiau Site 191 [B1-26]
Location= Puki West of church 200 yards in a hollow open to the sea.
Description= Open platform 60 feet x 63 feet of rough lava. Front 3 feet high, back 1.5 feet. Wall of 2.5 feet seperates the higher and lower platforms. Upper platform is dirt and coral/pebbles. A grave has been placed on this heiau so that the natives speak of it as having lost its heiau standing and power. Drums and ukke music are heard here on the nights of Kane.(Sterling:3)

Manokohola / Manokohala / Manokahala / Manonokohala heiau: Manokohola *heiau*, also an *'ili* in Kanaio where *kalo* grown.
Lit.= ?
Manonokohala heiau Site 190 [B1-25]

Location= Puki east of church 300 feet on level ground.

Description= Irregular platform shown in plan. 70 feet long, two levels to the interior. Makai front is 3 feet high, drop of 3 feet to north east portion. Of aa block, iliili and coral. Drums heard from this heiau. (Sterling:3)

LCA testimony: #3784 (Ohule): Section 2--taro in Manokohola. Manokohola is the 'ili, 6 *kihapai*.

LCA testimony: #3784B (Puupuu): Section 2-taro in Manokohola. Section 6--salt (bed) in Manokohola 'ili. An 'ili, Manokohala [has in it] Maauahi, 1 *kihapai* of sweet potatoes and 6 *kihapai* of Irish potatoes.

LCA testimony: #5275 (Kekuhauloa): ...At Manokahala are 7 *moku mau'u*.

LCA testimony: #5278 (Kainoa): ...at Manokohola, 2 *moku mau'u*...(6)

Ma^{u}hu: A place in Kanaio.

Lit.= ?

Place called Ma^{u}hu in the land section of Kanaio. (Sterling:1)

Maui: Second largest island in the Hawaiian group, 48 miles long by 26 miles wide.

Lit.= Named for the demigod *Maui*. (Pukui, Elbert and Mookini)

Momoku *heiau*: A *heiau* in Lualaʻilua *ahupuaʻa*, near Lualaʻilua Hills.

Lit.= *momoku*= broken fragments; severed pieces; breaking forth, as of water from a dam. (Pukui and Elbert)

Momoku Heiau

Lualailua is the Ahupuaa.

Momoku was the heiau that was built by the menhune [sp] at Ka-papa-iki. That was one of the heiaus built by the gods of this race of people (the Hawaiians). (Sterling:8)

Moʻoiki: A place in Kanaio.

Lit.= ?

Nale: A hill in Aʻuahi.

Lit.= *nale*= clear, bright; not fast, moveable, independent. (Pukui and Elbert)

Nuʻu: Land section and landing, East Maui.

Lit.= height. (Pukui, Elbert and Mookini)

O'ahu: Member of the Hawaiian Island group, 40 miles long by 26 miles wide, contains Honolulu, the State capital.
Lit.= ? (Pukui, Elbert and Mookini)

Pahua: A fishing ground at Kanaio.
Lit.= ?
Pahua Fishing Ground located at Kanaio. Laeloa is one landmark-when directly over Holu Point that is the upper mark. Puwai is the lower mark and is called Ka-hope-a-ka-waa. There is a cave at Kanaio. The stone within resembles a man standing- when it appears slightly toward the windward side then you came over the spots 40+ fathoms deep. (Sterling: 1)

Pā'ia: Village and bay, East Maui.
Lit.= noisy.

Panui / Pa'anui: A place(?) *mauka* of Papapoanui o Kāne *heiau* in Kanaio.
Lit.= see below. (Ashdown ms)
Panui is mauka of these Kanaio sites [Papaoanui heiau]. Paa= means solid, established, secure, etc. Nui= means important, of great magnitude. (Ashdown: 14)

Papaka: A place between Keone'ōio and Mākena.
Lit.= ?
Next is Papaka, where wauke grew, then went down the road to Makena. (Sterling: 1)

Papakea / Papaiki: A place in Lualaʻilua above the Lualaʻilua Hills.
Lit.= *papa kea*= white stratum, sand beach. *Papakea*= white spray, as of sea; to rise in spray, white caps. (Pukui and Elbert)
K.P. Emory in 1922 visited an inaccessible part of Kahikinui near Lualailua Hills and was shown what appears to be human foot prints in an old lava flow. 31 were counted, of which 20 were in pairs 3 inches apart. He concludes that they represent children's feet but is uncertain whether to regard them as true petroglyphs or as imprints made by children trapped on a lava flow. This last seems unlikely as the natives have no memory or even legends of any recent eruption of Haleakala. His conclusion is to regard the prints as petroglyphs but of a form very different from those on Molokai. (Sterling: 10)

These are to be observed on the pahoehoe lava which passed close to the North side of the inland hill of Lualailua, at a place called Papakea. The footprint petroglyphs are 30 in number, crowded into 5 small patches of pahoehoe, within an area not more than 35 feet in diameter, 200 yards north into the flow. They had been cut into the lava to the depth of 1/8-1/4 inch. Most of them are 8 inches long. The longest measured 10inches, the shortest only 4 inches. 20 of the foot-prints were arranged in pairs, 2 inches apart. They were pointing in all directions, but most of them into the flow.

These foot-prints were shown to Kenneth Emory in 1922 by Joseph V. Marciel of Kaupo. Hawaiians had shown them to Marciel years before, saying they were foot-prints of Menehune people made while they were crossing the flow, carrying stone for the building of ho'alo'a heiau at Kaupo. Extensive weathering of the edges indicated that they were made long ago. A few of the petroglyphs were outlined, and some had the toes marked. (Sterling: 11)

Footprints at Papiki [Coming from Nuu to Lualailua Hills, Sterling]

We were so glad when we drew close to the hills for our goal was just back of it. These were tall hills at 1500 feet above sealevel. There was a hill on the upper side and one on the lower and the road went through the houses standing there, the beaches, Makena, Ulupalakua and Kahoolawe. From here we went along the side of the upper hill down to this side and it wasn't long before we came to a rocky plain. Here we dismounted and tied our mules to stones. We walked to the place where the footprints showed on the pahoehoe lava, not far off. (Sterling: 11)

50-15-1162 = Papkea Petroglyphs:(Hommon 8/14/73). Abraded petroglyphs representing human footprints.

On a weathered pahoehoe outcrop.. Terrain gentle slope, with pahoehoe and pockets of red-brown soil. Numerous lantana, some panini. Lesley Bruce showed the site (same directions as 15-1163m). A cairn of stones .9 meters high has been erected at the site.

Petroglyphs in an area 11 x 14 meters--though Emory found 31, we only saw 2 in good condition, 10 in fair condition. A number of other depressions obscured by lichen, 11 possible footprints. All from 14-25 centimeters long, 6-8 centimeters wide, .5-3 centimeters deep. Both "clear" prints had all 5 toes and were of the left foot. One has an additional 5 "toe" marks just beyond the first five. Quite accurate. (Historic Sites Files)

Papanui o Kāne heiau: *Heiau* site? An islet in Haiku quad, 3.13 acres, 40 foot elevation, Maui.

Lit.= Great Flat of *Kāne.* (Pukui, Elbert and Mookini)

Papanuiokane heiau Site 192 [B1-27]

Location= At Hulapapa, approximately 200 feet above the upper Kaupo Trail.

Description= Platform 63 feet x 44 feet, of rough aa without pebbles or coral. Front is 3 feet high. Drums are heard from this heiau. (Sterling:3)

Site 50-14-192= Papanuiokane Heiau: (Connolly 9/21/73). Walker's platform... Vegetation includes koa haole, lantana, yellow poppies, and Apples of Sodom bush. Cleared, roughly leveled with paving, one short wall and a stone-lined pit. Not very impressive. No visible uprights. Nat. reg. 12/90. (Historic Sites Files)

Papapoanui: A *heiau* in Kanaio, also called Papaoakane (?) or Papapoanui o Kāne(?).

Lit.= ?

Then comes the heiau Papapoanui or Kane. Pa= an enclosure. Paanui is mauka of these Kanaio sites. (Ashdown: 14)

Pepehunui/Pepehinui: An *'ili* in Kanaio.

Lit.= *pepehi*= to beat, strike, pound, kill; surface of tapa beater, sometimes the beater was so called. (Pukui and Elbert)

LCA testimony: #3784 (Ohule): Section 4--pasture in Pepehunui 'ili.

LCA testimony: #3784B (Puupuu): Section 3--pasture in Pepehunui ili.

LCA testimony: #5274 (Kaawaapahulu): At Pepehunui are 6 *moku mau'u*...

LCA testimony: #5278 (Kainoa): Section 1--pasture in Pepehunui 'ili. ...at Pepehunui, 3 *moku* of Irish potatoes.

LCA testimony: #5403 (Mai): Section 4--pasture in Pepehinui 'ili. Section 5--pasture in Pepehinui 'ili. Section 6--pasture in Pepehinui 'ili. At Pepehunui are 4 cultivated *moku mau'u*, a *mala* of gourd, a *mala* of sugar cane, a *mala* of taro and another *mala* of sugar cane.(6)

Pi: A fishing ground in Luala'ilua.

Lit.= ?

Lualailua Fishing Grounds.

Lualailua is the Ahupuaa.

Pi is the fishing ground, and its landmark is located at Kipahulu. When Punalena is in direct line with the depression on Ka-lae-o-ka-ilio, it is there, at the

same place, where Kiele is located. The main landmark is Hekilipaihi [Hikilipahi in Hawaiian text]. It is a 120 fathoms deep. (Sterling:10)

Pi'ilani Bay: Named after chief Pi'ilani.

Lit.= ?

Heiau Ho-2 [B1-31]... Houses of Kanaio village almost directly above on the hill. Terraced platform built into a rocky hill. Faces mauka, approximately 7 feet high. Makai side is a natural hill. Nearby is abandoned house lots of fairly recent times. Old trail (see 1929 Map) must come through here. (Sterling:2)

Pimo'e / Pu'u Pi'imoe: A cinder cone in Kanaio.

Lit.= where Pele dug a pit. (Sterling ms)

Pimoe= Where Pele dug a pit. Has kukui nuts from the grove of Lanikaula (Molokai)-this became a second grove also called Lanikaula. (Sterling:1)

5 major lava flows= Ke-o-ne-hu-no; Kau-ma-hi-na; Kalua 'Olapa; Makua; Pimoe. Several unlisted, 1 is Wai-ola flow where beautiful water springs named Wai-o-ka-ilio (water of the dog of Pele) still flow. (Ashdown:12)

Pu'u Pi'imoe= The hill where Pele went inland to "climb to sleep". 'Olapa is associated with the death of King Kekaulike of Maui (died 1736). Makua flow is the oldest. (Ashdown:12)

Pu'u Pi'imoe, where Pele went inland to sleep, is a burial place. Not only the "5 coffins", but much earlier hiding places. (Ashdown:13)

Pōhākea: A hill near Pi'imoe.

Lit.= 'Sacred Sand' (Ashdown); white stone--*poha* short for *pohaku*. (Pukui and Elbert)

Hill east of Pimoe was called Pohakea (Suspended Sand). 7 coffins found there. (Sterling:1)

Pōhakupaea / Pōhaku Pa'ea: Islet at North side of La Perouse bay. Islet (.18 acres, 40 foot elevation), Mākena quad, Maui.

Lit.= stone that lands [ashore]. (Pukui, Elbert and Mookini)

Pohaku Pa'ea in the sea is the lower part of the man's body, and Pohaku Po'okanaka up near Pu'u Mahoe are the man, Pa'ea, of the Pele legend which puts the Pa'ea flow as the very final eruption, said to have occured in 1736 when Pai'ea Kamehameha I was born and his grandfather, King Kekaulike, died. Pele went to Moku Hawai'i

as his Tutu 'Aumakua and he could stop a lava flow by tossing some of his hair into it. (Ashdown: 13)

Pōhaku Pālaha: Peak, Haleakalā Crater, Maui.

Lit.= flat rock.

Pōhaku'ula'ula: A place above Pu'u Mahoe.

Lit.= Red stone. (Pukui and Elbert)

He ['Ele'io] went from Kekaha, turned to the leeward side of Maui and arrived at Honua'ula where he met a female spirit, Kelekeleiokaula. The woman whose name was Kelekeleiokaula was a virgin who had not known man. She had sickened and died and so he spirit went to meet 'Ele'io at Pohaku-'ula'ula. This place lies directly above Pu'umahoe in Honua'ula...

After their conversation on the resting ground of Pohaku-'ula'ula, the spirit of Kelekeleiokaula accompanied him as far as the trail leading to her home and that of her parents. (Sterling:4)

Polipoli: Peak and spring on the slope of Haleakalā, Maui.

Lit.= ? (Pukui, Elbert and Mookini)

Pukalani: Village on Maui.

Lit.= heavenly gate. (Pukui, Elbert and Mookini)

Puki: A fishing ground landmark.

Lit.= puki= a carrying net / to check, curb, pull back.

Punalena: A fishing ground landmark in Kanaio.

Lit.= ?

Pu'u Mahoe / Pu'umähoe / Na-pu'u-mahoe: A cinder cone in Kalihi near Kanaio. Hills in Mākena and Na-hiku quads, East Maui. The last lava flow from Hale-a-ka-la (about 1790) came from the Makena hill at an altitude of 1,550 feet. It is believed that the flow was caused by Pele, who appeared incognito to a family and demanded a chicken; they refused, saying they had vowed it to Pele. Angry nevertheless, she turned the woman and the daughter into stone, said to be visible now. The husband and his small son ran to the sea, but Pele followed them and turned them into stones in the sea.

Lit.= twin hill. (Pukui, Elbert and Mookini)

A Hawaiian Legend of a Terrible War Between Pele-of-the-eternal-fires and Waka-of-the-Shadowy-Waters

At Kapahuhu, in Kipahulu, the lava west on a slant below Ke'aha-moa from Hale-a-ka-la to Luala'ilua, and made two mounds, called Na-pu'u-mahoe (Twin-hills), that remain to this day. Above these mounds was the first long trail connecting noted places and between these mounds is the new government road being used now. (Sterling:10)

Pu'uonole: A place beyond Kanaio. A cinder cone in Haleakalā.

Lit.= weak hill.

[from The Story of Kihapiilani] They passed Kanaio reaching Puuonole where they tread the famous lava of Kuanunu...After a little while they went on to Auwahi... (Sterling:4)

Puwai: A fishing ground landmark.

Lit.= ?

Uliuli village: ?

Lit.= *uliuli*= same as *uli*= any dark color (deep blue of sea, green of vegetation, etc.); a kind of rock adzes made from; name of a star (unknown). (Pukui and Elbert)

Location= Village site of Uliuli located near the point of Kahawaihapapa.

Description= 21 sites of different kinds counted here, 11 identified as house sites. Several large enclosures with low walls, and house platforms inside measuring 25 feet x 15 feet. May have been homes of chiefs, or 1 or 2 may have served as heiau as no definite heiau structures seen in this region.

A well built koa stands on the point a few feet back from the shore, measures 35 feet long x 10 feet wide, but end instead of side is toward the sea. Platform 3 feet high with large stones set on edge forming its borders. Top fairly smooth with pebbles and flat stones. two pits on top and south end raised into a pile. At south end is low terrace which serves as a step platform. Another one is built at the south west corner and has a long gray sandy-looking stone across the top where it joins the main platform. This suggests the stone "Lohe" mentioned by Emory at the Kula heiau at Kaunolu on Lanai. Coral is strewn only on these two step platforms.

The ruins of the old windmill pump and trough may still be seen, but the large square stone base on which the windmill stood should not be mistaken for a heiau structure. 150 feet north of the windmill is a great hole in the ground which is the entrance to a lava tube, in which under the windmill is the spring of fresh water which has the name Waiailio. The story is told of a old woman who lived a mile or so from shore who had a little dog that often used to disappear and then come back wet and muddy. As there was no water near her house the woman became curious and decided to watch where her dog went to find the water. She noticed that the dog disappeared into a small hole in the rocks, and attempting to follow she found herself in a large tunnel which led down to the shore. By following it she finally found the spring. The story does not seem so fanciful after one has seen the tube. It appears to extend indefinitely off toward the mountain, but was only followed seaward to the spring. As there are houses with stone walls and part of the timbers are still in place, it is not surprising to learn from Kaupo natives that this village had been inhabited till 35 years ago.

Salt from the sea spray collects in small pools on top of the rocks near the spring, and the spot was often visited by natives from distant places in order to procure the salt. Elsewhere, as at Nuu, salt pans were made by making shallow depressions in large boulders. (Sterling:4-5)

'Ulupalakua: A place in Pāpa'anui. Settlement and ranch, East Maui.

Lit.= breadfruit ripening [on] back [of carriers]. (Pukui, Elbert and Mookini)

"'Ulu"= breadfruit, to nurture the mind with food; "pala"= ripe; "kua"= back. Image of the breadfruit coming to full ripeness while being carried on the back. (Ashdown: 12)

Waha: An *'ili* in Kanaio.

Lit.= *waha*= mouth; opening; inner surface of a bowl; open top of a canoe; oral; talk too much. (Pukui and Elbert)

Wahene: A place.

Lit.= ?

Site 50-14-1001= Wahene Platform: (Connolly 7/20/73). Walker site #? pg. 263 listed as heiau or burial site. Presence of post holes in platform suggest a house site instead... It is a rectangular platform 18 meters x 8 meters on a lava flow, 250 meters north of ocean. Nat. reg. 12/90. (Historic Site Files)

Waiailio village: ?

Lit.= ?

Waiailio village #2

Location= On shore at foot of Kanaio trail.

Description= 15 house sites, pens, canoe sheds and other enclosures. There is the only example of a stone house with a grass roof still in place (picture, see ms). Built close to the water's edge on platform 3 feet high, 25 feet x 40 feet. House is 15 feet x 30 feet, 5 feet high, 3 feet thick. Edges of rafters rest on top of the wall, ridgepole is 10.5 feet from the ground. Shells, coral and pebbles litter the platform. The door is only 4.5 feet high. Recent occupation (nails, bottles and trash)- also rotten poi-pounding board and outrigger. Beams in the roof were nailed, not lashed. Original owner Kalani Pahoa (died recently) but the house represents the type probably common in windy Kahikinui. Well of brackish water near the house. Neighboring enclosure possibly for canoe.

On trail up to Kanaio 12 house sites sen, located on grassy bench among the lava flows, and several cultivation patches (potato likely). (Sterling:2)

Waiailio Village Sites

Waiailio is the name given to the village at the foot of Lualailua trail. 27 sites were seen, 15 of them house sites, but no heiau structure. 140 house sites in all were seen in a stretch of 6 miles, from Manawainui Gulch to the foot of Lualailua trail. Assuming 6 persons to a house would give a population of 840 for this section of Maui.

On the Kula Trail small village sites were found closely grouped in the vicinity of the heiaus. The house sites were not so elaborate or so large as those near the shore. Stone enclosures formed the basis of most of the houses, and similar smaller enclosures were pig or goat pens.

In the rough country near Lualailua Hills certain structures were seen which may have been house sites or sites for some other purpose. On the edge of certain flat-topped hills a stone facing had been built evidently to form a crude terrace 4-5 feet high. The structure at Kaulaula, 1/4 mile east of the cabin on the Kula trail is a double terraced hill 37 feet long. It is built of rough basalt blocks but does not extend back more than 6 feet from the edge. Coral was found on site and also chips and flakes of a fine-grained basalt such as is used for adzes. It was suggested by the guide, J. Burns, that trees for canoes were felled and roughly shaped here, as the forest formerly extended down much further than it does now.

North of Lualailua Hills at the place where the trail comes up from the South East is a small village of 5 house sites and the small heiau described as Site 182. All were of rough basalt blocks. Small piles of stone nearby indicated potato patches, the only crop besides melons and gourds which can be grown in such rough country.

Along the Shore Trail are scattered house sites and villages. Five house sites were seen just West of Waiailio at the foot of the Lualailua trail. (Sterling:9-10)

Site 50-14-1481= Kanaio Waiailio Complex: (Hommon? 8/-/73) On the coast makai of Hoapili Trail. B.M. site #B1-39, Walker Waiailio Village #2. 26 features densely distributed on the coast. ...a complex consisting of 35 features in a 144 acre (approximately 120 meter x 120 meter) area. Canoe shed noted by Sterling (1962). Name of complex is Kanaio Waiailio, according to William Kauai Jr. of Ulupalakua. Located East of Alaha complex (50-14-1002), West of Makee complex (50-14-1472) and SouthEast of Pimoe cone. Most features on barren aa lava around and within small, steep-sided depression (~ 38 x 22m) that opens on the shore. Sparse vegetation--includes kiawe, lantana, sisal and a few native plants.

Surface midden in 22 features. Features unusually densely concentrated. 2 house platforms--includes Walker's thatched roof. Also well, enclosures, trails, walls, platforms, canoe shed, salt pans. (Nat. Reg. site 12/90)

Site 50-14-1165= Waiailio Complex: (Connolly 8/14/73). Just across ahupua'a boundary in Lualailua Hills. On the coast is Waiailio Village #1, on the coast W of A37-4, and E by a bay of Nimalii Point.

The village site contains enclosures, platforms, a canoe shed and terraces... Covers 36 hectares with 19 features, no visible religious sites. (Nat. Reg. site 12/90)

50-15-1165= Waiailio Complex:(Connolly 8/14/73). Village site with enclosures, platforms, canoe shed and terraces. Visited by Sterling 1963... Kiawe, lantana, sisal and an undermined species of short grass. Site covers 36 hectares. 19 features--rectangular enclosures, terraces, walls, canoe sheds, platforms, C-shape enclosure. Midden (shell) present, also glass & pottery. No visible religious structures. (Historic Sites Files)

Waiaka'ilio: Spring in Honua'ula.

Lit.= water of the dog of Pele (Ashdown).

See Wai-ola for details (Ashdown:12).

Waiakapuhi: point in Kanaio. Islet (0.1 acres, 40 foot elevation), Maka-wao, Maui.

Lit.= water [used] by the eel. (Pukui, Elbert and Mookini)

Site 50-14-1800 = 'Waiakapuhi': (Hommon 12/5/77). On the coast near Waiakapuhi. "Primarily platforms/terraces, of a'a chunks. Well-built and very well-preserved." agricultural terraces, walkways, platforms--very nice from helo photos (originally located by tour helicopter pilot who saw vandals at site). Nat. Register site (12/90) (Historic Sites Files)

Waianukole: Coastal area, West Maui.

Lit. = red [with] cold water. (Pukui, Elbert and Mookini)

Waihou Springs: ?

Lit. = new water. (Pukui and Elbert)

Waikīkī: Section of Honolulu, beach and park, O'ahu.

Lit. = spouting water. (Pukui, Elbert and Mookini)

WaiLea: Land area, Mākena quad, Maui.

Lit. = water of *Lea* (canoe maker's goddess). (Pukui, Elbert and Mookini)

Wailuku: City, land division, heights, point and stream, Maui.

Lit. = water [of] destruction. (Pukui, Elbert and Mookini)

Waiola / Wai ola: Lava flow in Honua'ula.

Lit. = water [of] life. (Pukui and Elbert)

Several unlisted [lava flows], 1 is Wai-ola flow where beautiful water springs named Wai-o-ka-ilio (water of the dog of Pele) still flow. (Ashdown: 12)

Wai ola Flow takes its name from the story: All Honua'ula (the Sacred Land/Earth of Maui), from Nu'u-Wai'u to and including Pae-ahu, and from beach to mountain summit. The Ali'i liked to dwell in Honua'ula--the final one I know about was Queen Kalola (daughter of King Kekaulike and sister to King Kahekili of Maui, who died in 1794). Kalola was the last one to pronounce the sacred 'Kapu of the Burning Sun' of only the Maui ali'i (in 1790) in response to the Olowalu Massacre by S. Metcalf.

Today the Wai-a-ka-ilio supplies water to be pumped clear to Luala'ilua and the "Kahikinui House" built by Antone Pico in the mid 1830's. It was used by Ulupalakua Ranch but is now leased to AMFAC for ranching. (Ashdown: 12)

GLOSSARY

The terms of this glossary are taken from Pukui and Elbert (1964) with some additions based specifically on this project.

Ahu: Altar, shrine or cairn. Frequently a cairn placed as a boundary marker.

Ahupua'a: Land division usually extending from the uplands to the sea.

'Āina: Land or earth.

'A 'ā: A form of lava, vesicular, rough, and broken.

Akua: God, goddess, spirit, supernatural or godly.

'Aumakua: Family or personal god.

Ali'i: Chief, chiefess or noble.

Hānai: Foster child or adopted child.

Haole: White person, American, Caucasian or any foreigner.

' Ili: Land section, next in importance to *ahupua 'a* and usually a subdivision of an *ahupua'a*.

' Ili'ili: Pebble, small stone, frequently used as floor paving on house platforms.

Kahuna: Priest or sorcerer.

Kalo: Taro (Colocasia esculenta), a kind of aroid cultivated since ancient times for food.

Kamehamehas: A dynasty of rulers (beginning with the founder Kamehameha I) of the Hawaiian Monarchy.

Ki: Ti, a woody plant (Cordyline terminalis). Formerly the leaves were put to many uses.

Kīpuka: Variation or change of form, and especially a clear place or oasis within a lava bed.

Koa: The largest of native forest trees (Acacia koa), a valuable lumber tree.

Kōkua: Help, assistant or co-operation.

Kona season: Name of a leeward wind, the season of such winds, when persistent tradewinds and related currents diminish.

Kukui: Candlenut tree (Aleurites moluccana), a large tree bearing nuts containing white, oily kernals which were vormerly used for lights and are still cooked as a relish.

Kupuna: Ancestor, one who carried knowledge and traditions of the past.

Lo'i: Irrigated terraces.

Luakini: Large *heiau* where ruling chiefs prayed.

Maka'āinana: Commoner.

Māhele: The land division of 1848.

Makahiki: Year, annual, ancient festival.

Makai: Towards the ocean.

Mana: Supernatural or divine power.

Mauka: Towards the uplands.

Moku: District or island, made up of several *ahupua'a*.

'Ōhi'a lehua: The plant (Metrosideros macropus, M. collina) which has many forms, from tall trees to low shrubs.

Pāhoehoe: Smooth, unbroken type of lava, contrasting with *'a'ā*.

Paniolo: Cowboy.

Pele: The volcano goddess.

Pili: A grass (Heterodon contortus), formerly used for thatching houses in Hawai'i.

Pu'uhonua: Place of refuge or asylum.

'Uala: The sweet potato (Ipomoea batatus).

Wiliwili: A Hawaiian tree (Erythrina sandwichensis) found on dry coral plains and lava flows.

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