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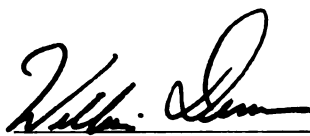
THE POLITICAL ECOLOGY OF HEALTH AND DISEASE
AMONG FOREST FARMERS OF SOUTHEASTERN MADAGASCAR

presented by

Janice Harper

has been accepted towards fulfillment
of the requirements for

Ph.D. degree in Anthropology



Major professor

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THE POLITIC
AMONG FOREST F

**THE POLITICAL ECOLOGY OF HEALTH AND DISEASE
AMONG FOREST FARMERS OF SOUTHEASTERN MADAGASCAR**

By

Janice Harper

A DISSERTATION

**Submitted to
Michigan State University
in partial fulfillment of the requirements
for the degree of**

DOCTOR OF PHILOSOPHY

Department of Anthropology

1999

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ABSTRACT

THE POLITICAL ECOLOGY OF HEALTH AND DISEASE AMONG FOREST FARMERS OF SOUTHEASTERN MADAGASCAR

By

Janice Harper

This dissertation is an ethnographic study of a group of people living in a forested region in Madagascar, people who live alongside the forest's edges, but are buried deep within it. The dissertation is based on archival and library research, followed by eighteen months (January 1995 to June 1996) of participant observation in a village located on the periphery of a USAID-funded national park. In this study, I examine the complex relationship between access to health resources and environmental change. In so doing, I integrate concepts from critical medical anthropology and political ecology to present a political ecology of health perspective which challenges the prevalent ideas that deforestation causes plant medicines to be lost and globalization leads to a loss of indigenous medical knowledge. I suggest that such views are first, ethnocentric, because regardless of their intent, they position the research problem in terms of how environmental change in tropical forests affects the medical and commercial interests of

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Westerners, while failing to evaluate critically the medical needs of indigenous people. Second, such views tend to be simplistic, because they do not situate medical knowledge of plant and other medicines in the broader social, ecological, historical and political context. An alternative perspective, which I present, is that tropical plants and pharmaceutical medicines used for healing are related to the social, political, and economic factors that shape the use of medicines in forest societies, and they benefit or harm those who are dependent upon them in different ways.

I conclude that local, national, and international policies have contributed to changing relationships between the forest, land and body. I suggest that conservation and development policies intended to protect the biodiversity of the Malagasy forest have contributed to declining economic and health status through political agendas which substitute policy for science and view resident people as cultural byproducts. By conflating culture with ethnicity and conceptualizing this ethnicity in terms of ethnic stereotypes, the actual ways that people live and farm in the forest, and how they negotiate their quest for health, has not been appreciated by those policy-makers implementing social change. More relevant to the ways that people access and interact with the land, forest, and strategic resources, and how this interaction shapes health and healthcare, is one's lineage and social caste, rather than one's ethnic heritage.

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**I dedicate this dissertation to my father,
Clifton Harper (1916-1996) who taught me about books and knowledge
and gave me the opportunity for an education that he never had for himself,
and to my mother Neela Anderson Harper (1917-1997)
who began her college education at the age of fifty,
an act that startled the family and has inspired me throughout my life.**

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ACKNOWLEDGMENTS

I thank my dissertation advisor, Bill Derman, first, for having agreed to serve on my graduate committee despite warnings from his colleagues that I was “difficult.” He has learned that the warnings were all too true. His patience has been exceptional, his guidance and knowledge profoundly beneficial in shaping the way I approach research and anthropology (despite equally profound disagreements), and his memory for names, dates and trivia more useful than my computer at times (and often more troubling). His visits to Madagascar provided great support during trying times and helped me to focus my research questions, develop my ideas, and maintain my sense of humor.

My other committee members have also provided considerable support and guidance in the direction of this research. Dr. Anne Ferguson has supported me throughout my research process, editing numerous drafts of research proposals, writing letters of reference at a moment’s notice, and providing support and research guidance in countless ways. Professors Barbara Rylko-Bauer and Laurie Medina have further improved this dissertation through their insightful comments and suggestions, strengthening my analysis in both substance and in style.

Dr. Rita Gallin agreed to read this dissertation on behalf of the College of Social Science, spending a good portion of her summer reading these tedious pages. I thank her

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not only for contributing her time and insights, but also for providing support to me through many years of my early graduate studies, first, in her role as Director of the Women and International Development Program at Michigan State University, where she provided me secure employment, but also by providing me publication opportunities, advice on how to write well, and many lively discussions.

Among my colleagues in the Ph.D. program at Michigan State University, Michael Ennis-McMillan proved to be a wizard with ideas, and his enthusiasm for anthropology has motivated me time and time again. David Perusek guided my thinking in many ways as I began my academic career, corrected my mispronunciations and misunderstandings, and has been a great working-class comrade amidst the middle-class environs of academia.

Many of my social science colleagues who have worked, and continue to work, in Madagascar, have provided me with personal and professional support in a number of ways. In some cases, though we have barely met, if at all, they have shared their data and insights in order that the social issues of Madagascar become as important to researchers as the biological research. In other cases, they have shared not only their data and insights, but many rich conversations and social support. These many colleagues, whose work has enriched my own and, I hope, the lives of the Malagasy, include Lisa Gezon, Lesley Sharp, Paul Hanson, Sabrina Hardenbergh, Sarah Fee, Paul Ferraro, Pier Larson, Narivelo Rajaonarimanana, and Linda Sussman.

Special thanks go to Joe and Dai Peters and Dan and Elizabeth Turk, for sharing their homes, research, and friendship amidst the turbulence of Ranomafana, and in the years since then.

I would also like to

express my encouragement

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I would also like to thank Dr. David Campbell and Dr. Conrad Kottak for providing me encouragement and guidance, and helping me to refine my research questions and methodology. Jan Cornelius and Gail Barricklow, administrative assistants in the Department of Anthropology at Michigan State were very helpful, and Gail offered a wonderful spirit of warmth and encouragement over the years. I thank also Dr. Lynne Goldstein, Chair of the M.S.U. Department of Anthropology for her support.

Professor Pierre Verin, of the *Institut National des Langues et Civilisations Orientales* in Paris, France, deserves more gratitude than I can express in these few lines. He has not only devoted his life and profession to expanding the ethnographic knowledge of Madagascar, he has provided ongoing and invaluable assistance to scholars of Madagascar. By opening his home and library to me and to so many others, Professor Verin and his family have given to scholarship and humanity a great gift. I also thank the staff and faculty of the *Institut National des Langues et Civilisations Orientales* for their patience, support and assistance during my residence in Paris and association with their school.

In Antananarivo, as I initiated my study of the Malagasy language and conducted archival research, I received considerable hospitality and assistance from more generous people than I can even recall. Among them were Jean-Aime Rakatoarisoa and the *Musee d'Art et Archaeologie*, the family Ramanakasina, Rakoto Ratsimamanga, Etienne Rakotobe and Corneille Rasolomananana of the *Centre National de Recherches Appliquees Pharmaceutique*, and the enigmatic and engaging Peter Robinson.

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I will always have profound appreciation and respect for Dr. Bezaka Jules Bosco and Lorena Bezaka of the Ranomafana National Park Project. Lorena's great warmth, humor, and research assistance helped a great deal, both professionally and personally. And Dr. Bosco's dedication to healing and caring for his patients is an honor to his profession.

Several people helped me with translations, research, and interviews. Among them, I thank Chantelle, who I foolishly drove away with my madness, Razafimandimby Voangy, whose good cheer and sage advice helped temper me, Soandro whose English, wit and versatility were a Godsend, and Rodin, whose chosen path should take him far. I also received helpful advice, translations, and historical information from Flaurent, of the Ranomafana National Park Project Museum, and from George. I apologize for not having had the grace to take down your last names. Madame Lillia Rakotaelson and Jeannette Razananirina Mohammed helped me to learn Malagasy and were both dedicated and inspiring teachers. Monique Rodriguez of Cortez Travel helped me to get around the world with minimal fuss and often with little notice, and the staff at the Station Thermal became a family to me as I awaited my research clearance.

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Program, with funding provided by the Ford Foundation and the American Council of Learned Societies. The dissertation fieldwork was supported by Michigan State University College of Social Science, M.S.U. International Studies and Programs, M.S.U. Women and International Development Program, a Fulbright Institute for International Education Year-Abroad Fellowship, and a National Science Foundation Dissertation Improvement Award. Dissertation write-up was supported by the M.S.U. College of Social Science.

My parents, Clifton and Neela Harper, provided me more than I ever expected, both personally and financially, in their support of my undergraduate and graduate education. Not only did they provide me a home of my own so that I could live comfortably and affordably through the many years it has taken me to reach the conclusion of this education process, but the opportunity to have spent the last years of their lives close to them will remain a lasting gift. I will be forever sorry that they could not live to see their generosity rewarded by my completing the degree.

I thank my brother Alan “Zoky” Harper, and sister, Elizabeth Harper, for not throwing me out of the house as the years have continued to drag by with my writing what they must have surely thought was probably something that didn’t even exist and was just some imaginary excuse for not getting a real job.

And while it goes without saying, it must be said, that I owe my greatest thanks to those who hosted my stay. One of the most difficult issues I have grappled with in writing this dissertation has been how to present intimate details of people’s lives in a way that will reveal important social, economic and political tensions regarding the use of land,

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resources, and medicines, but to do so in a manner consistent with the warmth and respect I have felt for the residents of Ranotsara. Unfortunately, I know that I will have failed in many respects, and that there are statements and representations that I have made that would disturb some people. For any distress or injustice this writing causes, I am profoundly sorry. For any misunderstandings or inaccuracies I have presented, I am equally sorry and hope that I or others will have the opportunity to correct such distortions. I do trust, however, that this presentation of the village and its residents is a true and accurate account of my research, observations, and interpretations of the research problem. I hope, too, that my presentation reflects the complexity and vitality of the residents who for the rest of the world will remain anonymous.

Among those with whom I lived, while all were very kind, some stand out for having provided particular support and friendship. Pierety cooked my meals, washed my dishes, hauled my water, pounded my coffee and managed the details of living in a rainforest that were incomprehensibly time-consuming in my eyes. She freed me for the mundane work of interviews, and in the process, she became a major conduit into the lives of the farmers with whom I lived. She patiently explained the world in which I had entered, translated complex Tanala speech into something I could comprehend, humored me, and put up with me. Marie-Jacqueline and Seraphine likewise provided great comradery and assistance. Benoit and I were continually at odds over such things as firewood and cow heads, but he was a friendly and likeable nemesis just the same. Mira is a comedic delight and I am proud to have named my daughter in her honor. Botovao and Raymond provided much support and helpful insights into their world. Tonga, Vesa, and

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There are multitudes of others, too numerous to include here, who have assisted me and supported me. To those whose contributions I have failed to include, I apologize.

While so many have contributed in small and large ways into the making of this dissertation, the errors, weaknesses, judgements, and interpretations are mine alone.

And finally, I need to acknowledge that a real price was paid by this research, and it was paid by the Malagasy people. One hundred and eighty village residents and a staff of Malagasy project employees were caught in the middle of an expatriate battle for control – control over information and ideas. I wanted information to test my ideas, and the Project administrators wanted to control what information I accessed, and what ideas I expressed. In this struggle for control, we each put our own respective interests for personal success ahead of the needs of the Malagasy farmers who hosted our stay on their lands. Most perversely, we did so under the illusion that we were helping them.

It is not another “research project” that the people need. I hope, however, that for all the shortcomings of this research project, that it will mark the first step toward my own efforts to repay my hosts for their kindness, generosity, and the lessons I learned from them.

THE POLITICS
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FOREWORD
INTRODUCTION
ACKNOWLEDGMENTS

PART I INTRODUCTION

From Fieldwork to Finding
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Forest Medical Anthropology
Forest Critical Synthesis
The Anthropology of Forests
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The Forest and the Land
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**THE POLITICAL ECOLOGY OF HEALTH AND DISEASE
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Janice Harper

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In this dissertation, I

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Chapter 1

INTRODUCTION

In this dissertation I show how the forest residents of southeastern Madagascar depend upon swidden farming of the forest in order to remain healthy, and to survive economically. Efforts by outsiders to conserve the forest, and to promote a market economy, have had adverse economic and social effects on forest farmers. These effects, combined with environmental and social changes, shape how health and disease are experienced and treated. How forest residents are affected by these social processes, however, is not uniform. Local tensions, conflicts, and coalitions contribute to different health outcomes and ways that people are able to access medicines. The social variables shaping access to medicinal resources also condition the ways in which medicines – and the need for them – are interpreted by forest residents.

More specifically, for residents of the Tanala forest in which I resided, conservation of the forest has had adverse economic effects, leading to less ability to purchase pharmaceutical medicines and greater neglect of chronic illnesses, rather than increasing reliance on plant medicines. These effects have not been uniform, however; social inequality, religion, age, gender, and lineage all mediate how the relationship between health and the forest environment is perceived and experienced.

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From Fieldwork to Findings

From April 1995 to June 1996, I conducted ethnographic research in Ranotsara, a small village (population approximately 180) adjacent to a national park in southeastern Madagascar, among people self-identified as "Tanala," or people of the forest.¹

Surrounding the village are irrigated rice fields reaching to the fringes of old growth rain and cloud forest, as well as large tracts of previously forested land that have been cleared for swidden agriculture. Historical processes of colonialism, migration, and economic change have contributed to the changing ecology over the village's one hundred year history. In 1990, what remained of the forest was enclosed as the Ranomafana National Park, and this village was selected as one of twenty-six pilot villages for an integrated conservation and development project funded by the United States Agency for International Development (USAID). In exchange for "economic development," residents of these villages were to relinquish what they considered to be their ancestral forest lands. Pilot villages in the project were to be given technological assistance to shift from swidden to irrigated rice agriculture. Villagers were also to receive access to Western medical care by way of a traveling health team which would periodically visit each village, and economic assistance to repair schools and expand the educational opportunities in the region.

¹ Many of the villagers are descended from ancestors of the Betsileo ethnic group, and claim kinship ties to Betsileo residents of other communities outside the forest. As such, while all agreed that Ranotsara was ethnically identified as a Tanala village, and practiced the Tanala way of life, many also identified themselves as simultaneously Tanala and Betsileo. These issues regarding ethnicity and descent are discussed in chapters Four and Five.

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Health care was initially provided to residents in Ranotsara, via monthly visits by a physician and nurse who dispensed pharmaceutical medicines and treated chronic and acute illnesses. In this way, access to Western medicines was directly linked to relinquishing access to the forest; indeed, residents were discouraged from using indigenous medicines, as the health team disparaged plant and other indigenous medicines as “backward” (D. Peters 1994a). After three years of the monthly visits, the health care abruptly stopped, with no explanation or warning to the villagers. Project administrators explained to me that health care was terminated because local conflicts made it too problematic to carry out the project's agricultural objectives in this village (Project Manager, personal communication 1995, recorded in field notes). The former physician for the health team, who had been responsible for making the monthly visits, explained that he did not receive any support for health care activities and when his contract expired, his work was terminated. The American Conservation Director informed me that in his opinion the only link to health and conservation was to conserve the forest by limiting population growth. Because most of the women refused to use the birth control pills offered by the health team, he felt that the project had no obligation to continue health services (Conservation Director, personal communication, 1996, recorded in field notes). Nonetheless, the project did continue to support the idea of exploring the possible commodification of plant medicines as a means toward sustainable development of the region's ecosystem (RNPP 1994).

At the same time that visiting health care in this village ceased, other significant regional changes took place. Madagascar entered into a World Bank directed land privatization campaign. Some villagers appropriated land that had been farmed by their

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neighbors by having it registered to themselves, while others complained that their taxes increased when they registered their land. Structural adjustment schemes included the devaluation of the Malagasy Franc to half its previous value. The Gulf War caused petrol prices to escalate, and a cyclone caused considerable damage to village homes and obstructed access to urban markets. Rapid inflation drastically changed the local economy; some community members, who for historical reasons had more land than others, benefitted by this inflation, while the majority suffered.

In the recent past, such economic distress would have been mediated by clearing more forest land. Instead, such distress was exacerbated as further clearing was prohibited. Moreover, those already advantageously positioned by their greater economic power benefitted by the project's assistance in the shift to irrigated rice agriculture because they had access to suitable lands and labor power, and because they had the capital to invest in fertilizers and chemical inputs. Consequently, within a period of a few years, the social structure of the village changed from one in which all households had access to forest land for subsistence agriculture, to one in which the majority of the households worked as agricultural wage laborers for a minority controlling irrigated rice fields.

During this period of rapid social change, and right on the heels of the abrupt departure of the traveling physician, illnesses and deaths escalated considerably, while access to pharmaceutical medicines was sharply curtailed. Most people no longer had the purchasing power to buy pharmaceutical medicines, which had been introduced through health programs of the colonial state. While I had expected that those who could no longer purchase pharmaceutical medicines would rely more on plant medicines, this did not occur. With the introduction of Western medicines and medical beliefs, promoted by

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the colonialists and Lutheran and Catholic missionaries, the role of the *ombiasa* (diviner/healer) shifted from diviner and healer, to primarily diviner, treating more cosmological illnesses than “illnesses of God” or “illnesses of age.”² The changing role of the *ombiasa* as one who treats primarily cosmological illnesses has led to neglect of illnesses that are viewed treatable by Western medicines, if such medicines cannot be obtained. As such, rather than finding that increased poverty led to increased use of plant medicines, I found that to be true only of acute illnesses, whereas increased poverty led to increased neglect of chronic illnesses.

Those most impoverished suffered from increasing illnesses of poverty, including severe malnutrition. Illnesses that were formerly treated by the traveling physician, or prior to him, Western-trained nurses and physicians (affiliated with colonial or post-colonial national healthcare available until the late 1980's in the nearby towns of Ranomafana or Ifanadiana), by the mid-1990's were often left untreated until they became so severe that they affected one's ability to work. These illnesses included scabies, venereal diseases, and respiratory infections. Whereas some acute conditions, such as malaria and serious respiratory infections, would continue to be treated with the plant medicines that had formerly been used in tandem with pharmaceutical medicines, the plant medicines were now used almost exclusively for these acute illnesses. But the use of plants alone was not viewed by many villagers as sufficient – illnesses frequently became so grave that the sick person could no longer function effectively within the society, and it

² These are my translations of the terms used to categorize illness among my informants (*aretina Zanahary* “illness of God” and *aretina antitra* “illness of age.”)

was at this point that alternatives to plant medicines were sought, be they medicines of the pharmacy or of the *ombiasa*.³

At the same time that land-use and economic changes were causing many to become more poor and thus less healthy, those who were benefitting from the economic changes associated with conservation of the forests and privatization of the land, were in many cases able to continue purchasing antibiotics and chloraquine, as well as soap and food – essential to maintaining good health.

While most villagers endured severe health consequences associated with their intensified poverty, as well as illnesses associated with their tropical environment – such as malaria, hepatitis, and tuberculosis – they were struck by the irony that the very Westerners who they perceived – rightly or wrongly – to have cut off their supply of pharmaceutical medicines, were interested in their plant medicines, as environmental education and *sensibilisation*⁴ programs had suggested.

Enter, the anthropologist. I arrived with appeals to residents to help me learn about local practices and how they used medicines. Indeed, despite my efforts to explain

³ In the case of sick children, their mothers, rather than their fathers, often suffered the loss of work (although informants indicated that mothers and fathers would both stay home and care for the children, it was rare for a father to do so. On the other hand, it was fathers who transported sick children to the hospital at Ranomafana, and thus they also lost work. If, however, there were an older female at home to care for sick children, then she would do so. As more older women were themselves pushed into wage labor or their workloads otherwise compounded, this childcare option was not always available).

⁴ The French term for environmental sensitivity programs, or “making one sensible.”

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the broader interests of my research, I was initially perceived as being there to study plant medicines. Only after several months of interviews and following up sickness episodes and asking about the use of pharmaceuticals, was my research regarded as not being just about plants, but being about sickness and healing from multiple perspectives.

Two social factors critically influenced my research methodology and findings. First, the presence of the national park project not only affected local lives, it affected nearly every facet of my research, as project administrators sought – and achieved – direct and indirect control of my research. Second, the village I selected was regarded by many as cursed. It was believed to be cursed because many of its residents were dying. During my fourteen month residency, 18 people died – comprising roughly ten percent of the village's population of 180 people.

The deaths were variously attributed to respiratory disorders, seizures, malnutrition, fevers, liver problems and ghost sickness. As every few weeks, or sometimes every day, another person died, suddenly or following an illness, I reflected more and more on whether or not the village had indeed been cursed. Standing outside a home filled with the wailing relatives and friends of one man suddenly dead in the middle of the night, the third that week, I felt a darkness engulf me as I began to faint – fearing I would be next. Were they indeed dying because some cosmological curse had struck this seemingly exotic corner of the globe – a cosmological force that I could not in my educated ignorance begin to comprehend? Or were they dying for some more mundane reason? Ten percent dead in just over a year suggested to me that either the ancestors were indeed displeased, or an environmental explanation was at hand. (Of course, I did

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not dismiss the possibility, as many villagers suggested, that both explanations were true – the ancestors were displeased and so they sent this environmental curse upon them.)

At any rate, given that there was a history of environmental, health, and economic data on this village, having been gathered both before and after its establishment as a pilot village of the project, I surmised that I had to bring the death rate to the attention of the project administrators, who were charged with responsibility for exploring the social ramifications of the recent social and environmental changes.

Clearly, the association between the deaths and the enclosure of the farming lands for biodiversity protection, as well as recent economic changes, was not necessarily causal nor even necessarily linked. But when there have been recently introduced environmental and economic changes, and a few years later there is an acceleration of environmentally-related deaths among impoverished people, there might be a possible connection. Exploring such a connection was in keeping with the objectives of my research. At the very least, as a resident and guest of the village, I felt it my moral responsibility to seek help from those with access to health and economic data, and health and economic resources.

Unfortunately, calling attention to the high death rate, and seeking access to health documents and economic data, were regarded by my compatriots as not only outside the bounds of inquiry into "plants," but embarrassing and potentially subversive. My efforts to access data and address the health crisis I was witnessing, led to increasing concern among project administrators that my research, once of no interest to them, required close supervision. The rigid surveillance of my research that ensued (which extended as well to my personal life) and the resistance of project officials to *any* social science inquiry in the

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southeastern forest region (regardless of distance from the park or relevance to the project) that the expatriate administration did not wholly control, prevented me from systematically examining whether there was indeed a causal relationship or other link between imposed environmental and social changes, and the escalating sickness and death in the region. Nevertheless, I believe the story of the village, including the presence of an ethnographer herself deeply embedded in the political conflicts of the region, provides a telling portrait of a world gone wrong – a system broken by outsiders and insiders, one which multiple players desperately sought to keep going, each in different ways.

Moreover, not only did these circumstances shape my methodology and frame my research questions, they also helped to shape my theoretical perspective. While I set out to do a relatively conventional study in medical anthropology, I was not fully aware of the kinds of relationships which existed between the health status and medicinal use of the residents of Ranotsara, and the rapidly changing economic circumstances brought about by the project and other factors. I was particularly unaware of the salience of the distinctive lineages in the village, and how economic changes and interventions would deepen this social divide and influence the meanings attached to the respective kinship ties.

In addition, I was unsuspecting of how politicized these changes and the high death rate in Ranotsara were in the eyes of the project. Once I became aware of these relationships and processes, the focus and scope of my study broadened to include these factors at the same time that my ability to gain access to the data to examine them was curtailed and manipulated by the project administrators. By restricting my access to information and people, the project administration provided me with the privilege of

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Political Ecology

The focus on social differentiation within societies, and the centrality of power to social relations, has gained prominence through the emergence of "political ecology," a sometimes nebulous designation for cultural ecology studies which link human interaction with the environment to broader political and economic processes shaping resource use. Specifically, political ecology is distinguished from cultural ecology by recognizing that resource use patterns may be culturally adaptive, yet environmentally destructive. Moreover, political ecology is policy oriented, in that it unites empirical research with policy options aimed at achieving conservation and social equity (Whitesell 1993).

Political ecologists point out that power relations have multiple levels. At the household level there are age and gender variables that affect how one interacts with the environment. At the community level, social status may mediate resource use. And at the national and international level, multiple and competing pressures influence cultural and environmental interactions. Attention to the tensions and conflicts that these multiple levels of power induce, gives far more depth to social analyses than do understandings of culture as some *thing* that adapts to a changing environment.

Unfortunately, many attempts to examine power relations that shape environmental use in post-colonial societies have explained environmental degradation exclusively in terms of the disproportionate power of the industrial world in relationship to the poorest countries in the world. Clearly, the role of the industrial world as an over-consumer of the

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earth's resources, and the way that capitalist expansion has exacerbated environmental degradation in the tropics, cannot be understated. Nonetheless, to ignore the roles of national and local powers in both the degradation and protection of tropical environments would provide a linear, and possibly economically-reductionist, view of a much more multi-dimensional problem. In order to avoid the economic reductionism that often accompanies analyses of power relations, political ecologists have cautioned against regarding social and environmental change as exclusively outcomes of capitalism. Bryant (1992:13) cites Blaikie (1989) on this point:

any attempt to attribute desertification to "natural forces" other than the penetration of capitalism is written off in some quarters as merely a bourgeois red herring. This is a simplistic and unnecessary polarisation since it is the dialectic between environmental and social change which must provide the context in which land degradation is discussed.

Bryant (1992:13,14) suggests that economic reductionism fails to explain ecological factors, devalues the role and importance of the state, and neglects human agency. Thus, while a politically-oriented cultural ecology has sought to critically analyze the political and economic dimensions of social and environmental change, at the same time it has aimed to do so from multiple vantage points in which a diversity of variables interact to shape the human/environmental nexus.

Bryant (1992) has tried to draw together the major areas of what he terms "Third World political ecology." Third World political ecology focuses on the developing world as disproportionately affected by First World policies and economic strategies, but embracing three critical areas of inquiry. The first is the contextual sources of environmental change. He identifies state policies, interstate relations, and global capitalism as variables that shape how national and international forces affect the

government. A second aspect is access to resources. This perspective, in which control is understood in historical context and political reality, is expanded. In this regard, the issues are as salient to control change.

In a study of access to resources, the authors have imposed different constraints on the forest, one of which is the loss of ancestral lands. In this study, however, access to the forest is a function of national policies. In the past, the forest has been managed as a commons (Hanson 1998). The authors argue that economic resources are a function of access to the forest. In many other ways, the authors argue that the forest is a function of national and local policies. The authors also argue that the forest is a function of the U.S. government.

environment. A second area of inquiry for Third World political ecology is conflict over access to resources. This area focuses on local-level dynamics from a temporal perspective, in which contemporary practices regarding access to resources are understood in historical contexts. Finally, Bryant suggests that the influence of socio-economic and political relationships on human-environmental interactions is all too often neglected. In this regard, he suggests that the political ramifications of environmental change are as salient to cultural ecology analyses as are the environmental ramifications of political change.

In a study of access to health resources in an environment in which U.S. and global interests have imposed drastic measures limiting access to forest resources (by prohibiting access to the forest), one could easily fall prey to economic reductionism, by alleging the seizure of ancestral lands has caused people to become impoverished, thereby leading to illness. In this study, however, I show how the relationship between access to medicines and access to the forest is mediated by state and local-level dynamics interacting with international policies. In many ways, the creation of the national park and the way in which it has been managed have contributed significantly to economic and social stratification (Hanson 1997), thereby enriching a minority, who in turn control agricultural and economic resources available to the majority.

In many other ways, however, despite the influx of international wealth to facilitate changes in resource management, the international community has had very little impact in the way that the forest is used, health resources accessed, and residents' lives affected. National and local policies have far more salience to the lives of most of the residents, and the ramifications of a USAID conservation and development project on the economic

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status or world views of most people living in Ranotsara is so abstract that it is no more understandable to a local forest farmer than to a project administrator. Nonetheless, international powers that have imposed environmental policies on residents, and the disproportionate distribution of funds and agricultural assistance, have had an impact on local power relations. At the same time, local level dynamics, rooted in a history of domestic slavery, forbidden marriages, and contested claims to land and power, have also contributed to contemporary social inequalities and conflicts that now influence who benefits and who loses from environmental and economic change. These changing and differing interests have consequently shaped the relationships between access to health resources and access to forest resources.

Critical Medical Anthropology

Just as political ecology has focused on social inequality and power as fundamental to understandings of the environment and environmental change, so too does critical medical anthropology view social inequality and power as the primary determinants of health and health care (Baer, Singer and Susser 1997:3). This perspective rejects medical anthropology's orthodox illness/disease dichotomy, in which illness is viewed as the sufferer's experience, while disease is regarded as the pathogen or biological malfunction. Instead, critical medical anthropology views disease not as a biomedical problem, which serves to reify the mind/body separation, but as a health problem patterned by social relations and inequalities, such as malnutrition, environmental toxins, poor housing, and poverty.

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[Critical medical anthropology] views health issues within the context of encompassing political and economic forces that pattern human relationships, shape social behaviors, condition collective experiences, reorder local ecologies, and situate cultural meanings, including forces of institutional, national, and global scale. The emergence of critical medical anthropology reflects both the turn toward political-economic approaches in anthropology in general, as well as an effort to engage and extend the political economy of health approach (Baer, Singer and Susser 1997:3,4).

From the perspective of critical medical anthropology "health can be defined as *access to and control over the basic material and nonmaterial resources that sustain and promote life at a high level of satisfaction* (Baer, Singer and Susser 1997:5, emphasis theirs)." This concept of health is the concept that I embrace in this study in presenting access to medicines as a resource issue. The authors further suggest that

While the ultimate character of health care systems is determined outside the health sector by dominant social groups, like heads of insurance companies and other large corporations, significant forms of struggle take place within this sector and help to shape its institutions. Consequently, an examination of contending forces in and out of the health arena that impinge on health and healing becomes an essential task in building a critical approach to health issues (Baer, Singer and Susser 1997:5).

The studies presented by Baer, Singer and Susser (1997), however, take a top-down approach, in which political and economic forces press down upon people with relatively little autonomy or power, thereby affecting health and health behavior. For example, in discussing the historical and social context of alcoholism, the authors provide detailed evidence and sound argument to show how alcoholism can be understood in relationship to social class relations, in which drinking serves to unite workers in solidarity, control workers for the service of production, provide meaning to workers whose lives have been rendered meaningless through the production process, and provide

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Such an analysis is an important one in understanding the social and historical roots of an international health problem. But alcoholism is also a health problem that permeates class boundaries. And although alcoholism is a health problem of the wealthiest and the poorest in society (and may well disproportionately affect those in the poorest strata), how it is experienced, and how it is understood, differs among classes. Moreover, alcoholism is a health problem that divides not only the classes, but also within social classes, it is experienced and understood differently, as gender, age, race, religion, and geographical location shape how alcohol is consumed and understood. The competing interests and views within a social strata that shape the etiology and morbidity of alcoholism, shape other health problems as well.

As Baer, Singer and Susser's (1997) study of alcoholism reflects, much of the work in critical medical anthropology has focused on how health status, the health and illness experience, and health care, are shaped by the capitalist economy *imposing* its values and interests onto others. Morgan (1984) argued that a reliance on dependency theory to explain health problems has prevailed in critical medical anthropology, citing Baer (1982), Morsy (1979), and Singer (1986) as providing some of the most important work in this area, but limiting their analyses to documenting the ways that capitalist expansion and penetration have adversely affected health and contributed to inequitable distribution of health resources.

Specifically, Morgan (1984) points out that dependency theorists, in explaining medical systems and health problems in developing nations, often define capitalism in

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Framing a Critical Synthesis

Extending critical medical anthropology to include the competing interests and social tensions within social groups is in the best tradition of cultural anthropology. By understanding culture as comprised of conflicts and tensions that are not only hierarchical, but parallel as well, one can provide a more holistic analysis to critical medical anthropology.

To do so, I propose forging a synthesis of critical medical anthropology and political ecology, toward a political ecology of health perspective. While there have been earlier efforts to present a "political ecology of health" position (e.g. Baer 1996; Gruenbaum 1996; Leatherman 1996), efforts which have successfully extended critical medical anthropology to include ecological factors, they have not had much basis in political ecology analyses. For example, Baer (1996:452) describes how he views political ecology:

Like critical medical anthropology, contemporary political economy has at best given passing consideration to environmental factors. However, neo-Marxist and other radical scholars are attempting to integrate ecological considerations into their analyses of various types of societies. Such endeavors have been referred to as the "political economy of ecology"

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(O'Connor 1989), "eco-Marxism" (Benton 1989; DeLeague 1989; Grundman 1991; Raskin and Bernow 1991), "eco-socialism" (Pepper 1993; Ryle 1988), "radical ecology" (Merchant 1992), "socialist ecology," and "social ecology." Much of the interest in what I simply term "political ecology" stems from Green politics in Europe, particularly Germany, and has been inspired by the work of neo-Marxist scholars such as Andre Gorz (1980) and Rudolf Bahro (1982) and ecoanarchist Murray Bookchin (1989).

Baer's comments suggest a recognition of the need for critical medical anthropologists to pay greater attention to the role of the environment in shaping health, but there remains a need to delve deeper into the literature of "political ecology" to draw out how such theorists have explored differing levels of power interacting toward social and environmental change. Nonetheless, theorists of political ecology have given little attention to the sphere of health, viewing indigenous medical systems as homogenous, and disease as a biological process. How people variously experience sickness, how medical resources are differently interpreted – as well as accessed – by local populations, and how people interpret the relationship between their environments and their health – remain to be understood by political ecologists examining the relationships between ecology and health. By bridging political ecology with the political economy of health, and in so doing, incorporating interpretive analyses of health and ecology, better understandings of local-level strategies to access the resources of health become possible.

The failure of political ecologists to address issues of health, and of medical geographers to address issues of inequality, has been noted by Mayer (1996; in press) who advocates a political ecology of disease framework by which to analyze social processes shaping disease ecology (1996). He suggests that a political ecology of disease approach must show how large-scale political, social and economic processes influence local

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practices and disease ecology. Understanding local contexts of disease, and relating these contexts to the macro-dimensions of political economy is fundamental to a political ecology of disease, he argues. Exploring the interconnections of differing scales, Mayer suggests, will illuminate patterns of disease ecology in ways which conventional approaches to the intersections of health and disease have failed to do.

Disease ecology, so basic to medical geography and epidemiology, is also a powerful approach to understanding disease emergence and resurgence (May 1958; Meade 1976). Many changes that are relevant to understanding emerging and resurgent diseases are due to political and economic power at a variety of scales, ranging from the transnational down to the household and individual levels. Some, or even much of this power is influenced by which groups control decisions over land use. This, in turn, influences the relationships of people and the environment. This is a basic principle of political ecology which has received some attention in the geography of health and disease (Mayer 1996), and has been used increasingly in understanding the consequences of human-environment interactions (Mayer, in press).

Toward such an understanding of the political ecology of health and disease,⁵ I examine ways in which historical and contemporary interventions aimed at controlling land and society have penetrated the African body through illness, disease, and death. In the tradition of political ecology, I focus not only on how people have been affected by the political economy of the region, but also on how they have exercised their own wills to survive. One strategy toward survival has been through the quest for medicine. I examine medicines as *resources* of the forest, and explore the differing strategies to obtain these

⁵ I use the term “political ecology of health” to refer to multiple levels of well-being, illness, and disease. In this way, it is to be understood as an experiential state, which may or may not include biomedical concepts of disease. As this dissertation will show, however, I regard the prevalence of (biomedically-defined) disease in developing countries as a critical social issue which the promotion of “natural” medicines fails to address; a political ecology of disease approach is therefore compelling.

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I also incorporate concepts from political ecology regarding social stratification as not merely a bi-product of capitalism – indeed, pre-capitalist state formation contributed to social hierarchies in Madagascar; these hierarchies, in turn, have shaped power relations at the local level. In so doing, I build on Morgan's (1984) call to treat capitalism in terms of the means of production, to examine the uneven ways that it affects people, and the ways that people actively engage or resist it. Moreover, I emphasize that indigenous knowledge is not uniform within a culture (Warren 1997). Different people have different knowledge domains, and these multiple ways of knowing shape health and health care differently for different people, as well as contribute to medical pluralism.

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The Anthropology of Forest Medicine Use

The political ecology of health framework which I use here builds on work from indigenous knowledge systems (e.g. Brush and Stabinsky 1996; Dove 1996; Zerner 1996), while departing from most studies in tropical forests and medicines by conceptualizing “community” or “culture” as heterogenous, and by considering the social/environmental nexus as fundamentally political. Such ideas have not abounded in most presentations of forests medicines.

In most of the popular literature and discourse on the “forest” and “medicines,” as well as in health and conservation policies, forest medicines are inevitably perceived as plants. There are two primary ways that forest medicines, or medicinal plants, are viewed by outsiders (those who do not live in the forest). One view regards forest medicines as resources to be commodified. As the multinational pharmaceutical industry expands its drug marketing globally, the commodification of tropical resources by capitalist enterprises also accelerates. With this expansion of the profit-oriented medicine industry, the concept of “traditional” has been reduced to that which is of little or no value to the Western world.

At the same time, ecologists present a second view, wherein they call for researching and preserving traditional medicines and indigenous knowledge systems concerning their use, in the name of biodiversity and as a strategy and goal of sustainable development.

The use of natural plant-derived medicines is perhaps the only sustainable form of medicine. It can foster a greater consciousness of the value of biodiversity while offering appropriate medicines for the developing and industrialized world and high-value crops for worldwide production. Botanical medicines are experiencing a meteoric rise in popularity

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worldwide, especially in the United States and Europe. The increased use of herbs for health can help save the environment, but this increased demand can also destroy local ecosystems and push threatened plants to the brink of extinction. The key to achieving the positive potential of the natural health care movement is environmentally and socially conscious development and sustainable production of the botanical raw materials which feed this rapidly growing business (McCaleb 1997:221).

Warren (1997) indicated that research on the medicinal properties of plants is integrally linked to sustainability of environmental development through a focus on indigenous knowledge. Indigenous knowledge, he argued, is an important national resource; by recognizing intellectual property rights to profits from medicinal plants, and by including those knowledgeable as participants in the commodification and marketing of plants, medicinal plants become a key symbol to sustainability.

This focus on the preservation of biodiversity as a morally righteous objective has indeed been seized by the pharmaceutical industry seeking Third World resources for First World drugs. Their focus on "traditional" medicine has two objectives. One, to gain knowledge about the unknown medical system in order to appropriate both the knowledge and the resources for Western profit, and two, to gain knowledge about the unknown medical system in order to tap new markets for Western drugs. This knowledge and these resources thus obtained become "Western," whereas what is left behind as of no use, or what remains undiscovered by Western researchers or unfamiliar to them, is "traditional." This dichotomized ideology presumes there to be no tradition in Western allopathic medicine, nor anything modern in indigenous medicines.

To bridge this gap, some medical anthropologists have called for more attention to medical pluralism, as opposed to studies of medical "systems." While Stoner has charged that the "medical systems" have become dichotomized as "folk" or "modern," ignoring the

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multiple forms of medicine that practitioners employ to heal the sick, Comaroff (1983) and Stoner (1986) have critiqued the concept of medical system for the ethnocentric bias inherent in separating the medical from other social dimensions. Comaroff charges that the scientific quest for categories (within the medical system) is itself ethnocentric in that it presumes such categories to exist, and that the distinction of various social domains, such as religious, economic, or medical, are recognized as separate domains among the people whose medical system is studied by the ethnographer.

Moreover, Baer, Singer and Susser (1997) suggest that medical pluralism is not indigenous to pre-state societies, but is instead, directly associated with increasing social stratification. They allege that the role of shaman is primary to the dyadic core (healer-patient relationship) in simple preindustrial societies, whereas in horticultural societies one finds multiple specialists utilizing varying components of the folk medical system. In industrial societies, the authors suggest, the biomedical physician dominates a myriad of medical systems. They further contend that the concept of medical pluralism is perhaps better understood as medical dominative systems, in which biomedicine dominates all other systems.

While not disputing the association between increasing levels of social stratification and increasing medical specialization, I would suggest that this view reifies the folk/modern dichotomy by its reliance on economic boundaries separating "simple preindustrial" foraging societies from horticultural from state industrial societies. In reality, multiple economic strategies are practiced in all societies and all societies have been incorporated into states. While differing economic strategies may predominate in societies, this does not necessarily mean that they are uniformly practiced by all

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community members. In this dissertation, I show how a society characterized as horticultural and agricultural is tied to the market and tied to the state, and its members differently engage in economic strategies from foraging to irrigated agriculture, and that these practices affect their health and access to medicines differently. To classify them as practitioners of folk and/or modern medicine is as misleading as classifying them as swidden *or* irrigated rice agriculturalists.

Moreover, biomedicine may predominate in that it is more desirable for certain people in the treatment of certain disorders, but it does not always predominate. Likewise, while an emphasis on the hegemonic influence of biomedicine, particularly in regards to the commodification and distribution of pharmaceuticals, is imperative to understanding how biomedicine is incorporated into post-colonial societies and viewed by community members, such an emphasis can obscure an equally imperative emphasis on how biomedicine is often superior to plant medicine in treating many critical health issues – notwithstanding the fact that it is often injurious as well. It is for this reason that the World Health Organization (1988) has called for the equitable distribution of essential medicines throughout the globe.

Nonetheless, distinctions of "folk" and "modern" continue to be routinely employed by physicians and anthropologists alike, particularly in regards to the study of medicines. van der Geest and Whyte (1988:10,11) have alluded to this problem:

In situations of pharmaceutical pluralism, terms like "traditional" and "modern," "indigenous" and "Western" medicines are almost unavoidable. So are the quotation marks around these terms. There is an uncomfortable sense that they are misleading, since the pluralistic context transforms both imported and native medicines. Thus we find "modern" medicines being distributed by "traditional" healers and utilized in ways never imagined by the manufacturers. Penicillin may become an ancient Ayurvedic medicine.

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And we see "indigenous" medicine being manufactured on an enormous scale advertised on television, and exported to other countries. Genuine *jamu* from Indonesia can be purchased in Europe. The nuances involved here may serve to remind us once more of the care needed in the use of terms like traditional and Western medicine.

Moreover, concepts of "traditional" medicine are not just imposed by outsiders from the Western world. They are just as likely to be perpetuated by outsiders from within post-colonial nations – that is, urban-based, Western-educated elite. Feierman (1985) suggests that there is an assumption in the medical anthropology research that "traditional" African medicine is something that "traditional" Africans do. This assumption is facilitated, in part, by the social status of those Africans who write about African medicine. Feierman points out that focusing on the competition between popular and biomedicine draws attention away from more critical questions, such as how are social costs distributed, what is the relationship between production and health, and how do social changes pattern health and disease?

Despite the convenience of distinguishing between traditional and Western medicine, and despite the seeming contrast between the domains, it is important to understand the political and economic forces that shape medicine, in order to understand that regardless of whether a medicine is found in the backyard or in a child-resistant plastic bottle, medicines are resources, and as resources, distinguishing them according to their material form may not tell as much about the person taking them as does distinguishing them in terms of their political and economic form.

Time, space, matter, cause, relation, human nature, and society itself are social products created by man just as are the different types of tools, farming systems, clothes, houses, monuments, languages, myths, and so on, that mankind has produced since the dawn of human life. But to their

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participants, all cultures tend to present these categories as if they were not social products but elementary and immutable things. As soon as such categories are defined as natural, rather than social products, epistemology itself acts to conceal understanding of the social order. Our experience, our understanding, our explanations – all serve merely to ratify the conventions that sustain our sense of reality unless we appreciate the extent to which the basic 'building blocks' of our experienced and sensed reality are not natural but social constructions (Taussig 1980:4).

Nonetheless, the political and economic forms of medicine used by forest residents are rarely addressed by outsiders, except to the extent they are presumed to be profitable. This is because a second view outsiders bring to the study of forest medicines is deeply embedded in Western views of what constitute such medicines. This is the view that forest medicines – known only as plant medicines – are natural healing agents from the forest's rich cornucopia of biodiversity. They are, as such, "good things," "natural," and potentially enriching both in terms of health and wealth.

A growing segment of the public believes that herbal medicines and other alternatives are safer, possibly more effective, more natural, and more in harmony with a lifestyle that promotes self-care, individual responsibility, freedom of choice, and "holistic" thinking. A part of this too is the belief that a return to more natural therapies is a return to the time in which our medicines, like our foods, came from the earth, and the use of these natural substances is more in harmony with our natural surroundings (McCaleb 1997:228,229).

The view that forest medicines are medicinal plants and medicinal plants are by their very nature "natural," and "good," comes primarily from studies in ethnobotany and the recent popularization of ethnobotanical research in tropical forests (e.g. Davis 1985; Plotkin 1993). Three major themes have prevailed in this literature regarding the relationship between tropical forests and indigenous medicines. The first theme is that tropical forests are home to countless health resources – specifically, medicinal plants used by forest people for treating diseases and wounds, as well as providing nutrition. A classic

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example of the "global" value of tropical forest plants is Madagascar's Rosy Periwinkle. The Rosy Periwinkle is used indigenously to treat diabetes; discovered by Western scientists to be an effective treatment for childhood leukemia, it is frequently pointed to as an example of the potential medical and economic value of tropical forest plants, suggesting that there are untold other plant species which can be used in the treatment of other cancers, heart disease and AIDS.⁶

A second theme, and an important concern to Western scientists and environmentalists, is that as forests are destroyed, indigenous communities, as well as the Western scientific community, may lose medicines. Lacking sufficient ethnographic inquiry into how medicines are used by forest residents, however, the extent to which the loss of plant medicines affects those who live in the forest is not clear. More attention has been drawn to the potential "global" loss of medicines – that is, the loss to Western medicine and pharmaceutical corporations – that deforestation might cause, than to how loss of forest diversity is or is not associated with the loss of medicines for forest residents.

A third theme is that increased population pressure is leading to increased deforestation of the tropics, as forest residents increase swidden agriculture on a limited land base, encroaching on old growth rainforests. This theme is advanced by many conservation and development planners who are concerned with halting the destruction of tropical forests and, as previously indicated, is one of the ideas shaping policy of the

⁶ Plotkin (1993) points out that the two drugs developed from the alkaloids of the Rosy Periwinkle led to annual sales of over \$100 million, with no money being returned to Madagascar, the country of origin.

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Ranomafana National Park Project. This view holds that if women who live and work in tropical forests adopt family planning practices, and have access to improved prenatal and infant health care, forest populations will decrease, and forest residents will no longer need to clear more forested land. This view focuses more on how the health of people affects the health of the forest, presuming as well that what is good for the forest (conservation) is good for its inhabitants.

Conservation planners and ethnobotanists are consequently concerned with conserving the forest in order to preserve plant species (e.g., Middleton, O'Keefe and Moyo 1993), with exploring shared indigenous knowledge systems of how local forest products are used by healing specialists (e.g., Naranjo 1995), and with investigating the cultural roles that plants play in indigenous communities (e.g., Alcorn 1995).

To persuade local forest communities of these "scientific" needs, environmentalists often appeal to local communities to support conservation objectives by suggesting there is potential profit in local forest medicines. They often suggest that everyone will benefit if plants found to be of value to Westerners – either for medicines, perfumes, or beauty creams – can be marketed nationally or internationally.

As countries like Cameroon begin to see the economic value of the medicinal plants in their forests, they can better appreciate the foolishness of clear-cutting those forests for timber, ranching, or mining. In fact, one of the strongest hopes we have for saving the ancient forests is that their true economic value will now be recognized (McCaleb 1997:236).

In this vein, Cameron (1996) argued that commodifying medicinal plants can be used to improve the economic position of low-status villagers while promoting biodiversity conservation:

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The project will link biodiversity conservation with the marketing of high-altitude medicinal plants in the vicinity of Khaptad National Park in the Seti Zone of far western Nepal. . .

In light of the rapid destruction of biologically diverse ecosystems and arable land under cultivation throughout Nepal's farming middle hills, improved management of forest ecosystems is urgently needed (Biene et al. 1990; Eckholm 1976). Promoting the sustainable use of ecosystems meets the dual benefits of providing income to local people, as well as conserving and safeguarding the genetic resources housed within them (FAO 1985). It is estimated that, of the over 6,500 species of flowering plants in Nepal, 370 are endemic to Nepal and over 700 species are reported by local people to have medicinal properties (Nepal Environmental Policy and Action Plan 1993:36-37). However, due to the lack of a national program to monitor and protect Nepal's biodiversity, no systematic inventories of the biological diversity of the Khaptad National Park region, (nor of most regions of Nepal in general) exist; thus, it is unknown how many species of plants and animals are extinct or becoming extinct. Indeed, the establishment of national parks and protected areas, covering nearly eleven percent of the country's total land area, has been Nepal's greatest effort at protecting ecosystems and biodiversity (Cameron 1996;84,85).

While Cameron points out that anthropologists can be effective in facilitating the distribution of profits of commodified plant medicines in ways that are socially beneficial, rather than socially disruptive, she also points out that pharmaceutical corporations are anxious to appropriate local knowledge, with little interest in protecting the intellectual property rights of powerless participants or ensuring equitable distribution of any profits that reach local communities.

The pharmaceutical industry and others have indeed capitalized on the conservation movement in order to maximize profit. Yet the merging of the objectives of the pharmaceutical industry with those of environmentalists is commonly represented as being so potentially fruitful, that an alliance which in decades past would have struck many as inherently conflicting, is now viewed by multitudes of environmentalists as symbiotic and "natural."

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Among the companies which have embarked on major medicinal plant research programs are Merck, Bristol Myers, Squibb, Pfizer, Monsanto, Smith Klein Beecham, and Eli Lilly. The interest of these companies in as yet undiscovered medicinal plants – or rather, the compounds from medicinal plants – is a testimony to the importance of preserving biodiversity as a source of future medicines.

The most impressive collections of biodiversity are found in true wilderness. Rainforests, whether tropical or temperate, wetlands, and other wilderness areas must be preserved intact to avoid disturbing the delicate balance of these awesomely productive ecosystems (McCaleb 1997:229).

The pharmaceutical industry has also exploited the scientific research of indigenous plants and medical systems in order to capitalize on indigenous knowledge for Western needs. For example, ethnobotanists are more likely to get funded to bring back to the Western world medicines which can be commodified by pharmaceutical companies, medical knowledge that can be developed toward biomedical objectives, or to otherwise provide genetic material to Western scientists. While some attention is given to how tropical plants can be developed into drugs to treat tropical illnesses, this attention remains scant in comparison to how these same plants can be developed into drugs to treat illnesses of the industrial world.

This area of research on the part of ethnobotanical science has been criticized for its focus on the commercial potential for Western profit, in which the research itself is value laden but couched as "universal" benefits by way of "discovering" potential cures for disease (Davis 1995). Nonetheless, as Gare (1995:79) points out:

Through treating things as commodities, the natural conditions for human creativity become private property and are then treated as capital, while people's creative potential is reduced to labor power to be bought and sold on the market.

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Nowhere is this more true than in the focus on plant medicines as having monetary value. Such a focus on how plant medicines can be commodified is intended to transform the labor of local communities toward just such ends. Medicines viewed as *economic* resources, exclusive of their social and symbolic resource value, are in this way synonymous with medicines as property, to be bought and sold for profit, and the local medical experts reduced to labor power.

Increasing American utilization of medicinal plants creates a demand for botanical raw materials which could produce a tremendous boon to farmers, both domestically and abroad. . . . In many cases these botanicals must be produced using ancient and labor intensive methods including hand picking and “garbling,” or manual removal of twigs, rocks, and other contaminants from the dried herb. Because of this, these commodities represent a continuing economic opportunity in developing countries for all but the few crops which can be mechanically harvested. According the U.S. Agency for International Development, the greatest challenge facing most farmers in developing countries is finding markets for crops with sufficient value to sustain a family business. In many parts of the world, agro-economic development has shifted away from subsistence farming toward the search for specialty crops and cash crops which can be grown on farmland which is currently idle (McCaleb 1997:234).

Thus, the view of forest medicines as inherently good and natural goes hand-in-hand with the global marketing of forest medicines.

The arguments for preserving forest “ecosystems” in order to preserve indigenous medicines and indigenous knowledge may be well intended, but the focus on “indigenous” categories tends to neglect the social differences that characterize every society, and which determine whose knowledge is accessed, and how the benefits of such research and commodification will advantage or disadvantage different members of a society.

Moreover, by relying on ethnobotanists to legitimate commercial aims as being beneficial to *science* (once issues of intellectual property rights are negotiated and settled,

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Why should we be so concerned with biological diversity? Consider, for a moment, that knowledge of a relatively small number of species has provided untold benefits to human welfare and the world economy. . . . Many potential crops and wild relatives of cultivated species remain unknown, and their discovery could have an enormous impact on human welfare and economic productivity (Systematics Agenda 2000: Charting the Biosphere)

While indigenous knowledge of plant medicines does indeed merit respect, attention, and compensation when such knowledge has been appropriated by outsiders, and while botanical research of forest plants does make a substantial contribution to scientific knowledge and the treatment of many diseases, the scientific process itself is deeply embedded in political concerns.

The political context of science is inherent not only in the questions that are asked – which plants are biomedically efficacious (and therefore can be commodified) – but in which questions are not asked. Why people living in the forest need medicines, why they select plants and not pills, or why they choose pills and not plants, and how the quest for medicine is related to changing ecologies, social structures, and economics, are questions that are not regarded by many policy makers as relevant to understandings of how the forest environment is related to the health of forest residents. And considered irrelevant, these questions are generally not asked of forest residents.

One reason issues of social structure, economics and politics are not considered by some as germane to the anthropology of medicinal plant use, is that the marriage of botany to social science has for the most part focused on how plants are used and valued within the indigenous medical system. Moreover, this focus has relied almost exclusively on

either a biological framework (toward understanding the biological value of plant medicines) or on an interpretive framework (toward understanding the symbolic value of plants to those who use them). Davis (1995) summarizes how the merging of ethnobotany and anthropology has evolved:

Increasingly as ethnologists joined the field, the emphasis shifted from the raw compilation of plant names and uses to an intellectual perspective that viewed the character of a people's relationship with the plant world as but one means of approaching an understanding of the cognitive foundations of a culture. . . . As anthropologists working in ethnobotany became concerned with the "totality of the place of plants in a culture" (Ford 1978), the intellectual potential of the discipline began to be realized. The study of plants became a vehicle for addressing general issues of ethnological significance. Several themes emerged. The important concept of cultural relativism was reinforced by studies of folk classification, which revealed that aboriginal taxonomies, while not necessarily coinciding with Linnean concepts and categories, were equally complex and firmly rooted in biology (Conklin 1954; Berlin et al. 1974). Studies of hallucinogenic plants offered insights into the origin and character of complex religious beliefs (La Barre 1938; Reichel-Dolmatoff 1971, 1975). Work in medical anthropology highlighted the significance of non-Western concepts of health and healing and, in doing so, emphasized the elaborate connection between spiritual belief, psychological predisposition, and pharmacology that underlies all indigenous practices involving psychotropic preparation (Davis 1995:43).

Although focusing on the biological and interpretive dimensions of botanical medicines provides critical insights into their local use, such a focus, when it remains isolated from the historical context and the political economy of medicine use, is problematic. Apart from a focus on biological efficacy, by conceptualizing the cultural context of medicines as the cosmological and social *meanings* of medicines, one is almost forced to think in terms of a *shared* concept of reality grounded in a common history and undivided interests. But social categories of class, caste, gender, age and ethnicity shape

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Current environmental policies in Madagascar largely ignore social differences and local and national histories, in favor of simplistic views that swidden rice production is destroying the forests, it is practiced due to tradition and poverty, and that by educating forest farmers in the practice of irrigated rice production, and increasing their integration into a market economy, they will act rationally, which is to say, adopt the new technology and abandon their (irrational) "cultural tradition." The fixing of people's beliefs and behaviors as traditional further presumes that they lack the ability to make choices without enlightenment from outsiders (Feeley-Harnik 1991). The desire to reap the rewards of the market economy, however, is presumed to be so universally innate that a project need only facilitate its integration into local economies in order for the culturally-bound native to "choose" to participate.

Integration into a market economy is central to the development objectives of many Integrated Conservation and Development Projects (ICDP's), including the Ranomafana National Park Project, which sees economic opportunity tied to global capitalist expansion as the salvation of the forests. While human interaction in the ecosystem is viewed by some as "unnatural," it becomes natural when harnessed for commodification. Hand in hand with this view, is the view that elements within the ecosystem remain "undiscovered," and their "value" threatened – as if those living in the "ecosystem" do not "discover" or "value" the rich potential of their forests:

Tropical forests in particular are rich potential sources of valuable foods, medicines, and products of all kinds – if we don't destroy them before their potential can be discovered. When we selectively remove species and

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damage or destroy entire ecosystems (as in deforestation), resources of enormous potential value are lost . . . Tropical forests, more than other kinds of ecosystems, remain uncatalogued treasure houses (Erich and Erlich 1990:101).

The importance of Madagascar's indigenous plants to international pharmaceutical research and development is well documented. The Malagasy periwinkle, containing a chemical used to treat Hodgins [sic] disease and childhood leukemia, benefits millions of people worldwide. Natural chemical compounds found in many plant species provide vital components for the treatment of disease. Because of the tremendous plant biodiversity found in the remaining rainforests there is likely potential that recognized beneficial species or as yet undiscovered plant species exist in the Ranomafana area.

There are well publicized examples of economic benefits generated through the association of local communities with international pharmacological companies. During the second phase, the natural products development sector of the RNPP will identify potential means of collaboration with both national and international enterprises. While this is an alternative means of increased benefits to peripheral zone communities, three potential constraints will be carefully reviewed; 1) potential non-sustainable harvest of medicinal plants and 2) inequity between local benefits and pharmaceutical profits 3) Malagasy environmental law concerning export/exploitation of beneficial medicinal plants (RNPP 1994:35).

As with the Ranomafana National Park Project, much of the focus on the cultural context of medicines in other tropical forest communities is made by people trained in the natural sciences and public administration, who usually conceptualize culture as something others have, something that is exotic, shared by all members of "the tribe," and fixed in tradition. At best it is agreed that it is important. Indeed, in the best tradition of the missionaries of the nineteenth century, understanding culture is seen by many twentieth century international aid workers – hoping to "improve" economies, environments, and health – as a prerequisite to the success of changing that culture. In the following quote, a

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nineteenth century missionary suggests that ethnological knowledge of the Malagasy would facilitate enlightenment and economic change:

There still, however, remains a very marked gap in, at least, our *English* literature treating of the Malagasy ethnology: we know hardly anything definite about those numerous wandering tribes which are popularly known under the name of Sakalava Yet these people have many claims upon our attention. They form one of the most numerous of the many different tribes found in Madagascar; they were until the present century the dominant tribe of the country; and they present some strongly marked differences in customs, superstitions, and dialect from those of the inhabitants of the interior and of the eastern coast. It may be hoped that, now we have a Protestant mission established at Mojanga, we shall before long gain some more accurate information about these Sakalava, who have hitherto been almost entirely untouched by any Christian teaching

Under enlightened and upright Hova governors, the Sakalava country would recover its prosperity, commerce would be opened up, and the vast agricultural resources of the western provinces would be developed. And last, but not least, Christianity would be introduced, and the people lifted up from their present heathen condition into the light and liberty brought by the Gospel of Christ. We still, however, need much information about the Sakalava tribes (Sibree 1878:456-457,468).

One hundred and sixteen years later, a USAID report reflects little change:

Local customs, traditions and cultural variations can be an obstacle to both conservation and development objectives. The RNPP [Ranomafana National Park Project] will make every effort to identify these forces and work with the recognized community structures to accomplish the objectives that benefit both the communities and the park. Local knowledge will be incorporated into all aspects of the project to heighten the chance of success of activities (RNPP 1994:86).

The language of global environmental management has been crafted in such a way as to make a focus on the historical and cultural contexts of environmental change impossible to incorporate into international policy (Hildyard 1993). Hildyard shows how that the United Nations Conference on Environment and Development (UNCED) held in Rio de Janeiro in 1992 and popularly regarded as the Earth Summit, framed the

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environmental crisis in terms which concealed the role of the North in creating the crisis, while casting the North as the only possible solution to the problem. For example, he notes that environmental problems were consistently stripped of their history by divorcing contemporary problems from the past. References to 'recent,' 'new,' and 'the latest' data suggested that environmental problems are something new, and in the Earth Summit, these problems were presented by 'government,' 'international' or 'industrial' authorities, thereby safeguarding the credibility of those whose actions have historically produced contemporary environmental problems.

Hildyard further indicates that by treating environmental problems as 'global' problems, no one in power is held responsible for creating them, and to the extent that responsibility is suggested, it is in terms of a 'lack of knowledge' in which all of humanity has a shared stake in the survival of the planet. In this way, too, the authority of the North was legitimated in the humane call to save the planet.

Few environmentalists would argue that environmental degradation has reached critical proportions – destroying local livelihoods, condemning species to extinction, blighting landscapes, and (if climatic disruption occurs on the scale predicted by some climatologists) possibly threatening the very future survival of humans and other mammals. But within UNCED the critical nature of such threats was used to justify giving those currently in power still more authority; to legitimize programs which would remove control still further from local people; and to sanction more management, more top-down development, more policing and still greater control of people (Hildyard 1993:31).

The use of language to construct diverging and paradoxical worlds permeates the debates among researchers trained in varying methods, theories, and concerns, and among administrators charged with carrying out the national and international agendas of global ecology. These differing languages also reflect a fundamental discord distancing social

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scientists from policy makers. The discord between social science and conservation/development (for the two are very often interchangeable in the globalized era), runs deep. In many cases this divide is characterized as an academic divide, in which the social and the biological sciences are portrayed as dueling disciplines, with social scientists speaking an unintelligible language and failing to recognize the environmental crisis confronting the planet.

This disciplinary divide was expressed in a recent email interchange regarding conservation and development issues in Madagascar, but could be extended to any geographical locale where institutional economic and social changes are targeted toward indigenous communities. In April of 1997, David Meyers, Program Officer for the International Conservation of Tropical Environments (ICTE) at the State University of New York at Stony Brook, which provides institutional support to the Ranomafana National Park Project, solicited feedback from researchers regarding a proposed consortium for research and training in Madagascar. Publishing his appeal on *Hevitra*, an e-mail list-serve for scholars of Madagascar, he suggested that the failure of social scientists and physical scientists to engage in productive discourse was impeding the objectives of conservation and development. In reply, Professor Maurice Bloch suggested that such an appeal did not reflect a genuine interest in cooperation.

I am wary because in my previous experiences of this matter I have found natural scientists deliberately avoiding the work of the social scientists who, like myself, have worked in Madagascar, and found them trying to replace it by their own "social scientists" whose research is usually superficial but more amenable to their aims and thinking. The reason is that what we have to say is too difficult and too much of a challenge to their ideas and that, as [historian Edgar] Krebs says, natural scientists lack the historical and cultural perspective which would explain to them 1) that for Malagasy peasants conservation is but one new and very similar

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A response to Meyers

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manifestation of interference and bullying by the outside (which to them includes the Malagasy state). 2) Ideas about conservation are a very new, very historically specific, fad in the West which is difficult to impose [and] at great cost on others [and] as though it was based on eternal truths. Natural scientists never hear that message, not only because they don't want to, but also because since they are ALWAYS seen as government agents they are treated by the Malagasy peasants with justifiable fear. . . and so with agreement and endorsement in the hopes that they will go away.

It seems to me that the problem in the proposed consortium is that the interests of the Malagasy concerned and of the natural scientists are fundamentally opposed and so, if social scientists represent and explain what the Malagasy feel and think, they too, will be opposed to what the conservationists want. Before plunging into a joint enterprise genuine, really genuine, dialogue must take place. It will be most upsetting to all. (Maurice Bloch, April 3, 1997, Research and Training in Madagascar. Available email Hevitra-L@psuvm.psu.edu from bloch@poly.polytechnique.fr)

In reply, Meyers thanked the author for his comments and urged "all who are interested to contact the World Bank, USAID, and other large donors for the most recent documents on the PE2 [Second Environmental Program of Madagascar] for further clarification." (David Meyers, April 3, 1997, Research and Training in Madagascar. Available email Hevitra-L@psuvm.psu.edu from dmeyers@Datalab2.sbs.sunysb.edu). He further suggested that environmental programs were, in fact, established and implemented by Malagasy institutions, implying that the World Bank and USAID funded ANGAP, and other national institution funded wholly or in large part by U.S. and European monies, are not under control of Westerners, but are instead, the national institutions they purport to be.

A response to Meyers pointed to the fallacy of his reply.

Although not out of character with the record in these matters, it is still dismaying that an invitation to bring together in a consortium the very real

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concerns of biologists and social scientists doing work in Madagascar could be followed so speedily by a different sort of invitation, i.e., to carry those same concerns to the World Bank, USAID, ANGAP, ONE, ANAE and DEF. . . . Charging at windmills and having a conversation with colleagues are not the same thing. None of the points raised by Dr. Bloch and by myself were addressed in David Meyers' response. He just passed them on.

The notion that the Malagasy are the driving force behind ANGAP and that the Second Environmental Program (PE2) – “The Landscape Approach” – comes straight from the Sakalava, Betsileo, Vezo, Tandroy, Tanosy, Antemoro, Antambahoaka, Anatefasy, Masikoro, Betsimisaraka, Zafimaniry, Tanala, Mikea, Antakarana, Mahafaly, Bara, Tsimihety, Tsihanaka, Merina and (why not) Vazimba . . . sounds a bit disingenuous to me. Perhaps it is the suspension of belief needed to accept or go along with all this – more than any horrible disciplinary divide – that stops conversation (Edgar Krebs, April 4, 1997, Research and Training in Madagascar, available email Hevitra-L.@psuvm psu.edu from Wendywa@jhuvms.hcf.jhu.edu).

Krebs' response itself stopped the conversation. There was no further interest expressed from Meyers or others, at least none that reached the list-serve of Malagasy scholars, regarding bringing together social and natural scientists.

Despite the very real divide which separates the sciences, this divide is conjured to obscure a much greater, and far reaching, divide, and that is the one which severs social science from conservation and development policy altogether. While conservation and development policy is economic policy, which would imply a commitment to social science, in their application to environmental concerns, policy makers have relied upon the biological sciences to legitimate their agendas. By prioritizing the science of the physical world over the study of the social, they have couched the dialogue in the language of the biological sciences. But it is a dialogue they know not well. As Krebs asserted,

The majority of conservationists I met while doing fieldwork in Madagascar knew very little of biology. . . . Biologists should also be concerned that of all the USAID money earmarked for conservation in

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Madagascar, only an invisible percentage has gone to fund research. I regret that there are no long-term studies of the ethology and ecology of lemurs comparable to those made by Jane Goodall on chimpanzees; no studies of the ecology of the Malagasy forests comparable to those conducted by Charles Elton in the woods of suburban Oxford; no literature on Malagasy birds that can match the essays by W.H. Hudson in "Birds of La Plata." This underlying ignorance of the natural history of Madagascar justifies the perception many Malagasy have of international NGO's operating in the island. Quoting Alex de Waal, "they see not people who are making a sacrifice to assist the poor and vulnerable, but immensely rich foreigners who descend from aircraft (and 4-wheel drives) spending a short time consulting with local people, never in the vernacular." ("International NGO's and Complex Political Emergencies: Perspectives from Anthropology," Royal Anthropological Institute, London, 1995:10) . . . The creation of a consortium is not necessary if one is aware of the problems attending development/conservation projects (in Madagascar and elsewhere), of the literature they have generated and that otherwise bears on them (which is already a rich conversation in many disciplines), and – more pointedly – of the work ethnographers and historians have done and are doing right now in the island. (Edgar Krebs, April 3, 1997, Research and Training in Madagascar, available email Hevitra-L@psuvm.psu.edu from Wendywa@jhuvms.hcf.jhu.edu).

Krebs points to a very real concern in the application of science to policy, and that is that while relying upon the biological sciences to legitimate their objectives, conservation and development administrators are, by and large, generally ignorant of science, or of the possibilities that exist of enhancing both research and policy by actually reading the work that is generated by researchers of all persuasions. For example, the very nature of research in the natural sciences has brought such researchers in day-to-day contact with local residents, who are employed by them as guides, cooks, and interpreters. Moreover, natural scientists are *researchers* and as such, most have an appreciation for the research process, regardless of its disciplinary foundations. My own experiences were that the natural scientists conducting research in the Ranomafana National Park were much more concerned with the social ramifications of conservation policy than were the

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policy makers themselves, in part because they spoke to residents and saw for themselves the chronic poverty of the region. In addition, they generally showed intellectual curiosity in the work of social scientists. While there remained a definite and discernible distinction between the language and objectives of social and physical scientists, discussion was frequent and in many ways fruitful, as each informed the other of important data and perspectives which enriched both realms of research.

But Krebs points to a very real concern regarding the use of the biological sciences to legitimate policy and the promotion of the idea that it is the inability of researchers to communicate, rather than the unwillingness of administrators to incorporate the concerns of science into ready-set economic agendas, that renders conservation and development projects ineffective and potentially destructive of local societies and lives.

Casting such a reaction in terms of an academic divide, of that lazy misnomer: paradigm problems; or of an essential quarrel between the social sciences and biology, is rather perverse. It is shifting the ground and looking at another scene not to look at what is happening before our very eyes, which is perfectly straightforward and easy to read. If the tables were turned, anybody, biologists included, would be horrified at the sight of a “native” marking off and rearranging our backyards to suit wholly alien criteria. And any biologist (I would if I were one) should equally balk at the sight of a nebulous field, implicating her/him and his/her profession, a field which slides from biology to conservation to development in erratic ways, ones certainly not governed by the ethics inherent to the pursuit of knowledge (Edgar Krebs, April 3, 1997, Research and Training in Madagascar, available email Hevitra-L@psuvm.psu.edu from Wendywa@jhuvms.hcf.jhu.edu).

Clarifying the “Cultural” Context of Medicines

Not only within the context of ethnobotanical studies, but in the development literature, as well (where the policy implications of ethnobotanical research are often manifest) the intersections of “culture” and the natural world have been approached in a

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near cavalier fashion. Development planners often remain limited in their concepts of how environmental change is related to culture by late nineteenth century views of culture as an undifferentiated “thing” to be defined and manipulated in order to bring its members into the modern world. The social forces by which culture is created are obscured by myopic views of culture as inseparable from unchanging “traditions.”

Moreover, those social forces that are identified as “cultural,” may be limited to observations of the features and practices that are obvious and outstanding to the observer. The closer one’s material world, economic system, language, and belief system correspond to that of the (Western) observer, the less likely these features and practices will be deemed “cultural,” or in need of change. Conversely, where practices and beliefs are deemed different, they are more likely to be judged as “cultural” phenomena.

As Abu-Lughod (1991) notes, culture is a conceptual tool used to create ‘the other.’ In so doing, differences cast as cultural can be so rigidly fixed in the mind of the observer that they appear innate, or racial. Such casting of social forces and practices as cultural is particularly salient to understandings of health and environmental change in Madagascar, where ethnicity has been conjured by project planners and the state to explain forest degradation, economic status, and agricultural practices. By defining ethnicity as the most important social variable determining resource use, the state and the project are operating under perversely distorted concepts of community that only deepen the chasm between Western conservationists and local residents. This chasm is made all the more unbridgeable, as the forest is literally and conceptually treated as an “ecosystem” separate from the humans that inhabit it.

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As the Ranomafana National Park Project presumed local “culture” to be the determining factor in how the environment was used and what people believed and practiced, much of the social research in the region (e.g. Ferraro 1994; Harrison 1992; Kottak 1980) has tended toward environmental determinism. While this latter view does explain current practices and views in a general sense, and lends a useful perspective to understandings of how the agricultural system, economic systems, and various forms of social organization interrelate, it does not account for the diversity of behaviors and views among local residents. Moreover, by presuming the practice of swidden agriculture to be an adaptation to the environment, the question of whether or not it is, in fact, adaptive, is not asked. When applying the concept to the relationship between the environment and health, furthermore, it is unclear whether health-seeking behaviors are or are not adaptive in differing environmental contexts.

There is another important consideration regarding how cultural concepts are applied to understanding the relationships between health and the environment. As Foucault (1979:271) has observed regarding penal institutions, social problems become removed from the realm of politics and placed in the realm of technology as the prison system combines coercive regulations with scientific propositions, social effects, and “invincible utopias.” Social problems are no longer understood as *political* problems, but are instead regarded as *technological* problems, requiring technological, or scientific, solutions. The transformation of the political into the technological is characteristic of current conservation and development policies in Madagascar, and is a subject to which I return in Chapter Four.

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Use of Ethnicity by the Ranomafana National Park Project

By using science to legitimate health, land, and agricultural policies, the Ranomafana National Park Project recast social tensions, inequalities, and competing power interests as cultural traditions in need of technological remedy.⁷ And while doing so under the cloak of cultural sensitivity, they elicited sets of “cultural beliefs” from questionnaires that, as Millard (1992:4) has indicated to be a common practice among health professionals, ended up trivializing the relationship between cultural systems and health. In the case of the RNPP, the relationship between health and the environment thereby became one in which practices and beliefs were sorted into one of two “cultures” and so sorted, equated with one of two “agricultural systems” that were alleged to hold differing “threats” to the environment, and consequently justified social regulation.

In associating cultural practices with agricultural systems, the project conflated culture with ethnicity, presuming that ethnic identity and cultural practices were the same thing. Having it fixed in their minds that the Betsileo and the Tanala represent two separate identities and, most importantly, two separate cultures, project reports began to reify the distinction by indicating that the cultural system in which the project was launched was characterized by two distinct groups, the Betsileo, whom they claimed are more amenable to social change, and the Tanala, whom they characterized as clinging tenaciously to their traditional practices (RNPP 1994). Because the project viewed

⁷ I would like to thank Professor Laurie Medina for bringing to my attention this parallel between Foucault’s work on the prison system and the project’s approach to conservation and development.

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environmental change as something that is fundamentally wrong and its social impact uniformly experienced by local residents, it was unable to explore the ways in which local residents used their environments to maintain their health and standard of living, and more importantly, how the social structure in which residents lived differentially influenced how they would use the local environment. Hence, environmental change was conceptualized as “forest exploitation,” “deforestation,” or “slash-and-burn” farming, and culture was reduced to ethnic affiliations in which Betsileo were positively evaluated, while Tanala were negatively evaluated. It was no wonder, then, that when the project established a local ethnographic museum aimed at increasing tourists’ cultural awareness, the museum was adorned with photos of hard-working irrigated rice agriculturalists identified as Betsileo, and music-playing, dancing, singing, shaman-worshipping, forest-burning Tanala.

The project tied these ethnic distinctions to health by employing a Malthusian model of population increase to explain the relationship between health and environmental change (RNPP 1994). Primary health care was regarded by Project officials as necessary for three reasons. First, increased population pressure was identified as the primary threat to sustainable conservation efforts. Second, improving people’s health was reported as essential to maintaining economic productivity of the local population. And third, because the residents identified health care as their most important need, providing it was regarded as good P.R.

Because those identified as Betsileo were regarded as more intelligent and more amenable to change, they were consequently viewed as more likely to adopt family planning practices. Those identified as Tanala, in contrast, were not only regarded as less healthy than Betsileo – their poor health was regarded as their own doing, because they

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did not live like Westerners, did not have latrines, did not so readily join the globalized economy, and were viewed as culturally crippled in their own health care by their reliance on shamans over physicians. They were also regarded as being less likely to practice family planning. The actual beliefs and practices of villagers, which vary more on the basis of age, class, lineage, and religion, were ignored in favor of concepts of ethnomedicine that were essentialized in terms of ethnicity.

While employing the concept of ethnicity is often essential to understanding social identity, the use of the concept to understanding people's views and behaviors may block inquiry into other important cultural features which divide and unite people. The question remains, when applying anthropological concepts of culture to social policies, how do we draw out the more subtle and complex dimensions of identity which shape how people actively manage their environments and health? Anthropologist Kay Milton (1996) proposes reformulating the concept of culture to reach these interlocking dimensions of identity and social difference. She suggests thinking of culture in terms of what is unseen, that is, exploring how people's experiences shape the way that they think, interpret, and feel about the world in which they live. Whether such a definition draws us closer to culture or further from it (toward the individual, whose experiences take on cultural relevance only through social discourse) is not so important as is the terribly obvious, but obviously overlooked, idea that people be asked about their experiences, feelings, and ideas about their world, before presupposing any cultural or "ethnic" traditions displacing such personal experience. When linking environmental change to changing health, it is these nuanced details of identity that draw us closer to understanding how the views and behaviors of differing groups of people forge the social and environmental linkage.

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Contrary to the simplification of the local residents of the Ranomafana region as "traditional" people from one of two cultural groups, they are no different from people anywhere in that they are active, contribute to the creation of their own cultures, and their actions are directly related to their social positions. Moreover, while these social positions do not determine one's actions or perceptions, they are influential, intersecting with personal experience. As Milton (1996) suggests, personal experience plays a salient role in the social construction of culture, and an exploration of individual experiences and narratives provides a telling portrait of cultural complexity.

Farmer (1995) has also emphasized in his ethnography of AIDS that illness is an individual experience, and it is only through an ethnography of individual experiences that medical anthropology can dispel stereotypes of illness, suffering, and treatment in "the Third World." In chapter eight I discuss how the illness experiences and subsequent deaths from the indigenous diagnostic category of "albumen" were experienced differently for two men of prominence from two different lineages. In that chapter, I show how nearly everyone in the community agreed that plant medicines were insufficient for curing the two men, yet the explanatory models of why these particular men fell ill varied widely throughout the community. Moreover, the environmental, political and economic contexts in which these two men lived and fell ill contributed markedly to their deaths.

This study contextualizes medicine use within a model of culture in which culture is seen as active, changing, and contested, comprising multiple individual experiences that converge, diverge, coincide, and contradict. While shared interests may be apparent when a society is positioned against the interests of the state or other outside agents, closer scrutiny reveals that, encroaching forces of the state aside, at the local level various

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components of the medical system can be understood as contested resources. These resources are differentially accessed in terms of power relations at multiple social levels.⁸

The geographical scale of a village-level study provides insights into the use of medicines in a tropical forest community, where power relations are becoming increasingly differentiated within a single generation. While representing a single year in a single community, such insights do permit one to draw conclusions about forest medicine use in a broader context. The very personal stories which unfold illuminate the reality of forest farmers as being variable, unique, and shaped by both social and personal experience. As such, to reduce a group of people to their purported "culture" provides an inaccurate portrait of their lives, as well as that of others categorically placed within the bounds of a particular culture. This is not to suggest that an understanding of culture is by its very nature misleading or false, rather, I suggest that culture should be understood in terms of the differences and changes which create it.

⁸ By "power" I refer to the degree to which a person can influence the behavior and beliefs of others. Thus, power extends from one's formal social authority, such as a political or religious leader, to one's informal position, such as age, gender, lineage, and wealth status. Whereas a political leader may have "official" power, if they are unable to influence others they remain relatively powerless, whereas a person who is in a position to lend money or provide wage work, has a greater degree of power. In this sense, too, men may be viewed as more powerful than women to the extent the influence their gender grants them over others supersedes other categories of "power." That is, the power of one's gender is relative, because there may be other factors contributing to power in a community. If a woman is in a social or material position that enables her to influence the behavior or beliefs of others, then she may, in fact, have more "power" than does a man whose only claim to power is through his gender. Power is not something that corresponds to any single criteria, although wealth status does come close. Power is a quality forged of multiple social features and only when the intersections of these features are explored can one's "power" be discussed.

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The political ecology approach to health that I build upon also draws out the anthropological context of forest healing to illuminate the social and political dimensions of the scientific process. It shows that culture is alive – that those who become sick and die, those who gather leaves and bark for healing illnesses, those who walk across bridges and hills to reach pharmacies to buy antibiotics for their children – are people with names; they are not faceless tribal members blindly pledging allegiance to tradition. They are instead creators, by creating new practices that may or may not be consistent with “cultural traditions.”

Methodology

From 1992 to 1993, supported by a Social Science Research Council Predissertation Fellowship, I conducted historical and archival research regarding land tenure, health, and medical systems in Madagascar, at both the *Institut National des Langues et Civilisations Orientales* in Paris, France (under the direction of M. Pierre Verin) and at the National Archives in Antananarivo, Madagascar. During this same period, I made a preliminary visit to the Ranomafana National Park, residing in the village of Ranomafana from April 1993 to August 1993. During this period, I met with other social and biological scientists conducting research in the region, as well as local project administrators. Project documents were made available to me during this visit, under the administrative direction of Dr. Joseph Peters, Principal Conservation Technician at that time. As such, I was able to familiarize myself with prior and ongoing research and policy in the region.

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From January, 1995 to July 1996 I resided in the Ranomafana region of Madagascar. The first four months were spent in the village of Ranomafana, awaiting research clearance before project officials would approve my relocation to a village.⁹ This period was devoted to making local contacts, studying the language, and informally interviewing pharmacists, health care workers, and project employees.¹⁰ I completed surveys of customers in two local pharmacies during both the dry and wet seasons, to determine the social category of the people using pharmaceutical medicines, for what reasons, and at what cost. Under new administrative supervision, project documents were no longer made available to me.

From April of 1995 until the end of June 1996, I resided in the village of Ranotsara. Ranotsara had been a pilot village of the project, it had a history of colonial health care and subsequent western health care provided by the project, it had recently lost significant access to this health care when it was drastically cut from project development programs, and it had undergone significant environmental and economic changes as a result of increasing irrigated rice agriculture. It was adjacent to the national park

⁹ Upon arriving in Madagascar in 1995, I learned that the institution which had agreed to sponsor my research would not do so without material considerations in excess of those I was able to provide; as such, the project agreed to sponsor my research clearance, which was subsequently provided to me by the *Ministère d'Eau et Forêts*. Despite providing the project with a copy of my research proposal clearly detailing my research and educational background, I was cleared to conduct ethnobotanical research of medicinal plants as a botanist from Duke. It was not for many more months that this error was cleared up.

¹⁰ I was explicitly directed from the American project manager that any formal interviews I attempted prior to my research clearance (which was not delivered for over four months, despite assurances it would take only a few days) would lead to my eviction from the region.

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boundaries, with swidden rice agriculture practiced by all residents, but expansion of these rice fields had been prohibited in recent years by the establishment of the park. Moreover, while its relatively remote forest location made use of medicinal plants a common practice for health care, its relative closeness to the main road made access to western medicines common as well.

I initially drew a map of the village, and then conducted a demographic survey of each household. With the assistance of a local research assistant, I conducted tape-recorded in-depth interviews with men and women of each household regarding access to land and resources, agricultural practices, work responsibilities, and health status. Detailed interviews were also conducted regarding how individuals identified and treated local illness categories, how they conceptualized the relationships between nutrition, economics, hygiene, and health, which medicines they used most commonly, when they consulted others for health care, and who they sought out for treatment.

A wealth-ranking exercise was completed in which respondents, selected to represent apparent wealth differences, were asked by me to sort households based on local criteria of wealth, which included access to land, access to labor, and access to money, as well as stores of food. Cattle ownership had become so rare that it was no longer considered a marker of wealth, because only one household that was considered wealthy had cattle, while two other households considered to be of intermediate wealth had a few cattle, and two households considered to be of greater wealth had none. The information produced through these wealth-ranking exercises form the basis of how I represent “class” or economic status in this dissertation.

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From representative wealth categories, and reflecting a balance of gender and age ranges, I established a focus group which met weekly to discuss issues regarding economics and health, as well as strategies which might improve independent access to medicines and health care. The membership of this group changed from week to week, with some people being regulars, others more sporadic. In every case, when one person could not make it, every effort was made to find a replacement of similar age and wealth ranking, and of the same gender. This social representation was not always possible, but in any event, the multiple participants provided for a greater range of community voices. Many of the comments represented in the following chapters were derived from these group conversations.

I also prepared genealogies of Ranotsara which inspired discussion of village history and social organization, as well as agricultural and work calendars for men and women to determine periods of peak workload, income, and health status. These genealogies and their subsequent revisions and clarifications (for correcting and discussing the histories they revealed became a local pastime) led to the lineage distinctions I discuss.

Histories of the two respective lineages were obtained in tape-recorded interviews of two lineage heads, and these histories are summarized in Chapter Five.

I worked with three different local healers, visiting them weekly, in meetings which focused on the illnesses they treated, methods of diagnoses, and plants used for treatment. The information provided to me during these meetings provide the comments I have recorded regarded illness treatment, and have contributed, along with information from others, my conclusions about the changing role of indigenous healers.

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A resident of the village conducted daily visits of each household, interviewing them regarding illness symptoms, episodes, and treatment; her information helped me to select illnesses to follow up on, as well as to understand the multiple treatment strategies employed and the prevalence of different illnesses.

In addition to these structured methods, I conducted participant observation. I lived in a house which I had built in the village. I employed a young woman to assist me with cooking. I assisted in planting, weeding and harvesting rice, pounding rice, bananas and coffee, cooking, attending local ceremonies, rituals, and funerals. I visited homes during illness episodes, and assisted in caring for the ill. I spent considerable time with the children of the village, and with the women. I did not spend as much time with the men of the village, which obviously limits my understandings of men's roles, but I did visit regularly with elder males and interviewed them regularly regarding their care and treatment of the sick.

At two points during the process of my research, my dissertation advisor, Dr. William Derman, visited my site and met with officials in the city of Antananarivo. During these visits he reviewed my research methods and findings, providing direction for focusing my inquiry.

Organization of the Dissertation

This study is organized as a story of a land and people. It is couched in history, because it is impossible to understand the story otherwise. It is contrasted to policy – particularly international environmental and economic policy that penetrates the far

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But in presenting history and policy, I do so by recurrently engaging the voices of the villagers who hosted my stay. The specific quotes are taken from notes of events and conversations. In some cases, in order to make particular dialogues and anecdotes memorable, and to make the people more real to the reader, I elaborate on the discourse from memory. I do not rely on memory for explanatory discourse – if a comment is important, central to my argument, although a verbal exchange may be embellished to provide more authenticity, the explanation or point reported is taken from notes or tape-recorded interviews. In cases in which I attribute a particular position to a particular institutional representative, I indicate by citation that my information was derived from direct, personal communication with that person, and was recorded in my notes.

The narrative form I adopt is intended to give life to the subjects of my research, and to subordinate the "research problem" to the people whose lives science has problematized. That is to say, I tell stories, whose connecting themes provide a plot which can be conceptualized as the research problem.

Feminist anthropologists (e.g., Abu-Lughod 1993; Behar and Gordon 1995) have been among the vanguard in challenging the language of ethnography which separates art from analysis. By questioning the privilege of anthropologists to speak for the colonized and calling for more biography, social history, narrative, literary essays, fiction, and stories of the fieldwork experience, they believe that the voices and lives of those less privileged will become more central to ethnography. At the same time, the barriers which separate the writer from those she is writing about are weakened, as oral histories penetrate written

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Another way in which feminists have been in the forefront of challenging the bias of a privileged authorship has been through the social critique of science. For example, Harding (1991) suggests that questions be asked of science and nature which draw out how science and technology are responsible for social problems. In so doing, she suggests that the conventional questions science asks, those which illuminate only the benefits of science and obscure the ways that science creates problems, will become more balanced by questions which are of interest to people of subordinated social status.

Toward this objective, I have sought to make the experiences of the Malagasy more central to this story by presenting them as the protagonists of the story. By employing the technique of narrative, I hope to provide the reader with an understanding of the people as the centerpiece to the environmental story I tell.

Chapter Two provides a discussion of the geographical and social setting in which the research was conducted, and introduces the Ranomafana National Park and Project as it entered the lives of the residents of Ranotsara. In order to provide context for my discussions of land use, ethnicity and the use of ethnic categories, and health care in Ranotsara and in Madagascar, the section I introduce in Chapter Three is necessarily a partial overview of the project; I return at different points in the study to more detailed discussions of the project and how project strategies and objectives compared to broader social histories.

In Chapter Three I discuss the history of pre-colonial and colonial policies regarding land reorganization in Madagascar in order to show how forests are

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conceptualized and used by contemporary people on the island. I follow in Chapter Four by elaborating on how land reorganization in the southeastern forests near Ranomafana has been tied to changing identities. I show how present concepts of ethnicity – which, in the Ranomafana region are directly related to conservation and health policies – are problematic and do not reflect how the residents view themselves.

I continue the discussion in Chapter Five by relating the founding of the village of Ranotsara and the creation of two distinct lineages which divide and unite the villagers in unexpected ways. I then discuss how the history of health and health care in Madagascar has been associated with the land and social reorganization of Madagascar. I contrast this history to how others, including the state and international policy makers, as well as the RNPP, view the social context of health and its relationship to the environment.

Chapter Six shifts to stories of how several different illnesses were diagnosed and treated, and how deaths were handled during my residency in Ranotsara, to show how different people had different access to health resources and knowledge, and that this differential access had more to do with one's relationship to the local economy than it did to their cultural identity. This relationship was further mediated by age, gender, and most importantly, lineage.

In Chapter Seven I continue the discussion of health and illness, by focusing on a single diagnostic category, albumen, with multiple “explanatory models” and treatment strategies, bringing into question notions of “traditions” and medicine. In this chapter I suggest that lineage or social power alone cannot explain one’s economic position or health status, as even members of the highest ranked lineage, and indigenous leaders, are

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In the Conclusion, I summarize the key points I make, drawing together the stories of the present and the past to demonstrate how using a political ecology of health perspective contributes to our understanding of forest medicines in the context of forest lives.

I have used pseudonyms throughout the dissertation, and have done so in order to protect the anonymity of my informants in accordance with my university agreement regarding the rights of human subjects. Nonetheless, I am not entirely comfortable with this decision, because most of the informants with whom I lived and studied regarded themselves as individuals whose views were important, if continually ignored. By failing to use their own names, it may appear that I am rendering them more anonymous than they prefer, but it is a dilemma I cannot easily resolve. For administrators of the Ranomafana National Park, I use neither names nor pseudonyms. I have used, instead, professional titles only, translated into English. Clearly, determining their identity requires little effort; as representatives of a very public enterprise, and the project having encouraged publicity on its own behalf, it would be impossible to discuss the project with absolute anonymity of its representatives. My reason for choosing to refer to them by title only is that because they were operating, albeit as individuals with unique personalities and psychologies, as institutional representatives, it would matter little who wore these hats. The names of all researchers, however, are real.

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While Ranotsara is a pseudonym, all other place names are real, as is the Ranomafana National Park. All institutions referred to are real and referred to by their given names or acronyms.

The use of tense is always problematic in ethnography. To use the past tense implies that things *were*, that people *were*, that the people one writes about have ceased being with the departure of the ethnographer. On the other hand, to use the present tense implies that things have not changed since the departure of the ethnographer, when in fact, lives have continued and changes have unfolded. What was true during the period of fieldwork may not be true by the time the ethnography is written.

I cannot solve the problem of tense, I can only choose that which suits the narrative best. In this case, when speaking of specific events, I use the past tense, because they did happen. But when providing ethnographic or political detail, I use the present tense unless I know the situation has changed. The choice to do so does not imply that changes have not occurred, but indicates only that to the best of my knowledge, the situation probably remains much the same.¹¹

Regarding my own role in the ethnography, I have chosen to include my presence, because it did indeed have a significant impact in the village. I introduced material objects to the village which had previously been absent, or in some cases totally unknown. I brought with me pharmaceutical medicines, which I dispensed and which influenced the

¹¹ I have made every effort possible to substantiate where changes have taken place, but communication with both the village and the project have been limited since my departure due to the isolation of the village and the resistance of project personnel to this research project.

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use of pharmaceutical and plant medicines. I introduced my own ideas and politics. I brought into the community a micro-economy by providing jobs and loans. No matter how "objectively" I tried to draw out class inequalities and tensions, there was no escaping the fact that I certainly reproduced class inequality by the glaring gap between my access to resources and those of the people with whom I lived. Although I tried to learn about and follow as much as I could of their way of living, and was often affectionately labeled "Tanala," with newly accomplished skills or understandings, I know that I remained a privileged white outsider in many people's eyes.

What follows, then, is the story of what I learned, never having shaken the role of material privilege into which I was born, and never having found some secret passage into "Tanala culture," revealing hidden mysteries of the Other. This is a very Western story, after all.

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Chapter 2

THE RESEARCH SETTING

A Biodiversity of People: The Research Setting

Although Madagascar is noted for its forest environment, not all Malagasy live in forests. People do live in crowded cities, as well as small towns, tiny hamlets, forested hills, deserts, and coastal fishing villages. The geographical terrain includes tropical, cloud, and montane forests, grasslands, and desert. The island is distinguished by a spine of mountains running longitudinally down the center of the island. The southern regions of the island are dry, barely fertile desert. In other parts of the island, shifting cultivation, primarily of rice, but also of manioc, maize, beans, and other crops, has been practiced with varying intensity since early settlement, combined with pastoral production. In addition, irrigated rice has been practiced for at least two hundred years, but land suitable for wet-rice production is limited throughout much of the island. Along the coastal areas, fishing supplants agriculture as the primary economic practice.

No matter how remote a village, its inhabitants have ridden in cars, listened to radios, maybe even watched television sets. They have all seen well-dressed Asians, Europeans and Americans, packing cameras, notebooks, computers, tape recorders, or Bibles. Most rural residents engage in economic exchange of one sort or another with

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people from other regions, countries, or continents. The concept of "remote" is a bit tricky, as a person can be cut off from roads and communication during certain rainy months of the year, constrained by old age or affliction from going to town for supplies all through the year, and yet at the same time, be economically dependent upon market prices in a town they haven't seen in years or even decades.

Human habitation, however, has been characterized more as an intrusion upon the idyllic Garden of Eden so frequently conjured in images of Madagascar. Harrison (1992:74,75) provides a characteristic summary of how human culture is regarded as a threat to the island's non-human ecology:

The past serves a clear warning. Within the past two thousand years giant lemurs roamed the mosaic of forest and wooded savannah that once cloaked the plateaux. There were dwarf hippos and a giant tortoise with a shell well over a metre long. And huge elephant birds like the towering *Aepyornis*, chest like a wine barrel, thighs like a horse's, egg big as a football: probable source, through sailor's tales, of the legendary Roc that carried Sinbad off in its talons.

The plateaux are now bare and increasingly barren. The bones are all that remains of the creatures that once lived there. A row of twelve sad skulls in a glass cabinet in Tsimbazaza zoo commemorates the extinct lemurs. The skeletons of *Aepyornis* and dwarf hippo, and the shell of giant tortoise, stand beside them. No major climatic changes occurred that could explain their disappearance. But, some time during the first centuries of our era, longboats sailed over from South East Asia, by way of southern India and East Africa, bringing the first humans to the island.

Within a thousand years of their coming, no land vertebrate heavier than 12 kilogrammes survived. Their habitat, the plateau forest and savannah, was destroyed by fire, turned into pasture for the longhorned, humpbacked Zebu cattle which the settlers brought over, and rice paddies in the valley bottoms. The survivors were hunted to extinction for their meat.

A new wave of extinctions may be imminent. The main threat is the clearance of the rainforests to provide farmland for growing populations.

In all such accounts, whether popular or policy-oriented, the people are not among the island's "wealth," they are not a part of the island's "treasure trove." They are, at best,

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"friendly," "poor," "uneducated." At worst, they remain fixed in superstition and ignorance, as the following comments of a well-known travel writer attest:¹

By temperament they are disinclined to look more than twenty-four hours ahead, on any issue (Murphy 1985:151).

While pregnant, Ruth had been advised by her local friends to take extra care as some *ombiasa* [diviners], far out in the bush, still like to get hold of unborn babies; the sun-dried heart and eyes of the unborn are added to their necklaces as particularly powerful charms. This sounds like an extract from one of the more luridly heathen-bashing chapters of the Reverend Matthews or the Reverend Ellis. Yet when I recall the faces of a few of those Mahafaly herdsmen it seemed not entirely impossible that in certain areas such customs survive (Murphy 1985:153).

....these seemingly easy-going, cheerful, friendly Malagasy are so constrained by a complicated system of beliefs and prohibitions (superstitions, to us) that fear is one of their dominant emotions -- even in the 1980s (Murphy 1985:89).

Fortunately casual travelers only need to know that they are dealing with a society far more complex than it looks and to remember that they may be seen as potential dangers because *vazaha* [foreigners] are ignorant of local taboos and could possess mysterious powers to which the Malagasy have no antidotes. This is why so many *fady* [taboos] surround the treatment of *vazaha* and why one's behaviour in a village should, as far as possible, be guided by the people (Murphy 1985:60).

The stereotyping of Malagasy as hopelessly fixed in traditions of ancestor worship, divination, and irrational fear of outsiders, has been used to separate contemporary forest farmers from the recent history and political economy of their regions, including

¹ While drawing from travel books may appear a poor choice, in that they are hardly authoritarian and are well known to contain distortions, inaccuracies, and a heavy handed dose of romantic imagery, they are important representative texts, particularly in this age of global tourism. Travel books not only encourage tourism of foreign lands, but in so doing, they influence the perceptions and actions of tourists who often expect to find superstitious savages, bare breasted or wearing loin cloths. Travel books thus serve to condition the views and interactions of foreign travelers, and they reinforce deeper images of places like Madagascar – places imagined as dark, forbidden and forbidding, untouched by the modern world.

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precolonial autocracy and *corvee* labor, colonial rule, and neo-colonial resource appropriation. Just as Murphy could explain Malagasy codes of conduct regarding foreigners as a superstitious fear of their "mysterious" power, with no mention of the history of pre-colonial autocracy, colonial rule or neo-colonial foreign authority over their land and lives, so too can conservation and development managers explain agricultural practices as "tradition" (RNPP 1994) or one can find in *Sierra Magazine* the following explanation for why people living near Ranomafana do not have enough food:

As in much of the tropics, the people living in the Ranomafana rainforest of southeastern Madagascar are the forest's worst enemy, slashing and burning huge swaths of trees to clear land for crops. Plowing the soil would help them raise more food on a single plot of land and let them stop roaming so destructively through the forest, but just teaching people to plow is not the answer here. For the people of Ranomafana, plowing is taboo because it turns the earth's back on God (Knox 1989:81).

The people where I lived howled with laughter when I read them this passage.

"We had a plow," 21 year old Lalao explained. "I think it was Faly's [the village leader]. Everyone used it . . . everyone who could. We liked it, but it only helped a few people with wet-rice fields. You can't use a plow in a *lavy* [swidden] field. I don't know what happened to it. He probably had to sell it, it really wasn't worth keeping, because only a few families could use it. Most people don't have the land for a plow. That is why you don't see one here now. It has nothing to do with Zanahary [God]."

Viewing the economic practices of forest residents as destructive, tied to tradition, and in need of control by outsiders, is not just a view of non-Malagasy. Indeed, urban-based, educated Malagasy are frequently among the most condemning of the practices of their rural compatriots. In the following quote, written by a Malagasy for a WorldWide

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Fund for Nature (WWF) Report, swidden agriculture is not only viewed as destructive, but is also viewed as a result of the state "giving" forest residents access to the land, an open access regime viewed as innately unmanaged.

Madagascar's enormous biodiversity is extremely important from a scientific point of view. Traditionally our Queen regulated the balance between Man and Nature, deciding on distribution and utilisation of natural resources through a feudal system, whereas the French colonialists laid down clear regulations, but this was no real guarantee of conservation. At independence in 1960 government had strong control of the resources, but in the 1970's people were given free access, which led to severe deforestation and grass burning with resultant soil erosion (Rabetaliana n/d:1).

This quotation illuminates how the forest, and its use, are viewed by the Malagasy state as a national resource to be managed by the state. Conversely, the Ranomafana National Park Project, while ostensibly a "national" institute, operates under the impression that the forest is a "global" resource. By suggesting that species deemed of scientific or economic value must be protected, the 1973 U.S. Endangered Species Act has legislated the rights of U.S. citizens to manage forests outside the boundaries of the United States; this legislation grants Western conservationists the moral authority to intervene in Malagasy land management on behalf of "science" (see Zerner 1996 for a discussion of such conservation narratives). Not only is this perception expressed in the rhetoric and discourse of RNP project administrators, the institutional affiliations of the RNPP reflect a view that Madagascar's flora and fauna are of global concern. The RNPP is financially backed by not only USAID, the WorldWide Fund for Nature (WWF), and the MacArthur Foundation, but it is institutionally supported by the World Bank, which funds and controls the *Association National des Gestations et Areas Protegee* (ANGAP) the Malagasy institution charged with overseeing national parks and protected areas.

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While these various institutions deliberate how to best manage Madagascar's forests by volleying reports back and forth between Washington, New York and Antananarivo, by way of faxes and the Internet, the residents of the Ranomafana forest view the forest in which they live, work and die, as their rightful land, a conviction of such force that conservation policies are regarded less as policies of protecting the land than as policies of seizing the land.

And unlike other far more participatory efforts in other conservation and development projects and in other national parks, the residents of the Ranomafana forests have been completely excluded from the debates on proprietorship of the land (see Hanson [1997] and W. J. Peters [1997] on how participation has been represented and thwarted by project officials). Moreover, local views of how the forest might be managed have been completely disregarded in favor of preservationist views of biodiversity as a graven image morally superior to the human lives of the forest ecosystem.

To shift the discourse from one of non-human biodiversity to one of human diversity, in this chapter I discuss the daily lives of those who become sick, those who work in the fields. First, after a brief description of Ranotsara, I discuss the way one lives in a forest village, showing how men, women, children, and older adults spend their time. I then discuss the agricultural system of the area, showing how swidden horticulture, irrigated rice agriculture, and cash-crop production all comprise a single agricultural system. I then show how the Ranomafana National Park Project has affected the lives of Ranotsara's farmers, as well as how Ranotsara's farmers are perceived by the Project.

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The Village and Villagers of Ranotsara

The village of Ranotsara is located in the southeastern montane rain forests of Madagascar, where the altitudinal gradient ranges from 600 to 1200 meters, with an annual precipitation rate of approximately 2900 mm. (Ferrarro 1994). While the climate is very hot and dry from about October to the end of December, from January to March, heavy, constant rains begin, including one or more cyclones every year. Such cyclones commonly destroy crops, homes, and even kill people. The threat of cyclones, therefore, is very real to the residents of Ranotsara, who must work daily in the thundering rain, with few clothes for protection, and can still face serious loss should a cyclone destroy their homes or fields. From March through September, the rains continue, becoming much gentler, with intermittent sunny days.

From a distance, Ranotsara is a lovely, quiet hamlet of thatch and tin-roofed houses made of mud, resting amongst banana, coffee, and jack-fruit trees in the center of vast wet-rice fields, often shimmering in the brilliant green of swelling rice. Surrounding these fields rise stony, forested hills, reaching to the celebrated forests of Madagascar, just a ten to twenty minute walk from one's home. The eerie cries of lemurs echo through the village every morning and every evening – the residents readily discern a species just from the sounds it makes as it plays. Children play just as joyfully, and their laughter enlivens the peaceful image of the village, while the rhythmic beating of dozens of women and girls pounding rice, bananas, and coffee provides a steady percussion to mark the time of day.

Reaching the village, a different view envelops the visitor. The people are poor – most wear shredded, filthy rags for clothes; a few wear brightly-colored new clothes imported from the West – Beverly Hills 90210 t-shirts for the boys, frilly acrylic dresses

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for the girls, one or two digital watches on the wrists of young men. Nearly everyone is at once, both scrawny and strong – while some men are obviously robust and muscular, others are barely heavier than their bones. Yet regardless of the fat on their flesh they are all active – hauling wood, beating rice, planting crops, and carrying children.

Virtually every child has some visible health problem – bellies bloated with worms, noses running, ears oozing white or yellow pus from infection, skin encrusted with scabies lesions, huge boils protruding from legs and arms. Most are coughing or wheezing. A public health survey of the region found that 69 percent of the children under the age of ten were underweight, and 11 percent were wasted (having low weight for height) (Kightlinger 1993). The parasite load of children was 97 percent (Kightlinger 1993). Their parents and grandparents are often as sick, and yet they defy the stereotypical image of lethargic, malnourished Africans. Instead, all, young and old, scrawny and robust, hungry and sated, are working, playing, interacting.

The profoundly poor health of the people in an area of such "species rich" forests struck another observer as well. Visiting the newly-established Ranomafana National Park in the early 1990's, Paul Harrison noted of Ambodiavy, one of the park's model villages and about ten kilometers from Ranotsara:

The health of Ambodiaviavy's people is among the worst I have seen in seventeen years of travel throughout the Third World. Half the children were infected with malaria, though only one in six had had fever in the past fortnight. The children delouse one another in lines or circles of four or five. The village is riddled with fleas. It took me three days to get rid of the ones I caught. One in six children has scabies lesions on their hands. One in three has lesions from the jigger flea. The female eats her way into flesh, covers herself with a cyst, and converts herself into a living brood chamber, bloated with her swelling eggs. The hatched larvae eat their way out. Locals pick the cysts out with a pin--but the sore often gets infected.

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There are internal parasites. Over 90 per cent of the children have an average of six roundworms, as big as a medium sized garden worm, living in their stomach. One child had a hundred, with a combined weight of 2 kilos. Half have whipworm as well, and a third have hookworm. These parasites consume much of the limited food that the child eats. This contributes heavily to child malnutrition. So does diarrhoea--one person in three has an attack in any given fortnight. Almost six out of ten children are malnourished--one in ten severely so.

There are the bleak cases like forty-eight-year-old-Fambelo, who hobbles around on a stick, no longer able to dig his fields, with swollen, aching throat and back pains. He has been seriously ill for a year but hasn't seen a doctor, because he's afraid of the cost in drugs and hospital charges. Blind, landless Miray can afford no treatment or help, but supports his five children working on others' fields, feeling his way (Harrison 1992:86).

Harrison's description of sickness in Ambodiaviavy is not much different than one encounters in Ranotsara, where just as "blind, landless Miray" supports his children by working in the fields of others, foregoing the health treatment he so badly needs, others confront both similar and differing fates and obligations shaping their health in multiple ways.

Living and Working in the Forest

The hard-packed reddish earth of the village landscape is swept or trampled clean each day, while the periphery of the village remains muddied with discarded rice husks and the feces of pigs and children. Chickens and ducks run in and out of homes, pigs are sometimes penned up, sometimes not, sleeping along the edge of a house, passing through the village. Cows periodically pass in herds through the edge of the village, leaving large puddles of feces in the yards of homes, or the paths of residents. Everyone is barefoot -- a

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few in the village own rubber sandals to wear to market on Sundays, but in the village shoes are never worn, and most have never had a pair put on their feet.²

There are approximately thirty homes, altogether housing from 180 to about 200 people, a third of them children or teens. Homes are mud-walled, and usually thatch-roofed. Some houses have tin roofs, although most of these are rusted and leaking (while a new tin roof reflects cash available to buy it, an older tin roof may or may not speak to wealth; tin was more affordable twenty or thirty years ago, many people could afford it). Most floors are hard-packed earth, some are cement. Woven grass mats are rolled out for company, and for sleeping on at night. Often the floors are covered with old worn mats that have settled into the wet dirt floors as if a part of the earth. Most homes measure about five meters by five (though some are as large as nine-by-six), with a wall running through the center to mark off two rooms. Each room has a small window with a wooden shutter to close when it rains. Two of the houses are considerably larger, having two stories, with cement floors, vinyl-padded chairs, and even coffee tables. Beds are in most cases a rolled-out grass mat on the earth floor, or laid across a bed of planks in the larger

² While wearing shoes – assuming a resident could even afford them – might cut down on the transmission of parasites, in a village surrounded by rice fields – where it is virtually impossible to get anywhere without wading through rice fields, streams, and rivers – shoes are impractical. Moreover, it remains necessary to remove one's shoes when entering a home – bare feet retain and transmit much less dirt and feces than the soles of a shoe do. To be wearing and removing shoes every time one enters a home, which is to say, several times an hour, becomes tedious, especially since there is no place to leave the shoes during heavy rains – and taking the time to remove them would soak a person even more. While I began my fieldwork adamantly donning my parasite-resistant Teva sandals, I soon gave them up altogether as I experienced the incredible obstacles they presented in daily village life and going in and out of homes.

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homes. In a few cases, mattresses stuffed with thatch or rice husks (and loaded with bed bugs) provides a soft pallet on which to sleep.

Possessions are few. Grass mats, woven by women every May and June, are the exclusive property of women. So are their pots and pans, although again, these are few. One or two six-quart aluminum covered pots for cooking rice. Maybe a smaller four-quart pot for cooking *laoka*, the generic name for any sauce that goes on rice, usually boiled greens or beans, rarely chicken, crayfish, eels, pork or beef. Some baskets, woven yearly like the mats, are used for storing the weeks' or days' supply of rice, coffee, or greens. All women and older girls own a *mpandrary*, a well-worn jaw of a cow, used for smoothing and tightening grass mats. All women have a plastic bucket for hauling water, some have two. Some women have a plastic hair clip, or a pair of earrings, to wear on market day.

Other possessions are the domain of men. They include the dishware, such as a few enamel-covered tin bowls or plates, a few large soup-spoons for eating the rice, maybe a fork or two, two to four tin cups, perhaps one or two plastic glasses for drinking *toaka gasy*, the local moonshine. A large wooden spoon used by women to stir the rice as it cooks. A knife, usually hand-made, also used by women to cut greens or other vegetables. Farming tools are the possessions of men, even though women are as active in farming as are the men. These include spades and knives used for farming and hunting, as well as baskets for catching crayfish, frogs, and eels, empty bottles used for *toaka gasy* or cooking oil, tin lamps to be filled with kerosene, perhaps an old flashlight, usually without batteries. Two homes have radios, which often provide reports of the coming weather or national policies that may affect the farmers. Batteries, when available, are left

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in the sun (when available), a practice which sometimes helps to charge them. Two homes have hand-powered sewing machines, much prized among the women, although they belong to the men. Men also own the blankets, most families having one or two at most, for the whole family to share. The temperature will often fall to the low forties; cool, wet days are far more frequent than hot and humid ones.

One thing the residents of Ranotsara did not have was garbage. When I first arrived in the village and asked the children where I could throw an empty can, everyone was perplexed. Such a thing would never be thrown away; someone seized it and took it home. Over the next few days I proceeded to collect all my garbage, including plastic wrappers, broken bottles, discarded batteries, wasted note paper, and the like, and asked if there was a place to bury it. A crowd encircled me to watch me bury so much old plastic, paper, and broken glass. Never had they had the money to buy so much, much less bury so much. They expressed both disgust that I would be so wasteful (while I was thinking myself ecologically correct for only throwing out what was to me so little), as well as envy that I could be so rich as to throw away so much. It didn't matter – the pigs would root up whatever was buried, and the children turn to toys, or their parents to utensils, all my waste. Eventually, it was rarely necessary to throw anything away, though I continued throughout the year to be the only one with garbage.

Other prized possessions include any type of cannister that can be tightly closed. Because rice and soap are two of the favorite meals of rats, having a means of securing them is a genuine need. Nestlé milk tins, rare due to the egregious cost of the product, are among the most prized, while any type of cannister discarded by foreigners will do the

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trick. But having tightly-closed cannisters or containers big enough to store rice, or small enough for soap, was rare. Often women would find that the soap or medicine they'd purchased (at a price which they couldn't afford) had been eaten at night by the rats. Rice was often eaten as well, although bananas could be hung out of reach. One woman brought her baby boy to me to show me how a rat had nibbled his foot in the night and he hadn't even woken. Another woman, Soa, showed me the scars on her foot left by a rat that had bitten her in her sleep. She giggled as she described it. "I felt it, but I was too tired to do anything but kick it," she explained. I told her I thought it was horrible to be bitten by a rat in your sleep. "That's true," she conceded, "but that is our life, I was happy it ate me and not the rice." She giggled again and asked me if I had any *toaka* to drink.

Children's possessions include two different types of sling-shots. The wooden and rubber-laced Y-shaped sling-shot is owned by boys. The other type is a macraméd cord which girls use. The slingshots are used to shoot at birds which infest the rice fields, or to catch birds or small animals for eating.

Toky was twelve years old, but looked about nine. A grin the size of a crescent moon, and a belly like a watermelon he was so bloated with worms, Toky is a survivor. His father had died when he was six, and he learned at an early age to take over the tasks of the household while his mother worked in the fields. He chopped and hauled wood for cooking, made his own breakfast, lunch, and dinner of boiled green bananas, which he never tired of. He roasted his own rice for snacks and cared for his little brother, iPaul, throughout the day. There really isn't much that Toky cannot do – he is clever, ambitious, and the best story teller in the village.

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But he is very poor, and not having the money to buy a length of rubber, which cost about ten cents, he had no sling shot. When I learned that several of the boys in the village were in the same spot as Toky, not having what was one of the most basic tools of a young boy's daily living, I invested about two bucks and bought them all rubber.

Toky was probably the proudest boy in the village with his new sling-shot, which he made from the limb of a tree after my giving him the rubber. He proved such a fine craftsman at it, that he soon found himself teaching the other boys how to make their own. Once done, Toky boasted daily of the birds he'd caught in the rice fields, or the small animals he'd shot to feed his family. "But don't worry," Toky told me, "I won't use it on Masobe," he said with a grin, referring to my neighbor who was forever snitching coffee, sugar or oil from me. And then the grin vanished and a most serious look came across his face, "unless" and Toky's giant eyes slowly sailed toward Masobe's house, the threat dangling in the air for just a moment too long, before he picked up the sling-shot, mimed a shot at Masobe, and rolled on the floor cackling.

One day, a French tourist who had been hiking through the hills arrived out of the blue. He was given a place to sleep in an unused room of a cement-floored home. He kept to himself and showed little interest in the residents. Toky, who had been learning English from me, was most eager to show off his new but limited language skills, not quite understanding that white people often come from different parts of the world. As far as Toky was concerned, this was another *vazaha* (foreigner), he was white, he spoke a funny language, he must be like me. Besides, I could speak to him (in French), so why couldn't Toky speak to him as well (in English)? What I had failed to explain to Toky was that French and English are two different languages, and that this man did not speak English.

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Toky went to visit him, taking his new sling-shot to show off. He came back shortly, very unhappy.

"*Sady-be ianao* [you are very sad]," I said to him, "*inona ity* [what is it]?" I asked.

Toky explained that he had gone to the *vazaha's* room and tried to talk to him, but the man had no interest in talking to him, he was more interested in reading his book filled with pictures of lemurs and birds.

"*Maka* sling-shot!" he said, telling me he was going to take his sling-shot, his favorite new word in English, and continuing in Malagasy, "shoot the tourist, because he is not a real *vazaha*."

"How do you know he is not a real *vazaha*?," I asked him.

"Because he does not even know the word *sling-shot*," he said, emphasizing again the English word. "I will tell the police he is a spy, or comes from another world.

Everyone knows *sling-shot*," he exclaimed, shaking his head in amazement at the tourist's ignorance of this most basic word. A sling-shot was, to Toky, the most basic of human possessions, and to not recognize one was practically unhuman. And with that, Toky, more gentle and rare than a Golden Bamboo Lemur, launched into a pantomime of doing away with the tourist with his sling shot (right through his eye ball), chopping up his body with a kitchen knife, washing the knife clean, chopping down and hollowing out a tree in which to hide his body, and finally tossing the tree -- loaded down with imaginary rocks -- into the Namorona river.

Suddenly, a sputtering of incomprehensible babble sprang from Toky whose eyes flared with rage as he jumped up with his sling shot and shook it fiercely. And just as suddenly Toky's face changed to one of innocence and fear, as he threw himself on the

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floor and looked up to an invisible presence, imploring with his sling shot held between his folded hands, "*fa tsy olona izy* [but he was not human]," he cried, "*tsy fantany* sling-shot! [he did not know sling shot!]" he explained, and with that Toky rolled again on the floor laughing hysterically.

(He repeated this story, with more and more elaborate variations on the concealing of the body and the interrogation by the police, for several evenings afterwards. It took me the longest time to figure out what the incomprehensible babblings were – his version of a policeman speaking English, a disturbing reminder that authority, in Toky's world, speaks in a foreign tongue).

While the sling shot is perhaps the most basic possession of both boys and girls, other possessions of children include their school books, a pen or pencil, a notebook for their homework, and sometimes homemade wooden toys. One of the most common such toys are hand-crafted wooden blocks which the children called "cassette radio," and which they carried with them, pushing wooden "buttons" and singing their own songs.

The only other possessions the people of Ranotsara might have would be tools of the trade, such as plates, coins, or mirrors, used by *ombiasa* (shamans) for divining misfortune or sickness, a globe owned by one of the teachers, or cow horns owned by *mpanjaka* (village leaders) and used for offering ceremonial *toaka*. A few young men owned *kabosy*, hand-crafted wooden ukeleles, which were often brought out for planned or spontaneous parties.

Perhaps the most prized possession of both men and women are *lamba*, or brightly-colored cloths. *Lamba* are used for clothing – wrapped over clothes, or worn

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alone as skirts or dresses for women. They are also used for carrying children on the back, tied like a sling. And most importantly, *lamba* are used to wrap the dead. When Soa's husband, Lita, died from what appeared to be hepatitis, I remarked on how few clothes he and his family had during his life, yet now that he was dead he had many *lamba*. Lalao, a young woman and friend replied, "Yes, that is the Malagasy *fomba* [custom]. You have no *lamba* when you are alive and need clothing, but when you are dead and need nothing, you will be well-dressed!" She appreciated the irony of having nothing until death, yet having nothing to be buried in would be an even crueler irony.

Clothing is limited for everyone. Some have a good set of clothes, for going to market or wearing at ceremonies, but not everyone. Yet most people have at least a change of clothes, to wear when the others are washed.

Tsaralahy was one of the people who had no change of clothes. Six years old, skinny as a stick, Tsaralahy had a raggy pair of shorts to wear, without so much as a button or piece of elastic to hold them up. He could always be seen clutching his little shorts as he ran, trying to hold them up while he played ball, stood in the doorway, walked to school. Although I employed his mother, and gave her cloth and buttons, Tsaralahy's shorts were never repaired or replaced. In fact, they eventually disappeared altogether, and Tsaralahy, covered with scabies lesions within a few months, was naked twenty-four hours a day.

"Why doesn't his mother use the *lamba* [cloth] I gave her to make him some new shorts?" I asked some of the women.

"*Tsy fantatro* [I don't know]," one answered. "She likes the cloth for herself. She drinks *toaka* [homemade rum]."

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I remained puzzled about Tsaralahy and why he had no clothes. I asked repeatedly why his mother did not make him clothes. She always assured me she would. I asked repeatedly why others did not intervene. But no one could give me a clear answer. The school teachers had done their best, one of them, Bodo, explained. "We told her that he was ashamed to come to school because he has no clothes. We told her that he would need clothes to attend school."

"What happened?" I asked.

"He stopped coming to school."

Tsaralahy's mother finally relinquished the *lamba* she had been wearing, which I had given to her to make her son's shorts, when she wrapped Tsaralahy for burial on New Years Day. Like so many other children in the village, including those well fed and well-clothed, malaria hit suddenly and hard, and left his parents wounded and deeply scarred. Yet the story of Tsaralahy is baffling because a child is so loved in Madagascar, that to neglect one is both rare and incomprehensible. As I show in Chapter Four, however, Tsaralahy's neglect, and the community's failure to intervene, were not the only such incidents I witnessed. One question I cannot answer remains, did his mother so prize *lamba* that she would reserve it for herself, rather than convert it to shorts for her son? The answer matters little, as the *lamba* could not have saved Tsaralahy, but the medicine his parents desperately sought as his life gave way may well have.

Daily Activities

Just as dying is done in the home, so too is cooking, on a three-stoned fire pit over which corn, tobacco or, rarely, strips of beef or eel, hang to smoke. In some cases, there

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are separate homes for cooking, and in a few cases, cooking is done outside, under an open-walled thatch roof. The walls and ceilings of homes in which one cooks are a lacquered-black from the smoke, with soot-covered cobwebs enshrouding the rafters. As light penetrates the small square of window, the sunlight illuminates the cobwebs with an intriguing soft beauty, as if the home were draped from corner-to-corner with filaments of silk. The dried ears of corn suspended over the fire glow with shining black and golden kernels. The smoke from the fire drifts and curls into the sun, while an infant sitting by his sister may pee a barely noticed trickle of urine onto the floor, an older man might spit in a corner, a rat might pass unhurried along a wall. A tin cup is wiped clean with an old rag and dipped in a pot of coffee, sweetened with sugar the hosts can't afford, and offered to the guest.

Concepts of health and cleanliness are different here, where a bar of soap costs a day's wages, water doesn't run from the tap, and there is hardly any dry land twenty meters from a house on which to build a latrine. The homes rest on an island amongst the rice fields, and a grove of coffee trees provides the village with a natural and somewhat private "latrine," with special areas for children and sick people.

Moreover, keeping clean is a continual challenge for farmers, who labor in wet-rice fields, where the mud is calf-deep, and thick with worms and feces, or they work in the hillsides, digging, planting, and chopping in the equatorial sun. Women pound rice, bananas and coffee up to two hours a day before it is even ready to cook. Children learn to crawl and walk in the mud and dirt, because they have no alternative. Babies have no diapers – cloth is too expensive, and so is the soap to wash them.

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Keeping clean is a challenge. Still, as with everything, people differ in the importance they give to cleanliness. To be clean was considered having hair that did not smell bad, to have bathed recently. One could be covered with mud and still be clean, if one's body had been washed recently, just as one could be mud and dust free, but still be considered dirty, if one had not had a bath and smelled foul.

Even given this definition of clean, some people are cleaner than others. In particular, older people placed more importance on bathing and cleanliness than did younger people. This was variously attributed to the indifference of youth, the stress that the colonialists and missionaries placed upon cleanliness in the past, and the growing poverty that makes keeping clean when one's workload increases, and yet has less money for soap, such a constant challenge that it is easier to give up and live with filth, than to combat it.

While I heard no end to the explanation for poor hygiene, sickness, and even poverty, as being due to the people being too *kamo*, or lazy, to do differently, this explanation (usually offered by Malagasy elite or Americans) was hardly plausible, given the daily lives of the residents. The local economy is based on farming, and as such, everyone works from sunrise to sundown, in the management of their environments. Women rise at about four-thirty or five, nurse their babies, go to the river to bathe and bring back water for cooking. Older girls (from the age of about eight) pound the rice for breakfast, as their mothers start the fire (their husbands or sons having chopped and brought firewood), boil the water, clean the newly pounded rice, cook it, and prepare some greens if they are available. More often, breakfast is boiled green bananas or manioc, because for all the rice that is grown it is not enough for three meals a day all

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through the year. The entire region has been a net importer of rice since the mid-1980s (Ferraro 1994), a period coinciding with the advent of structural adjustment policies.

After the breakfast dishes have been taken to the river and washed, children go to school, while their parents begin working the rice fields; older women will usually remain at home to watch over the young children, sort beans, and cook, older men (and sometimes women) may just gossip and drink *toaka*, or they may participate in housing repair and construction. Growing poverty and social change has recently forced some older people to work in the rice fields of the wealthier residents, for wages of approximately 30 cents a day. For the most part, everyone is active and most engaged in hard labor, and this hard labor is centered around agricultural production of rice.

How the production of rice has been represented by various writers and policy makers, however, is in sharp contrast to the way that it is experienced by those who work the fields. Inextricably linking swidden rice farming to the changing forest cover in Madagascar, the standard representations of *tavy* are those of destruction.

The Forest and the Land

The term for swidden agriculture in Madagascar is *tavy*, and, ignoring the history of rapid industrialization, mining, and export production in nineteenth century Madagascar (discussed in detail in Chapter Two), it is a term conjured continuously to "explain" deforestation in Madagascar. *Tavy* is typically described as follows:

With 90 percent of the forest gone, uncounted species have lost their habitats and become extinct, and most of the soil cover has been lost to erosion.

This destruction is largely due to slash-and-burn agriculture. People are constantly burning the rain forests for agricultural purposes -- it

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is the way they make a living. First, the villagers burn the virgin rain forest and plant crops in the fertile burned areas. But since the soil loses its fertility in 3 or 4 years under these conditions, fields soon cease to be productive and so the farmers move on to another patch of rain forest and begin the cycle again (Wright 1993:451).

Most images of *tavy* that are presented to the public focus on its destructive aspect – and it is, indeed, destructive to forest cover. Photos of *tavy* suggest burned hillsides, trees reduced to stubble. References in policy documents, and academic and popular articles, refer to it as "slash-and-burn," illuminating the practice of chopping the trees, burning the "virgin" forest, abandoning fields. This image, however, does not correspond to the image of *tavy* that many farmers hold. Farmers refer to *tavy* as inter-cropped fields, yielding rice, manioc, maize, beans, greens, and other crops. Indeed, as I walked along a dirt path with twelve-year old Kalapiso, she pointed to a field of ripe manioc, and asked me to take a photo, telling me that *tavy* is not just burned earth, which we had just passed and I had photographed, it is also food and therefore, life.

The life of the forest, then, is inseparable from the lives of the residents. While the forest is typically characterized as an intact ecosystem threatened by encroaching *tavy* farmers, it is viewed differently by the people who live and work within in. To the residents of Ranotsara, the *ala*, or forest, is the land in which they and their ancestors live and die, their source of sustenance. Viewing the forest as both their past, present, and future, they do not see themselves as outside it – rather, they view those who seek to keep them out of it as outsiders of the forest.

In addition, the forest is not perceived by the residents of Ranotsara as a bounded environment – the forest extends to the village, having multiple terrains, textures, and transitions. What I and others have termed "the village" is to the residents the *tanana*, or

community (itself a problematic concept, with ever-changing patterns of residence and alliance that I discuss in more detail in Chapter Three).

The *tanana* is a part of, or within, the forest landscape. Dense forest, incorrectly termed "virgin" forest by many Westerners seeking to capture a paradoxical image of undefiled growth, is more precisely termed *ala be* [great forest] by those who live with the trees, and distant forest is called *tety*. As the forest is transformed from a landscape of undomesticated to domesticated sustenance through the process of *tavy*, it passes through stages. Whereas an etic view of swidden horticulture speaks of plots left fallow, the Malagasy forest farmers view regenerating land as *jinja*, as this land is planted with cash crops, it becomes *hibohibo*. Each of these stages is valued for providing essential resources to those who manage the "fallow."

Tavy itself has two stages, as Hanson (1997:36) explains:

Mitavy ala and *mitavy kapoka* are the two phrases used to describe the clearing, burning and planting of primary forest and healthy secondary forest respectively. The Tanala also refer to swidden as *manazava tany* (to make the land clear) and *manadio tany* (to clean the land). The ambivalent and complex attitudes the Tanala maintain toward forested land is apparent as one considers these phrases. For while forested land is thought to be "cluttered" and "wild", vegetation is also the sign of land that is still fertile - land that still has *tsiro* (taste).

Tavy, therefore, is as much a part of the forest environment and process as is a dark and tangled grove of trees. The forest is alive and moving, and differing faces of the forest provide differing needs.

The contrast between local views of the land and forest, and state and project views of the forest as a degraded landscape caused by swidden farming, is not limited to Madagascar. Fairhead and Leach (1996) noted that scientists and policy-makers have,

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since the late nineteenth century, considered the patchy landscape of Guinea's forest cover to reflect a process of continued degradation, also associated with swidden farming. Incorporating historic photographs of the region with maps and local narratives, the authors found that contrary to representing a progressive loss of forest cover, the patchy landscape was, in fact, a reflection of both stable and progressive forest growth. That is, despite the received view that there had been an original vegetative state from which the present landscape could be used to infer degradation, forest cover had either been relatively stable or had actually increased with time. Fundamental to the received view, they suggest, is the fallacy of a climatic climax vegetation in which there exists a state of "natural" vegetation in a given region, which remains unchanged except by human interaction.

Fairhead and Leach (1996) argue that contemporary environmental policy's reflect prejudices and assumptions of colonial science, in which local inhabitants were assumed to be ignorant of the land, and colonial administrative policies regarding land and resource control shaped ways of thinking about local land and resource practices. The objectives of colonial policy thereby influenced the methodologies of colonial science, leading to "scientific" legitimization of uninformed assumptions.

Colonial science developed not only ideas concerning forest loss, but also methodologies for elucidating vegetation change which became and have remained 'authoritative'. Central has been the deduction of long-term change from snapshot or short-term observations, inferring process from form. Thus it is that forest islands appear as relics indicating a historical process of forest loss; a deduction now made not only from on-the-ground botanical, forestry and vegetation survey observations, but also when forest islands appear in remotely-sensed imagery (Fairhead and Leach 1996:114).

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Fairhead and Leach point to the need for historical research to understand the different processes that shape how landscapes change unevenly. Feeley-Harnik (1995:55fn) raises this same point for Madagascar, suggesting that remote-sensing analyses of the island have been used to attribute changes in forest cover in the eastern regions of Madagascar, without addressing problems related to the baseline data such analyses use to assess rates of deforestation. She points to how reports of deforestation trends in Madagascar regard Malagasy agriculturalists as an undifferentiated group, and have not considered the major historical transformations of land use and land tenure in Madagascar, processes which have contributed to the complexity of present land use practices.

Feeley-Harnik suggests that the faulty methodology of science has been incorporated into contemporary conservation policy in Madagascar. In this same way, Fairhead and Leach (1996) find that in West Africa, the popularity of conservation movements have enabled the contemporary Guinean state to continue replicating colonial science.

Scientists and others have also repeatedly observed Kissidougou's landscape from a social position which made forest destruction logical, and attention to local inhabitants' opinions difficult or unimportant. Racist, pejorative views of African farming and forestry practices came to dominate Guinean's colonial administrations. The preconceived opinions and hurried visits of today's foreign experts, and the attitudes and training of urban-based state functionaries, compound such views. It can be argued that the image of the rural farmer as environmental destroyer, and hence the need for modernization of resource management and farming techniques, conforms to and helps to justify the self-distinction of urban intellectuals as 'modern' and progressive; distinctions reinforced under the First Republic when the urbanized were politically and economically privileged, and their vision of a highly mechanized, capital-intensive technical future dominated approaches to rural development [Riviere, 1971] (Fairhead and Leach 1996:114, 115).

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Feeley-Harnik (1995:45) echoes this comment, "Yet the older arguments opposing plants to people, and primordial 'slash-and-burn' planters to modern world citizens, persist." Land management practices in rural areas are indeed much more complex than representatives of the state or conservation projects may represent them to be. In the case of Madagascar, the process of *tavy* cultivation is not the simple, lazy-man's habit of growing a garden that the term "slash-and-burn" suggests, but is instead a labor-intensive agricultural strategy that regenerates the land as much as depletes it.

The Agricultural System of the Ranomafana Region

Hanson (1997:37-39) provides a model description of how farmers manage the *tavy* process – and how this labor contrasts with how it is perceived by outsiders. His description merits quoting at length:

Contrary to the implications of the phrase 'slash-and-burn', *tavy* land preparation proved to be a complex process indeed. In late August, Botovelona began chopping down the small trees and larger shrubs constituting the forest under story (*manaratsaka*, or *tavy zanakazo*). Then, working with a large ax (*famaky*, *andronana*), he felled the larger trees (*mandavo sangy*), careful to direct them in such a sway that they might help prevent soil erosion during the torrential rains. For a month and a half, Botovelona waited for the newly cut vegetation to dry in the sun (*manaina tavy*), and in mid-October, he burned (*manoro tavy*). Before burning, Botovelona prayed to Zanahary [God] and the forest spirits (*fahasivy*) to request permission to burn. After waiting for a few days for the land to "cool", Botovelona then when through the field checking for trees that were not dried in the fire.

In November, Botovelona, his immediate family, and those relatives he could enlist from his kin cooperative began planting. Before planting, however, Botovelona performs a *sao-tany sotra* (a simple thanks to the earth), asking Zanahary and the forest spirits for their blessing. Then the planters move in a line across the steep field poking a stick sharpened at one end (*fitomboka*) into the ground and dropping two to three seeds into the holes. In the first *tavy* planting, Botovelona plants rice, preferably *toamasina* or *tomborongo* - the two preferred varieties of upland seed.

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Beingizina and *vary malady* are also planted in the *tavy*, yet these are generally less favored. The first rice is often intercropped with cucumber, corn, and various greens. In January and February, the fields must be weeded (*miava*). The guarding of the field against *fody* occurs in March and April, and the field is finally harvested in April and May. The reaping of *tavy* rice is variously labeled *mipitika vary*, *misongo vary*, and *mila vary* and involves clipping the tops of the plants (the *salohim-bary*) with a small knife (*karima*). *Tavy* rice yields in the first year are generally low, averaging 0.5 tons/hectare (RNPP 1990:6). Botovelona now waits until August to once again weed the field and to turn it over into clods (*manifikifika*). He waits two weeks and burns the plot again. In September, Botovelona plants beans and corn and harvests these crops in December. After planting rice in his *tavy* field for two years in a row, Botovelona faces a number of choices. He can go ahead and plant rice for another 2-3 years, intercropping it with a wide range of vegetables. However, this choice quickly deteriorates the soil's fertility. He may decide, on the other hand, to dedicate the plot to bananas or coffee trees. While bananas generally take only one year to produce results, coffee can take up to seven or eight. If Botovelona does choose the cash crop option for his field, he can no longer plant rice there and must look for an additional plot. The decision faced by the farmer after two years of rice in a *tavy* field is influenced by such factors as whether or not he has other plots to work with and if he can readily borrow rice during the period his cash trees grow.

The complexity of the options facing Botovelona in his *tavy* field stand in stark contrast to most representations of *tavy* farming in Madagascar as easy and simple. Nothing could be further from the truth. In fact, the farmer's strategy of how, when, and what to plant in his upland fields could spell the difference between famine and survival should a heavy storm during the cyclone season submerge and rot his valley crops.

"Deforestation" and even "the forest," then, are complex concepts, which the project has not even attempted to understand. Hanson's perspective reveals a sharp contrast from those who have already defined the problem. Likewise, my own conversations with residents revealed that contrary to not understanding the processes of environmental degradation associated with swidden production, the residents of Ranotsara are more concerned with forest land than forest trees, because it is the land that sustains them. "We need the land," Masobe, an elder village male explains, "but not the forest. But

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the land is not enough, if we do not have enough workers to work the land." Masobe understands the value of workers -- his wife has died, and his only living child residing in the village has, like many others, begun working for wages of 1,500 fmg a day (about 30 cents at the time of my research), for a wealthier resident who owns irrigated rice fields.

Bodo, a 32 year old village school teacher and mother of five girls, elaborates.

"Land is more important than the trees. Even though we have learned about the animals in the forest, we need food more than trees. There are people who don't have *tanim-bary* (irrigated rice fields) and so they need *tavy*. And for those who have *tanim-bary*, they need chemical inputs. For those who are poor, who don't have *tanim-bary* or the money for chemical inputs, they need the forest for *tavy*."

Masobe and Bodo's suggestions that the land and trees are separate does not mean that they do not understand the ecological relationship between land and trees. As Hanson's description reveals, *tavy* farmers possess sophisticated understandings of the interrelationship between land and trees and that trees are necessary to prevent erosion. But they have been presented with a conservation ethic that itself separates trees from land, by emphasizing the value of trees. In response, Masobe and Bodo have sided with the land.

When sufficient land is available to farmers for allowing *tavy* fields to remain fallow for ten to fifteen years (which some outsiders refer to as "abandoning"), it proves to be a sustainable agricultural strategy. Nonetheless, as populations have been forced to settle in villages and remain stationary, and as current privatization of lands have prevented farmers from migrating, the land base has been diminished, fallow periods shortened, and more and more people forced to increase *tavy* production.

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The current agricultural system employed by subsistence farmers combines *tavy* with irrigated rice agriculture and cash crop production. Rather than representing three different types of agricultural systems, the land is farmed as a single system in which three different cropping strategies are practiced simultaneously to maximize yields. In Ranotsara, the majority of farmers where I lived owned *tavy* fields exclusively, lacking the labor and suitable land for irrigated rice, while a minority owned (or rented) irrigated rice fields. Most all had some sort of cash crop land, such as bananas or coffee.

The daily work is seasonal, yet certain patterns are maintained. The wet-rice fields will be prepared by the men using *angady*, long-handled, narrow-based spades, after cattle have trampled the fields (while a generation ago every family owned cattle, now only three families in the village have any cows, with most belonging to one family, to be discussed subsequently). *Tavy* fields are cleared with *antsy-be* (big knives), and burned, after which tree roots are dug up by men.

After the fields are prepared for sowing, women and young girls work in teams to plant the rice. This can be very arduous work, because it requires being bent over for hours at a time. Moreover, the wet-rice fields are infested with parasites and feces, making it a rather unhealthy environment in which to work. Once the rice has been planted, it must be weeded daily. While weeding is primarily the responsibility of women, the recent shift to wage labor in Ranotsara has necessitated some men and young boys to begin participating in this activity.

When the crops are mature, they must be harvested, which is the responsibility of both men and women. *Tavy* rice is the easiest to care for and to harvest, although the

steep terrain of the fields make it a bit difficult to work. *Tavy* rice is cut off in stalks with a small home-crafted blade, while a large sickle is used for cutting wet-rice. While both men and women will cut *tavy* rice, only men and boys cut wet-rice. Women and girls then thresh the rice to remove it from the stalks. The rice is then ready to dry in the sun, later to be stored and pounded.

Other crops that must be planted, weeded, and harvested include beans and manioc, both important dietary staples. In addition, most families either own, or tend, banana and coffee trees, which provide an important cash crop.

The farming activities of all adult men and women can take from four to eight hours of every day; the only time they have off is in the event of a death (in which case all but essential work ceases for three days), if there is an important festival, or if a governmental or health representative comes to the village. In addition to the daily farming and cooking activities, water must be hauled from the river at least twice a day, clothes must be washed, children cared for, houses repaired, medicines collected and prepared, firewood collected and chopped, fish traps set in the river, tools crafted, and trips made to the market to purchase supplies or sell crops. The day usually ends at sundown for the men, a bit later for the women who must wash the dinner dishes.

The Labor and Education of Children

It is not possible, however, for the adults of the village to finish a days' work in a day. The labor of children is vital to the productivity of the household and village. Children contribute to the household by watching younger children (primarily the

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responsibility of girls, but also of boys), by helping prepare the meals (in some cases, preparing them alone, while their parents work the fields), pounding the rice, collecting and chopping wood, and working in the fields for wages and meals, or if their parents are fortunate enough to own and control their own fields, by assisting their parents.

About one-quarter mile from the village is the two-room village school. Two resident teachers instruct two levels of students; lessons include reading, writing, and mathematics. There is minimal instruction beyond that. Few children or youths can recognize Madagascar on a world map, while I found none who were locally educated who could identify Africa, the United States, or France. Nonetheless, school is vitally important to most every parent, who will sacrifice their own needs in order to pay for their children's pencils and notebooks. The school teachers, however, have few supplies of their own, and must depend upon very old curriculum guides, limited chalk, and tattered foam for erasers.

School begins after breakfast, and lasts until about three, with a two hour break for lunch. After school, most children take their sling-shots to the rice fields and scare off the birds as they feed at the end of the day. Other children go to the forest to catch insects or small game for protein, while others (young boys) go to the forest to tend the cattle and guide them from field to field.

Regional Links

Administratively speaking, Ranotsara is situated in the *faritany* (province) of Fianarantsoa, with the *fivondronana* (sub-province, or local political seat) in Ifananadiana, approximately 32 kilometers east of Ranotsara. Despite its proximity, Ifanadiana remains

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distant. The nearest road is Highway 25, which runs 205 kilometers from Fianarantsoa in the southern highlands, to Mananjary on the eastern coast. Highway 25 is about a one-and-a-half hour strenuous hike from Ranotsara. To reach Ifanadiana, one must first hike the eight kilometers over the mountains to the main road, await a local *taxi-brousse*, pay 6,000 fmg for one-way fare (approximately \$1.50 at the time of my fieldwork, and representing four to five days' wages for most villagers), and hope that business can be taken care of in time to catch a *taxi-brousse* returning, for which one must pay an additional 6,000 fmg.

Such a trip often requires spending the night with extended family or friends in Ifanadiana, in order to take care of all business and get back before nightfall, then hike the hour-and-a-half over the mountains to return to the village. In the rainy season, such a trip is often very difficult, if not impossible. In addition to having to hike and climb over the slippery muddied path, there are three rivers to be crossed; in the rainy season, one of these rivers must be crossed by way of a long single log set across the banks of the river -- requiring a challenging balancing act on the slick wet trunk, particularly difficult if one is carrying a child on the back, a basket of bananas on the head (to be sold at market), and a toddler in the arms. This river alone discourages many women from even making the trip, regardless of its necessity (while others skip merrily along defying gravity).

A second river is crossed by wading knee-to-waist deep across its width, but then one must cross massive Namorona river, which must be crossed by way of a bamboo raft, similar in design to a *pirogue*. Not everyone, however, knows how to maneuver the raft, particularly women. Consequently, when one reaches the river, if the raft is waiting and they or someone accompanying them, or by chance reaching the bank at the same time,

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knows how to steer it, they can cross without problem. On the other hand, if the raft is on the other side of the river, with no skipper in sight, or if the raft is available but a skipper is not, then one must wait. Because the path from the villages to the main road is heavily traveled, such a wait is never very long, no more than an hour at most, (unless the sun is setting, in which case, travelers have returned home, except for the occasional drunken youth or late-comer).

During the rainy season, however, this raft is frequently unavailable. The heavy torrential rains that pour from January to April (continuing, though much lighter, until October), as well as frequent cyclones, often destroy the raft. During my stay it was not uncommon for the raft to be repaired one morning, only to be destroyed the same night. A communal effort contributes to the maintenance of this raft. Young men from the five villages that depend upon it take turns repairing it or building a new one; unfortunately, every time it came the turn of the men from Ranotsara to repair the raft, it remained unavailable for weeks at a time. Residents from other villages continually chided the men from Ranotsara for their laziness, a reputation that was even invoked by project representatives to explain the alarming death rate. The men from Ranotsara responded that it was useless to repair the raft, it would only be smashed the following night, so why bother? Instead, they could wade shoulder-deep across the river, as long as they followed the safest route, or they could hike through the cane fields to the shallowest spot in the river, having no need of the raft.

The route through the cane fields, however, is very narrow, difficult, and almost impossible to traverse for pregnant women or women with small children. Moreover, it is a favorite haven of boa constrictors, which most women fear (there are no poisonous

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snakes in Madagascar, but they do get very big). As such, when the raft was gone and it was up to the men of Ranotsara to repair it, you could be sure that it would be a while and the women would be angry. Sometimes, residents of one of the other villages would get tired of waiting and they would go ahead and repair it, other times, it might be a month before a raft was repaired. At any rate, the raft to cross the river was a continuous obstacle to travel, and during the rainy season a trip was never ventured without inquiring as to whether or not there was a raft.

Despite the difficulties one encounters in order to reach the main highway, trips to Ifanadiana are essential for the two local schoolteachers, at least one of whom must go there every month to collect their governmental pay – often to find no one available to distribute the money, and therefore requiring an overnight stay until someone shows up who can pay them. And anyone wishing to register land, as the national policy of land privatization requires, must go there. Anyone wishing to access dental services must go there. Anyone needing any health care beyond the most basic primary care must go there, or at least to Ranomafana. Anyone needing to press civil or criminal charges against someone, or having such charges pressed against them, must go there. In short, trips to Ifanadiana are frequently necessary, and entail considerable time, effort, and money, to make.

The nearest and most commonly-used market for residents of Ranotsara is also along the main road, just across the Namorona river, in the hamlet of MoraToky. For most farmers of Ranotsara, MoraToky is where rice, bananas and coffee will be sold, and oil, soap, sugar, or petrol purchased. About a ten-minute walk from MoraToky, also

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along the main road, is the town of Ranomafana, which also serves as a very important market center.

In Hot Water: The Transformation of Ranomafana

With the onset of French colonial rule in Madagascar at the end of the nineteenth century, a thermal hot springs was discovered near the village of Vatomainty (meaning "black stone"). By the 1940's, the French had transformed the surrounding community into a celebrated resort for medical treatment and cure. During the first part of the twentieth century, a multitude of healers and chronically ill people migrated to the area and the village of Vatomainty was renamed Ranomafana ("hot water"). Throughout the period of colonial occupation, Ranomafana was popular as a resort town frequented by European and elite Malagasy from urban areas, while the surrounding rural communities remained dependent on subsistence farming.

In the early 1970s, a Japanese-constructed hydroelectric power dam was constructed in Ranomafana to provide electricity to Fianarantsoa and a saw-mill located near there, as well as to Ifananadiana and the businesses and homes of non-local residents of Ranomafana. The dam utilized local labor with non-local Malagasy supervisors (Hardenbergh 1993). Hardenbergh (1993:75) suggests that the presence of non-local personnel for the dam, along with increased purchases by the family of the *gendarmierie*, sent by the state around 1970 to stop thievery, contributed to increased market prices in Ranomafana. By the mid 1980s, Ranomafana had become a very important market center for residents residing in the nearby forest villages, such as Ranotsara. While daily commerce continued in MoraToky, Ranomafana had attracted numerous outsiders and

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outside money, thereby positioning it as a central market center. Virtually everyone residing in Ranotsara has family in Ranomafana, and during my stay most residents visited there at least once a month, while others, primarily the old, visited Ranomafana rarely.

In the late 1980s, however, the role of Ranomafana in the lives of residents of Ranotsara, changed dramatically beyond its role as a local market for goods. During that time, a primatology research team from Duke University visited the Ranomafana region to locate and assess endangered lemur populations. Accompanied by local guides, the researchers were shown several species of lemur which live in the forests of the region. One of these lemurs, the Golden Bamboo Lemur, was unknown to Western scientists, and another, the Greater Bamboo Lemur, was believed to be extinct. Following this find by Westerners, serendipitously coinciding with the 1986 U.S. Foreign Assistance Act which mandated that USAID link development aid with environmental protection, and with USAID's own declaration of Madagascar as a priority for such aid, one of the researchers involved in the Duke project contracted with the Malagasy government to have 41,500 hectares of the local forests declared a protected area, while she pursued, and subsequently secured, U.S. funds to establish a National Park in the region. Consequently, on August 14, 1990, through a grant agreement between Duke University and USAID, the Ranomafana National Park Project (RNPP) was thus born as the administrating agency responsible for launching the Ranomafana National Park during its early years, and was incorporated into USAID's Sustainable Approaches to Viable Environmental Management (SAVEM) programs. The Project thereby became one of USAID/SAVEM's six Integrated Conservation and Development Projects (ICDP's) in Madagascar.

With the creation of the Ranomafana National Park Project, the Ranomafana area was once again host to foreigners and urban-based elite Malagasy who have, historically, been viewed by those living in rural areas more as foreign oppressors, than as national compatriots. The arrival of the foreigners has, however, also brought with it the opportunity for some people to prosper from commerce with the outsiders. In the town of Ranomafana, which is centrally located in the forested area, those who own restaurants, hotels, or Western-styled housing have been advantaged, while prices for local goods and produce have increased beyond the purchasing ability of most local residents. Hanson (1997:41,42) notes that

over the last five years, prices in the Ranomafana market have skyrocketed. People in Ambodiaviavy believe that these increases are due to the numerous *vazaha* (foreigners) attending the market. Ecological tourists from all over the world visit the RNP and before entering the forest, stock-up with provisions bought at the local market. Believing that most *vazaha* "have wealth" (*manan-karena*), the salespeople raise the prices of fruits and vegetables. These merchants are then reluctant to sell such produce to area residents as they are never sure when the next tourist will arrive.

Hanson further points out that of these merchants working in the Ranomafana market, only two claimed that their ancestral lands were located in the region; the remaining were merchants were from large cities and were primarily

Thus, while the project promotes an image of empowering local communities through economic development, it is clear that beneficiaries are not necessarily those who have relinquished rights to the forest. The project makes no secret of its "trickle-down" approach, in which prosperity of local elites is considered a first-step toward economic development.

Many programs are top-down or bottom-up, but the middle should also not be ignored. Skilled entrepreneurs and businessmen can be helpful in

implementation. If these people feel the project is assisting the local economy, they can give useful advice and assistance (Wright 1993:18).

Nor do those prohibited entry from the forest necessarily stay out. Recognizing that local residents did not necessarily respect the authority of the outsiders, the project hired local residents to "monitor" the agricultural practices and forest activities of their families and neighbors. With fines and, in a few cases, imprisonment (which stopped when one man died in prison after being incarcerated for taking timber from the forest) having limited success, the project incorporated a coercive element into its plans.

Attempts to protect some of the remaining forests by creating a national park, however, brought us directly up against the villagers. For the people of Madagascar, our preservation efforts were obstacles to their use of their own natural resources. They use forest products such as thatch for the construction of houses, as food, and as medicines, and of course they clear the forests for crop land.

Therefore we went around to each of the small villages in the area and explained to the villagers that we wanted to help them preserve their wildlife *and would be willing to make an exchange for their cooperation with the Department of Water and Forestry* (Wright 1990:452, emphasis added).

Thus, when the National Park was established, use of the forest was prohibited. As such, further shifting cultivation of forested land was and remains prohibited, along with collecting fuel wood, fish, medicinal plants, hunting, or foraging. Only researchers, scientists, and people purchasing a permit are permitted to enter the forest. At the time of my fieldwork, the cost of a permit to enter the forest was approximately \$15 -- clearly beyond the purchasing ability of a local resident who might make as little as 30 cents a day. What to a forest farmer was his or her ancestral land, to be used when needed or to be passed to one's children, is now land that he or she can no longer even walk upon, no

matter how many decades one has lived in the shade of the forest's trees. But a tourist or a "researcher" like myself can arrive from Antananarivo or Andafy, that mythical land where all the white people come from, and spend a day in the forest enjoying its pristine beauty, or a year there earning a living or degree.

The Ranomafana National Park Project

The objective of the Ranomafana National Park Project (RNPP) is

to preserve the biological diversity and ecosystems of the park through a program linking conservation of the core park area with improved standards of living and income alternatives within the surrounding peripheral zone³ (RNPP 1994:2).

The project was intended to provide administrative and technical support during the early stages of the park, in order to ensure its long-term success.

The objective of this project is to help preserve the biological diversity and ecosystems of the newly created Ranomafana National Park through an integrated program linking conservation of the core park area with

³ The "peripheral zone" has proven to be an elastic concept in the minds of park administration. Initially, it was to include any village or community within five kilometers of the Park boundaries. During my stay, Park administrators told me that the peripheral zone would be reduced to three kilometers, because this was shown to be the zone which most impacted the forests in the region, while at the same time, I was informed by one senior project administrator that the peripheral zone of the park had been extended to include all regions in the southeast to ensure that any research undertaken complied with the objectives of the project (Director of RNPP Antananarivo Office, personal communication, January 1995). This view was upheld by other project administrators, as discussed in Appendix II. When residents of Ranotsara sought project assistance for health and agricultural projects, they were sometimes told that they no longer resided in the peripheral zone, and therefore, were ineligible for such assistance, while surveillance of their farming activities continued. Residents were not at all clear on whether or not they were "within" the peripheral zone, nor was I, despite my numerous questions in this regard. Indeed, the peripheral zone was at any time from three to twenty-five kilometers from the Park boundaries, depending upon the objectives of the project.

sustained development within a surrounding buffer zone. The project seeks to: (1) prevent further degradation of natural resources through alternatives to slash and burn agriculture, (2) increase agricultural and forest productivity, (3) strengthen Malagasy institutions and technical and research capacity, and (4) study and analyze the area's rich biology (USAID n/d:8).

The park is nationally supervised through the auspices of the World Bank and USAID-funded *Association Nationale pour la Gestion d'Aires Protégées* (ANGAP) which, from 1990 to 1995, was responsible for implementing the national plan for biodiversity protection and training, and for coordinating the peripheral zone development activities. From 1995 to the present, it has taken the lead in managing the park itself, as well as overseeing the continued operations of the project.

The project was organized into two phases. Phase I (1990-1993) was a planning and design phase, in which comprehensive baseline socioeconomic and biological data were to have been collected, the park boundaries established and demarcated, the infrastructure developed, and the peripheral zone development activities implemented. Twenty-six villages were targeted as "pilot villages" to participate in conservation and development activities and receive strategic and financial assistance. Phase II (1994-1996) was intended to "build on the research, data collected, and lessons learned during the first phase of the project...successful on-going activities will be continued in the original pilot villages while some project activities may extend beyond the 5km peripheral zone to provide a regional perspective and approach" (RNPP 1994:i).

A central tenet held in the creation of the park is that it does not exist in a vacuum. People living in the peripheral zone are integral parts of the ecosystem, and it is recognized that biological diversity of the core area can be preserved only if local residents benefit from and actively participate in the management of area resources. In order to progress towards the

project goal of conservation of biological diversity and ecosystems of Ranomafana National Park, the objective of the RNPP during Phase II is:

To diminish human pressures on the protected area through the introduction of sustainable agricultural systems, alternative income sources, and the sound management of natural resources of local communities.

Means to the objective include the implementation of an integrated conservation and development project linking sustainable management and utilization of natural resources with increased socio-economic levels of residents in the peripheral zone (RNPP 1994:ii, emphasis in the original).

Project activities included increasing the productivity of staple and market crops, facilitating sustainable utilization of forest products, initiating alternative means of income generation, developing non-consumptive alternatives to forest use (particularly eco-tourism), and developing a protected area infrastructure.

The central theme in the RNPP will be the linkage of forest and natural resources to improved socio-economic conditions. By establishing this linkage through project activities, it is anticipated that local residents will have an increased awareness of the value of natural resources, that local residents will perceive empowerment over the management of area resources, that they will gain incentives for conservation of the resource and the project goal can be achieved (RNPP 1994:ii).

The Project seeks to transform the economic structure of the community from subsistence hillside farming to a free market economy, with a heavy emphasis on wet-rice paddy production, eco-tourism, and international marketing of renewable resources. In so doing, it adopts a theoretical position of participatory, sustainable development. How villagers were to be integrated into the Project remained problematic. Nevertheless, integration was initially sought through the (loosely-defined) participation of the twenty-six original "pilot villages," one of which was Ranotsara.

...we went around to each of the small villages in the area and explained to the villagers that we wanted to help them preserve their wildlife and would be willing to make an exchange for their cooperation with the Department of Water and Forestry. Their responses revealed just how low their levels of public health actually were. Above all, they wanted access to medicines and to hospitals; they had no medical facilities at all, but they wanted their people to be healthy (Wright 1990:452,453).

The villagers of Ranotsara well remember the 1986 visit of the Principal Investigator of the Project. "She came here with a notebook and she was very friendly," Faly, a village leader recalled, "She told us we could no longer go into the forest or burn *tavy*. She said if we stayed out of the forest, they would help us. She asked us what we needed, and we told her there was much sickness, we needed doctors and medicines. And we told her our school needed supplies, and if we did not burn *tavy*, we needed chemical inputs and fertilizers for the *tanim-bary*, and jobs for people who do not have *tanim-bary*. She wrote everything down, and then she drank some *toaka* with us, and she left. We never saw her again, but after that, some doctors came to see how sick we were."

Faly's wife, Nirina, picked up the conversation at this point. She was very excited and, as often with her, laughing so hard she could hardly keep from coughing and hacking. "Yes, the doctors came, and they all had plates with them. They were very nice plates, like the white ones you have," she said, laughing, hacking, and pointing to me, as she referred to my white enamel covered tin plates, "we thought they were very nice *vazahas*, to give everyone these plates, we thought at first they were like the missionaries, to give us such a nice gift. And every family got enough plates for each of their children. But then they told us what they wanted us to do with them!!!" Nirina and all present began to

laugh hysterically at the memory of a team of public health specialists who distributed plates to be used to collect fecal samples of children in order to measure parasitological loads.

We began by conducting a survey of the villagers in order to determine exactly what their health needs were; the results painted a grim picture indeed. Water in the villages contains all manner of waterborne diseases. Fifty percent of the people had malaria during the cold season when you couldn't even find a mosquito. Infant mortality is extremely high, and half of the children are malnourished; 97 percent of the children had worms of some sort. Sanitation levels are practically nonexistent (Wright 1990:453).

So we are implementing alternative agricultural practices that allow rice paddies and forests to coexist; we are educating the villagers about basic sanitation and health care; we are encouraging ecotourism as a source of additional income and, therefore, as a preservation incentive; and we are exchanging ideas with the villages and integrating their techniques, knowledge and perspectives into our problem-solving approaches (Wright 1990:453).

In following chapters, I return to further discussions and descriptions of the Ranomana National Park Project, and I discuss the realities of life and death in Ranotsara, as contrasted to the public image conjured by the Principal Investigator and other project planners, who contend that conservation of the forest is linked to improved health and well-being of forest residents. The actual benefits residents have received from the project, in exchange for relinquishing rights to the forest land, are discussed in terms of the health care they did and did not receive, their changing economic status, and how such changing economics shaped their health and health care.

As previously mentioned, however, the relationship between access to forest medicines and the changing forest environment, cannot be viewed solely as a relationship between village residents and the Park Project. The national park is very central to the research setting, and integral to the relationship between access to medicines and the

changing forest relationship. Moreover, the presence of the expatriate and national elite community in their roles as project managers and staff, provide a significant and provocative social context in which to understand contemporary social change in Ranotsara. Nonetheless, they represent physical and social components of a cultural complexity that includes multiple and competing interests within and beyond the village, extending to the national capital of Antananarivo, and the international comforts of the World Bank.

While these places and players shape the transforming history of the forests of Ranotsara, and the health and medical spectrum of its people, how national and international processes affect local lives is not experienced by all villagers evenly. As I show in Chapter Four, the village is divided by two distinct lineages, with ancestry having more to do with access to, and use of, resources, than does ethnicity. Moreover, the recent economic changes associated with agricultural liberalization, structural adjustment, and the penetration of conservation and development ideology, has further divided the village into a minority of land-owners (or controllers) and a majority of land laborers.

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Chapter 3

NO OTHER PLACE ON EARTH: THE HISTORICAL CONTEXT OF ENVIRONMENTAL CHANGE IN MADAGASCAR

I once described Madagascar as looking like a badly presented omelette, lying in the Indian Ocean off Africa's eastern flank, from which it was wrenched millions of years ago. Like all the best omelettes, well or badly presented, it is stuffed with goodies. The fourth largest island in the world, ninety per cent of its flora and fauna is found nowhere else. Africa is home to one species of pot-bellied baobab tree, Madagascar boasts seven. Madagascar is home to two-thirds of all the world's chameleons, from ones the size of a matchstick to ones almost as long as your arm. And so it goes on, until you become bewildered by the rich biological bounty of the island. It is a treasure trove and, if the mysterious forests are left intact and explored carefully, new and astonishing species are still to be found. Inhabited by wonderful, friendly people, it is a beautiful country, stretching its languid thousand-mile length in blue waters teeming with fish and multicoloured coral reefs. Its forests encompass everything from thick tropical to montane, to dry deciduous forest, to spiny forest as prickly as a hedgehog, and to pygmy forests only six inches high. It has lemurs as big as a four-year-old child and others that are small enough to fit into a coffee cup. It has woodlice the size of golf balls and moths the size of Regency fans. When you go on an expedition such as ours, it behooves you to keep your objectives sternly in mind, lest you be distracted and led astray by the fascinations that envelop you (Durrell 1992:5).

As this colorful – and blandly typical – introductory paragraph to a popular travel book suggests, the island of Madagascar is known more for its biodiversity of flora and fauna than for its nearly fifteen million men, women, and children who live and work amidst this biodiversity. But despite its abundance of natural resources, attracting hoards

of experts, consultants, tourists, and photographers, Madagascar remains one of the poorest countries in the world, with a per capita income of approximately \$235 in 1995, having fallen forty percent since the mid-seventies (World Bank 1996). The World Bank (1996:5) estimates that 74 percent of the population lives below the poverty line, and among these poor, 92 percent live in rural areas. UNICEF (1992) indicates that Madagascar is among the fifteen poorest nations in the world, with the people identified as Tanala, who live in the southeastern rainforest region where this study takes place, having the lowest average rural income in the country.

Contact with international markets has characterized Madagascar since its founding by humans. The island was first settled by Indonesian seafarers and East Africans probably around 600AD (Verin 1986). Its strategic location in the Indian Ocean attracted the attention of Portuguese, Arab, Asian, British, and French traders. Throughout its history of human habitation and economic development, it has been characterized by international trade and agricultural production. While its geographic beauty has always been among its virtues noted by foreign explorers, traders, and missionaries, in the last decade the island's geography and natural resources have gained such international stature that the environment is regarded as a "global" resource meriting management by the world's economic powers.

In this chapter, I discuss how Madagascar has come to be of such global concern. In order to understand contemporary issues regarding the "ancestral" lands of the forest, it is important to understand how people came to live in the forest in the first place and how lands became cast as ancestral. Thus, I begin by showing how the pre-colonial autocracy and colonial government shaped land and resource use through social policies including

forced labor, taxation, relocation, conservation, and development. This period also saw the rapid transformation of ethnic identities, and the introduction of Christianity and Christian concepts of healing, processes which are discussed in Chapters Four and Five. The combined processes of economic change, migration, and changing social identities, had profound influences on agricultural practices, health status and health care, and how one lived in and near the forest. This discussion illuminates how concepts of "traditional" land tenure regimes, as I will show for "traditional" medicine, and "traditional" cultural identities have been anything but "traditional." Moreover, it shows how the most severe environmental degradation in Madagascar, attributed to "Tanala" farming methods, is actually more closely related to Madagascar's urban industrialization.

The Rise of a Pre-colonial Autocracy

Madagascar's biological isolation has never been matched with a comparable social isolation. Indeed, its strategic position in the Indian Ocean made it a popular post for international trade in not only spices dating from the sixteenth century, but from the eighteenth to the nineteenth centuries, guns, ammunition and slaves were commodities to be traded with Europeans and mainland Africans. The European expansion of economic trade in the Indian Ocean, dominated by a thriving slave trade between the Mascarene Islands and Madagascar, resulted in social and political changes in the rural interior as people were displaced, local economies unbalanced, and people impoverished. While the effects of this trade were uneven throughout the island, the economic benefits reaching the interior contributed to the rise of a pre-colonial autocracy which shaped concepts of ethnic identity, radically altered gender relations, led to illness, malnutrition and death among

large sectors of the population, and brought with it migration, industrialization and changes in agricultural production that drastically and unevenly changed the island's ecology. These social forces were intensified with the imposition of colonial policies, and have been replicated in many ways by recent conservation and development initiatives.

The rise of the pre-colonial Merina autocracy dates to the late eighteenth century when the ruler of a petty kingdom, Iamboasalama, took the name Andrianampoinimerina, and seized control of the central highlands. While Andrianampoinimerina is revered throughout contemporary Madagascar as a benevolent and sagacious ruler who centralized power during the period of anarchy associated with the international slave trade, the history of his reign presents a very different portrait. He gained power by bribing his enemies' supporters, accusing wealthy landowners of sorcery and subsequently appropriating their property, and threatening those who did not support him with slavery, prison, or death. Slaves were essential to his power base because they were not only economically valuable, they were also necessary to construct the kingdom and develop a domestic infrastructure.

Andrianampoinimerina amassed slaves through three principal methods. First, he waged attacks against villages weakened by smallpox. Second, he established a penal code in which transgressors were sold into slavery. And third, he instituted taxes enabling him to seize not just the property of debtors, but the debtors themselves.¹ By increasing his slave exports, Andrianampoinimerina was able to gain sophisticated weaponry from the

¹ While all of these measures had been employed before Andrianampoinimerina, he escalated their practice to an unparalleled extreme.

British and French, which facilitated the expansion of his kingdom and helped him to establish an army (staffed through the forced military service of young men) (Bloch 1986).

Despite the effectiveness of these policies in bringing him to power, however, he was never able to rule more than one-third of the island, as the majority of the population forcefully resisted the policies and ideology he enforced. The resistance to the autocratic rule of the highland monarchy persists to this day, and underlies much of the resistance to contemporary social policies, some of which will be discussed in this and other chapters. Nonetheless, the reorganization of the land and people under Andrianampoinimerina, as well as his successors, has had lasting repercussions throughout the island, and has come to be internalized in multiple ways for all of Madagascar's people.

Land Reorganization

The rise of the Merina kingdom, having emerged in association with the international trade in humans, was made possible by warfare, taxation and a penal code. Warfare, directed to the forested areas of the east, increased the territory under control of Andrianampoinimerina, while taxation enlarged the royal coffers. Both had devastating effects on economies and social organizations throughout the island as people were pushed onto more marginal farming areas, women's agricultural and work responsibilities increased with the loss of men to slavery and military service, and the majority of people were dispossessed of their land. But it was the establishment of a legal code directed at land reorganization, and especially crucial to the expansion of the kingdom, that most decisively altered the Malagasy social system, as well as agricultural practices.

According to Linton (1933), in his study of the southeastern Tanala social structure, prior to the rise of the Merina autocracy individual ownership of land had been unnecessary.² Individual ownership, to the extent land could be so conceived, was vested in the village. While there were defined boundaries, these boundaries were usually natural ones, such as rivers or mountain ranges. Transgressing these boundaries by pasturing cattle or cutting *tavy* could lead to war. As such, the communal land tenure system served to limit forest exploitation, while maintaining land rights. Fallow land and virgin jungle, Linton maintained, were regarded as common property. Villagers were permitted to set traps and beehives, use timber, and gather forest products on such land.

Selling land outside the lineage was sanctioned only when a member of a lineage had been enslaved and money was needed for ransom. Even in this case, Linton pointed out, sale was usually regarded only as a pledge for a loan.³ The cultural restrictions governing use of the communal land thus served to preserve biological resources, rather than enable their exploitation.

² Whereas Linton was specifically referring to the period prior to colonization, a review of the land tenure laws as outlined by Berthier (1930), Compté (1963), and Thébaud (1951) suggests that the pattern of communal land holdings to which Linton refers had transformed during the early reigns of Andrianampoinimerina and Radama I (ca 1796-1828). It is likely, however, that the Tanala retained many of their customary practices pertaining to land tenure throughout the Merina reign (indeed, as will be discussed in this dissertation, resistance to land appropriation continues among the Tanala to this day).

³ Of course, Linton's description of land tenure was limited to the Tanala Menabe (a sub-group of the Tanala), so it cannot necessarily be extended to the whole of Madagascar, but it does provide a certain perspective on how land had been organized in the southeast, at least in one forest region.

By the turn of the eighteenth century, Andrianampoinimerina's rule changed many of these indigenous practices. He began by declaring himself the eminent proprietor of the earth (a concept later reaffirmed by all of his pre-colonial successors), in which the land was his alone (Berthier 1930).⁴ Having achieved the subjugation of most of the highlands, he rewarded those who had supported him with gifts of land and administrative positions, and he used land reorganization to extend his domain. Each of his subjects, Thébault (1951) reported, was given an area to maintain (but not own⁵), in exchange for cattle and money. Next, he divided the land into six states, or "tribes," over which he reigned.

Each "tribe" thus created, was proprietor of the soil which was consequently assigned to them, and these lands took the generic name of *tanim-pirenara*. The *tanim-pirenara* were shared among the diverse *fokonolona* [a line of descent arising from the same ancestor, whose tomb constitutes the symbolic property around which the group is united⁶]. To demarcate property limits and avoid future disputes, a border of stones (*orimbao*) was solemnly put into place around each *tanim-pirenara*. This done, within each "tribe" the *fokonolona* was provided with a portion of the land, which was shared

⁴ Verin (1990) reported that Andrianampoinimerina was not the first king to declare the earth his own, but he was certainly the most successful (pre-colonial) ruler in the effort.

⁵ Ownership was acquired in other ways as detailed subsequently.

⁶ What remains uncertain is when the *fokonolona* first appeared. Beaujard (1983) indicates that the *fokonolona* originated in the eastern Tanala regions in the seventeenth century, whereas Larson (1992) argues that it was the Merina king Andrianampoinimerina, who first instituted the *fokonolona* in order to diminish the power of the ruling *mpanjaka* in favor of a local control that was less threatening to Merina expansion.

among the families of the tribe (Thébault 1951:210). A family did not necessarily have a life-interest in the land; the *fokonolona* remained the acting proprietor and could reclaim the land at any time, while Andrianampoinimerina could reclaim the land from the *fokonolona* at any time.

To facilitate his economic goals, the new king declared that the rice fields would be shared by the various *fokonolona*, by dividing them into what were called *hetra*. The *hetra* was the collective property of the tribe or the *fokonolona*, who were responsible for collecting individual taxes on each lot (indeed, the word *hetra* has come to mean taxes in the contemporary Malagasy language). While an individual did not retain legal possession of the *hetra* rice fields, he could transfer the rights to this land to his children through succession, inheritance, or purchase. If a member of a *fokonolona* did not have a *hetra*, the *hetra* could be reclaimed and given to them. If someone died intestate, or left the tribe, the *hetra* could be reclaimed and redistributed among the tribe. Property other than rice fields was also divided similarly, and land for building houses or growing other crops was divided into *zara-tany* (literally, a division of land).

To acquire *hetra*, all subjects of the new kingdom were limited to four modes of transmission. Thébault (1951) indicated that these four modes of transmission or acquisition of the newly created private property, included *tany vidina* (land acquired by purchase), *tanin-drazana* (patrimonial land which was transmitted by succession or inheritance), *fehivava* (land given in payment of a debt), and *lolombintany* (land granted by a royal [Andriana] chief or sovereign, for services rendered). This last form of land transfer became a common form of payment to soldiers whose service attracted the attention of the king, or to other loyal supporters of his new society. Such *lolombintany*

lands, in which title was complete and without restrictions, was not subject to the *fokonolona* management, or to taxes. Moreover, the *lolombintany* was the only class of land which constituted legal possession (Thébault 1951). All other land holdings remained limited to rights to use.

Berthier (1930) alleged that these *lolombintany* lands constituted the first form of private property. The emergence of private property was not, however, a well-defined turn of events. Rather, it was a process which began before Andrianampoinimerina's reign, and outside the highlands. Certainly, the seizure of land by sixteenth and seventeenth century rulers (such as that practiced by the Antemoro and the Sakalava who forced their subjects to labor the land as serfs) constituted a form of privatizing the commons for their own benefit. Also, the exchange of land for slave ransom suggested that lineages were involuntarily relinquishing their land to others. Dubois (1938) had further pointed out that the very annexing of land and requiring people to remain stationary was, in effect, a privatization of land that had formerly been communal. The *lolombintany*, however, did establish a very definitive title to land that contributed to the growing class formation, in which certain groups were privileged over others in their access to land and resources, a process discussed in Chapter Three.

Industrialization and Environmental Change

To enforce tax collection and ensure the rapid appropriation of labor, the king prohibited geographical mobility, requiring everyone to live among what he popularized as "ancestral lands," (discussed in the following chapter) and he regulated the sale of *hetra* so that they could not pass outside the "ancestral group" or to those people now regarded as

slaves (Campbell 1985; Compte 1963; Larson 1992). Although most people resisted permanent occupation of lands, and migratory lifestyles associated with shifting cultivation continued to be covertly practiced throughout the island, for those who did willingly or unwillingly settle in stationary villages, their acquiescence to state policy contributed to agricultural decline. By forcing permanent land occupation, the fallow period necessary to restore soil nutrients was shortened, and the damaging effects of shifting cultivation intensified.

By fixing people in permanent settlements, however, the Merina state was faced with the problem of ensuring that those who lived amongst the island's resources could not claim control over them. To limit local control over resources, it was necessary for the state to assert proprietorship. This was done through *terres lavavolo*. Land which was not allocated as *hetra*, or otherwise transferred as outlined above, was classified as *terres lavavolo*, or vacant land (Berthier 1930). The *lavavolo* lands, which included the forests, swamps, rivers, lakes, grasslands, and any other unoccupied land, belonged to the king. Even the earth underneath occupied land was declared property of the king – thus Andrianampoinimerina bestowed upon himself mining rights. Because cultivation of land could imply occupation, Andrianampoinimerina banned the planting of trees on hillside land in order to assure that wealthy individuals did not accumulate land by developing it (Larson 1992). In so doing, indigenous methods of forest renewal were curtailed.

While Berthier (1930) maintained that the *fokonolona* continued to enjoy the privilege of using the forests and pastures, Tacchi (1892) indicated that one of the first things Andrianampoinimerina did upon his rise to power was to promulgate strict laws concerning the forest. These laws prohibited anyone from taking any firewood, upon the

penalty of one dollar and one bullock.⁷ The discrepancy between Berthier's argument that communal use of the forests was permitted, and Tacchi's assertion that it was strictly forbidden, is probably explained by regional and temporal differences, in which certain customary practices continued without sanction in some regions or during some periods, but were more strictly enforced in others, particularly if the forest area was of value to the monarchy.

The value of the forests to the monarchy was considerable. Several authors have pointed to the magnitude of forest destruction during the development of the Merina empire (e.g., Boiteau 1982; Verin 1990; Tacchi 1892). A massive industrialization crusade was initiated to build up the empire and promote international trade. Consequently, roads and railways from Antananarivo to the eastern coast were constructed and a massive hydraulics system was engineered. These projects, built through *corvée* labor, destroyed enormous expanses of forests, particularly from the capitol city of Antananarivo in the central highlands, to the eastern port of Tamatave on the coast. Indeed, Bloch (1989), Hardenbergh (1992), and Verin (1989), have suggested that the Merina expansion and development of waterworks caused total deforestation throughout much of the eastern forests in this region.⁸

⁷ The only exception to this rule, Tacchi wrote, was when a woman gave birth to a child, because it was the custom to place the mother and child beside a very large fire.

⁸ To this day, the long-term effects of this destruction are readily apparent from the eroded hillsides which flank the roads from the capitol to the eastern coasts. The dry and fissured earth is commonly photographed to show the effects of deforestation from *tavy*, with no reference ever made to the role the roadways (now paved highways) played in creating this damaged landscape.

Nineteenth Century Merina Rule and Colonial Gestation

The last half of the eighteenth century was a period of rapid social transformation differentially affecting the multitude of the island's population. The mechanisms employed by Malagasy rulers to advance this transformation included labor appropriation, land reorganization, economic restructuring, taxation, and social reorganization. The European demand for slaves in the Mascarene Islands led to an increase in warfare (aimed at taking captives who could be commodified); in turn, warfare destroyed vast tracts of forested lands, as well as required great quantities of wood charcoal to fuel an associated iron industry east of Anatananarivo. Profits from these slave raids were then used to facilitate political ambitions rather than economic development. A wealthy elite thus emerged, along with an impoverished majority. These mechanisms of economic and political restructuring by the Malagasy Merina were echoed by foreign powers in the nineteenth century, as they united with the Merina kingdom in an effort to lay the foundation for colonial rule, a process which I detail below.

Andrianampoinimerina died in 1810, and his son Radama succeeded him as King of the (newly created) Merina. Having selected a successor who would carry on the task of "uniting" the island under Merina imperialism, Andrianampoinimerina's hegemonic legacy continued. Forced military service was expanded, and made even more oppressive as food was withheld from soldiers (expected to supply their own provisions). Passing through malaria zones, and weakened from hunger, many died; those who deserted were burned alive.

This period of early Merina history was also marked by increasing hardships in manual labor. Verin (1992 personal communication) suggests that manual labor became much more degrading under Radama's rule, as it became more sharply contrasted to the privileged professions of an educated elite. Antemoro scribes were brought to the palace to educate a select few in reading and writing, in order to strengthen the administrative component of the state, and to facilitate international exchange. Radama also significantly increased slave and cattle raids toward the south and the east, thus crippling the social structures of non-Merina communities and attracting the foreign interests he sought. To defend against these cattle raids, those living in the southeastern forests concealed their cattle in the forests, rather than penning them where they were openly visible to cattle thieves.

The British assumed control of Mauritius as a plantation colony in 1814 (while the French retained control of the neighboring island of Reunion), and they wanted exclusive control of the trade route in the Indian Ocean. Consequently, it was judicious for them to support Radama's territorial expansion in order to secure Madagascar's backing of this ambition.

This alliance was consummated in 1817 by the signing of a treaty between the British Monarchy and Radama, who, through this act, was proclaimed by the British as the King of Madagascar. While Andrianampoinimerina's monarchy extended to many regions of the highlands and the migration which ensued contributed to his ever-widening reach, he was not recognized as a leader by most of the island's population, nor was Radama viewed as such by most of the island's populace. But in so recognizing the Merina king as the island monarch, Britain was able to legitimate its political and economic claims to the

island's resources. These claims were instituted through the treaty, which granted Britain free trade status (without duties), particularly essential to the cattle and rice exports needed for the development of Mauritius. Exporting slaves was prohibited, but owning them was not. This prohibition effectively limited the ability of Radama's rivals to amass sufficient wealth to challenge him, while enabling his supporters to maintain their wealth through the appropriation of labor. The loss to Radama of the profits from slave exports was compensated by the British.

The alliance of the British with Radama also brought on an acceleration in environmental destruction. The introduction of literacy enabled Radama to disseminate his political communiqués by way of the written word. With the assistance of missionaries (whose presence was stipulated by the 1817 treaty), he established a printing press, necessitating extensive forest clearing in order to manufacture paper. In addition, the British persuaded Radama to form special bands of woodcutters, blacksmiths, and carpenters to advance the expansion of the new government and its officers; the labor for these endeavors was obtained through forced government service (Campbell 1985).

The treaty further authorized *soldats colons* [colonial soldiers] to increase export crops in Madagascar, which were needed in the Mascarenes, as well as international trade. Having military license to enforce this policy, subsistence farming in forested areas shifted to single-crop agriculture. Farmers were forced to burn forested areas and plant sugar cane, tobacco, wheat, corn, oats, rice, and even mulberry bushes for feeding silk worms. Fallow fields were put into production, rather than left to restore the soil's nutrients. Such shifts to commodity production exacerbate environmental degradation because subsidiary crops, which prevent erosion on steep slopes, restore soil fertility, and shade the soil, are

no longer cultivated (Collins 1991). It is likely, therefore, that indigenous farming methods which may have maintained biodiversity and preserved the forests through *tavy* production were replaced with non-restorative agricultural techniques. Fertilizers were also introduced, which provided increased short-term production at the long-term loss of soil fertility.

In order to ensure economic development, the British insisted that Radama develop an adequate communication and transportation system (Campbell 1985). Using *corvee* labor, Radama had vast tracts of forests from the highlands to the coasts cleared for roads and canals. Precious woods from the northwest were felled and exported, leading to the virtual clearing of all the forests of the northwest coastal areas by the end of the century (Feeley-Harnik 1992). Rubber industries were established in the forests, also contributing to rapid exhaustion of forest cover.

The industrialization of Madagascar was dominated by the exploitation of male *corvee* labor (later replaced with wage labor), but the desires of the kingdom and the Europeans to intensify production led to the conscription of women and children (Campbell 1985). Their own, now limited, lands were abandoned, as they were forced to devote their energies into production for the state. Women were also actively recruited for the production of pottery (fueled by rice husks) and basket and mat weaving (Campbell 1985), although their educations were limited to low-paying sewing skills and domestic proficiency.

As populations moved into the steeper and less fertile forested areas of the southeast to avoid *corvee* labor, slavery, and cattle theft, and as the majority of men and many women who were unable to escape the reach of the state were conscripted into

forced labor, subsistence agricultural and pastoral production declined in the southeastern forests, leading to famine. The Merina state, meanwhile, accelerated agricultural and pastoral production in these same forests for its own profits. For example, in 1822, missionaries introduced a tanning industry to Madagascar, requiring extensive pasturage of cattle which further advanced the destruction of the forests in the region extending from the highlands to the southeast, as trees were burned to encourage the new growth on which the cattle fed. Moreover, the bark from *lalona* and peach trees was used as the chief agent for manufacturing leather, which was exported to Europe. Cattle were also needed to supply Europeans with canned meat necessary to feed their armies.

In 1828, missionaries introduced soap making, in which the ashes of shrubs were a primary ingredient. Production of iron smelting, gunpowder, and military fortifications were increased during Radama's reign, all requiring wood fuel (most of this production extended eastward, from Antananarivo in the highlands to Tamatave on the coast). The missionaries also introduced brick making, fueled by peat and forest wood (which was to revolutionize the architecture of Antananarivo), as well as the extraction of limestone and sulfur (Sibree 1898). The ecological destruction of this industrialization was unprecedented, and irreversibly altered the productive capacity of the land. While famine devastated those living in the forests, the Merina monarchy and the European economy prospered from the land's resources.

Sibree (1898) has discussed how the London Missionary Society, whose arrival was sanctioned through the 1817 Treaty, was more an industrial force than a spiritual one, and representatives of the LMS, such as James Cameron, were brought to the kingdom chiefly for their ability to launch the industrial reformation of Madagascar's economy. In

addition to establishing iron forges, soap refineries, mines, brick-making factories, tanneries, and cash-crop plantations throughout the island, the churches were used as training institutions for masons, carpenters, tilers, and glaziers; only men were taught these trades, which were to provide them a particularly lucrative career, and create a nearly impermeable class of skilled workers.⁹

Increasingly resentful of the military conscription that forced men to leave their homes and women to assume their agricultural tasks, women began to organize (Larson 1992). For example, in 1822, Radama, having already abandoned the traditional *lamba* for European clothing, cut his long plaited hair short and ordered his soldiers to do the same. This directive to relinquish such a personal freedom and cultural pride, prompted nearly 4,000 women to protest outside the capitol of Antananarivo. In response, Radama selected five of their leaders, ordered their heads shaved, and then had them publicly executed. The remaining women were surrounded by soldiers and starved for several days, then freed to return home.

This public humiliation of those who openly resisted the Merina monarchy, induced others to resist more covertly. The primary form of covert resistance was to relocate to deeply forested lands, particularly the southeastern forests, where the new laws of the Merina kingdom were unenforceable. Such relocation, however, had serious costs. Malaria was far more prevalent, and, as stated previously, the lands were less fertile. But

⁹ But to have sufficient unskilled labor to work in these new industries, without cutting into the profits of the state, the missionaries used, and advocated the use of, large numbers of slaves. Their homes, schools, and churches were all built from slave labor (Campbell 1985). Indeed, they did not support the abolition of slavery until late in the nineteenth century (Campbell 1985). It was not until they were safely ensconced in the political economy of Madagascar that the missionaries began proselytizing Christianity.

even the minimal existence afforded by living in these steep and densely forested terrains provided many with a greater chance at survival than they would have under servitude to Radama's kingdom.

The rapid industrialization of Madagascar was maintained after Radama's death in 1828, with the ascension of his widow, Ranaivalona, to the throne. While Ranaivalona is noted for her tyranny against Christians and fervent anti-foreigner policies, Campbell (1985:194) suggests that her reputation is incompatible with the historical record, describing her reign as a "drive to industrialize," in which large-scale training of an industrial workforce was launched, and environmental destruction continued.

Laying the Foundation for Colonial Rule

The French, alarmed at the growing alliance of the British with the Merina monarchy, sought to regain some of their former influence in Madagascar. As such, during Ranaivalona's reign, the French Navy from Reunion began to press "shadowy claims" for territory in the east (Bloch 1986:18). Ranaivalona sensed the unstable position that jeopardized her monarchy by the presence of the Europeans. In addition, the missionaries were gaining too much power of their own, particularly as Christianity was gathering support among those who most resented the domination of the monarchy. Consequently, although she recognized the necessity of maintaining sufficient trade with the foreign powers to facilitate the industrial and economic expansion of her empire, she nonetheless needed to disempower the Europeans. To do so, she ordered all the missionaries out of the country, save for three (Cameron, Griffiths, and Jones) whose engineering skills she required. These missionaries directed industries in which Malagasy

were required to deliver fuelwood for soapmaking and nitre and cattle fat for gunpowder (Campbell 1985). While Campbell (citing Raombana 1853-54) notes that the Malagasy contributors did not receive any benefit from the manufacture of these products, they were fined and flogged if they failed to deliver the resources. Moreover, the missionaries established elaborate "banking" schemes in which loans were made to those so impoverished, with usurious interest rates.

Ranavalona encouraged other European industrialists, not aligned with the church (such as Jean Laborde), to come to Madagascar and set up industries. The missionaries supported her in this endeavor. Campbell (1985:138) illustrates the allure of Madagascar to foreign developers through this advertisement in a South African newspaper:

Thousands and tens of thousands of acres of good land, contiguous to streams and rivers, remain yet unappropriated, uncultivated, and of course unproductive; but which, if required, could be easily turned to account. Between Ankova (i.e., Imerina) and the Sakalava country are also numerous herds of wild cattle. And Madagascar has not beasts of prey to alarm the fearful settler. (South African Commerical Gazette, 6 November 1830)¹⁰

Rather than suspend foreign trade, Ranavalona increased it. Along with *corvee* labor and military aggression, international trade was a cornerstone to her administration (Campbell 1985). The monopoly of the Merina on foreign trade during her reign affected rural agriculturalists severely, as they received lower prices for their produce, but paid higher prices for imported goods (such as fertilizers) (Campbell 1985).

Appropriation of land and property was simplified during Ranavalona's rule, as recourse was virtually unenforceable. For example, the Rev. David Griffiths, one of the

¹⁰ Unfortunately, he did not report to what extent such solicitations brought foreign investment to Madagascar.

few missionaries allowed to remain following the deportation of the London Missionary Society, indicated (in Cousins 1895) that up to one million people had been destroyed and reduced to slavery during the queen's reign. Her methods of enslavement and impoverishment included confiscating the property of any person who brought a civil suit against someone, and failed to prove their claim because they had not bribed the judges. The unsuccessful plaintiffs were then sold in the slave markets.

Moreover, soldiers and civilians could be called to duty on a moment's notice, regardless of their agricultural obligations. In a letter to his wife, the Rev. Griffiths wrote:

All the people of the inland provinces, and on the eastern coast from Vohimarina to Fort Dauphin, have not a week that they can call their own to cultivate their ground or provide for their families, but are required to engage in some government service or other, as tilling the ground, felling timber, making and carrying charcoal, collecting wax and gum copal, etc. and carrying hides from the interior to Tamatave. All the tailors have their service exacted in the same manner by the Government without any remuneration. The people often remark, with feelings of stoical indifference, 'We shall not teach our children *anything*, for the more they know, the harder will be their service' (Griffiths 1840 in Cousins 1895:344, emphasis in original).

Toward the end of her reign, Ranavalona began easing up on her anti-European stance as she began to fear the possibility of an alliance between the British and French, whose combined power could easily crush her government (Bloch 1986). In addition, she had become dependent on their military, industrial, and administrative resources (which, as Bloch [1986] pointed out, was no accident, but was instead the intended aim of the Europeans). Finally, the queen's prime ministers were gaining control over her government through their own influence and wealth. Consequently, resurrecting the formal alliance between the Merina monarchy and the European governments was

advantageous, if not essential, to Ranavalona's political stability. Such a move was desired by much of the populace as well, who viewed European authority as preferable to the cruelty of the queen's command. The French seized upon the instability and social inequalities associated with the Merina monarchy by appealing to the population and alleging that they would represent the interests of rural and coastal Malagasy whose non-Merina identity rendered them, the majority, socially marginal. At the same time, the education and bilingual language skills of the highland elite continued to position them advantageously for key administrative positions in the new colonial state.

Ranavalona's reign (and with it, the *de facto* dominion of the Merina empire) thus came to an end through many of the same mechanisms of persuasion, intimidation, and military and economic strength that brought Andrianampoinimerina to power less than half a century earlier. As Andrianampoinimerina gained strength by appealing to the tyranny of others, the Europeans appealed to the fears and poverty of the masses. As Andrianampoinimerina gained power through conquest, or threat of conquest, so did the Europeans intimidate the queen with their military strength encircling the island. And as Andrianampoinimerina gained power through the economic prosperity of his slave trade, so did the Europeans gain an advantage over the Merina monarchy by their own economic supremacy.

By the second half of the nineteenth century, the Europeans were to position themselves in the Merina kingdom and Malagasy society so firmly that their colonial designs were effortlessly installed. Their policies of land and labor appropriation differed very little from that of the Merina, but through their military and economic strength, and

assisted by the infrastructure that Radama and Ranavalona had begun to set into place, they were able to seize the land and its resources on an even larger scale.

Colonial Land and Labor Policies

The colonial era, from 1895 to 1960, was marked by forced labor, land appropriation, taxation, the introduction of cash crops, forest conservation, and the development of a medical infrastructure.

Labor was controlled through laws (passed in 1897, 1902, and 1907) requiring all adult men, ages 16 to 60, to work 50 days a year for the colonial government, without pay, and to pay a head tax of 2.50 FF (Hanson 1997).

In general, throughout the first three decades of the 20th century, the French colonial administration ransacked the eastern forests for cash and labor. These revenues, rather than being returned to the region via meaningful development projects, were employed either to pay off the rather large debt and fines the pre-colonial state had incurred to France (Rabearimanana 1985:317), or invested in the *colons* (Fremigacci 1986:327). Taxes on the common people proved inordinately high. For example, taken together, the various forms of taxes owed to the administration by the average household in 1918 reached 26.60FF (ibid: 303). Simply unable to pay this amount, individuals were forced to take out loans and/or labor for the administration (Hanson 1997:67,68).

Taxation, however, required a stationary population. Jarosz (1993:373) indicates that *tavy* was incompatible with colonial objectives because swidden rice farmers tended to live in scattered, extended family groups which moved frequently. Tax collection and labor appropriation (for forced labor parties) were difficult to carry out in communities practicing *tavy*. Consequently, laws prohibiting the burning of forest cover and regenerating growth were enacted in 1881 (by the Merina autocracy, toward the same ends), 1900, and 1902. In 1900, the *service forestier* was established, with authority to

grant forest concessions and enforce rules regulating use of forest resources. In 1913, the Governor General of the colonial state assumed authority over all forest concessions of 100 hectares or more, and in that same year, *tavy* was prohibited throughout the island and linked to the prohibition was the promotion of irrigated rice agriculture, which was considered more sustainable and intensive. By prohibiting *tavy*, the state not only sought to facilitate tax collection as people were fixed into stationary settlements, but they also wanted to protect forest resources for commodification by the state and European mining and timber concessions. The practice continued, however, particularly in the southeastern forests where swidden agriculture was the most efficient and productive way to farm such steep terrain. As such, in 1930 the Governor General was granted authority over all permits to use forest resources, and punishments, including fines and imprisonment, were established for transgressors. Hanson (1997:78) points out that these decrees were largely aimed at French concessionaires who exploited the “principle forest products” of ebony, wood for industrial use, charcoal, and bark for textiles and fibers. While the ban on *tavy* was directed toward the rural Malagasy farmer, the regulations regarding forest exploitation were intended to facilitate and regulate exploitation of the forest for European industrialists.

Another major feature of colonial forest policies came in 1928, when one million hectares of forests were divided into nine separate reserves and redefined as “protected” areas (Ramanantsoavina 1963 in Hanson 1997). In so doing, the prohibition of *tavy* was linked to the enclosure of forests for conservation purposes, at the same time that exploitation of these same forests was facilitated by laws regulating and sanctioning the use of the forest for industrial development. The southeastern forests were especially

productive for European industrialists as timber operations and coffee plantations were launched concurrently with the prohibition on *tavy*. It is no surprise, then, that *tavy* became, once again, a covert act. And, as during the reign of Andrianampoinimerina, *tavy* became a practice embedded not just in the symbolic realm of the ancestors, but came to represent resistance for those people whose economic livelihoods had been dependent upon shifting cultivation (see Hanson 1997 on *tavy* as a form of resistance).

Jarosz (1993) indicates that the colonial policy promoting irrigated agriculture in place of *tavy* failed because the regional variations of the island were not uniformly conducive to wet-rice irrigation. In those highland areas where suitable flat-lands made irrigated rice production feasible, the ban was effective, but in mountainous areas, such as the eastern coastal forests, enforcing the ban was impossible as farmers continued to practice *tavy* -- the only possible way to grow rice in those regions.

Jarosz (1993:374) further suggests that the failure of the ban on *tavy* was in part due to the resistance of farmers who interpreted the colonial policy in differing ways:

The colonial state's perspective on shifting cultivation emphasized the necessity of its prohibition as an economic goal to ensure rational forest management, which would ultimately increase state revenues and increase the abundance of local rice grown by other forms of sedentary agriculture. The economic objective was articulated in terms of forest conservation and the necessity of the ban. . . . Peasants interpreted the ban as a form of labor control compelling them to work for wages and buy rice, thus losing their independence. Moreover, the ban meant that the sacred space where the living engaged in dialogue with the ancestors was annihilated by colonial decree. Mass revolts and resistance, as well as scattered, individual acts of noncompliance, spoke directly to this annihilation and the divergent meanings of *tavy* to the Malagasy peasants and the state.

Resistance to the ban was more than pitting the right to subsistence over forest conservation; it embraced issues of power, labor control, and Malagasy identity. Not surprisingly, the French failed to eradicate the practice . . .

One additional reason the prohibition on *tavy* failed could be attributed to the hypocrisy many Malagasy felt was reflected in the policy. Jarosz (1993) points out that *tavy* was portrayed as environmentally destructive, while at the same time forest resources were viewed as resources of value to outsiders, a discourse she indicates resembles academic discourse on the subject:

Early academic accounts of shifting cultivation characterize it as unplanned, aimless, nomadic, unproductive, and uneconomical in the utilization of land and labor and destructive of the environment (Whittlesey 1937). The discourse of colonial conservation parallels the academic view. Writing about the forests of Madagascar in 1890, one observer on a missionary tour expressed "a hope that the present wholesale destruction of the forest by the natives may be soon effectually stopped by the Government, and that its valuable resources may be speedily utilized" (Baron 1890, 211 in Jarosz 1993:372).

Another major agricultural innovation coincided with the promotion of irrigated rice production and the prohibition against *tavy*, and that was the introduction of cash crops. In the southeastern forests, this production was primarily in coffee, but banana trees were also planted for export. Jarosz (1993:370,371) indicates that export production varied regionally, but that the introduction of coffee crops in the southeastern forests was especially destructive of the forest ecology:

According to Temple (1972), the soil erosion rates on coffee plots are nearly double those of subsistence plots, because broad expanses of bare soil under the coffee bushes are particularly vulnerable to violent storms during the rainy season. The state's emphasis on export production led to a pattern of uneven economic development and regional fragmentation (Isnard 1971; Hugon 1987) which created increasing production pressures and demands upon environmental resources.

The introduction of coffee cultivation also led to shortfalls in rice production. Razoharinoro-Randriamboavonjy (1971), Althabe (1982), and Rakotoarisoa and Richard (1987) have noted the tension between cash cropping and rainfed rice regimes in terms of claims on land and labor time. Due to its labor demands and attractive producer prices, coffee cultivation increased in popularity among European settlers and Malagasy farmers. As

rainfed fields were abandoned – the casualties of labor shortfalls, low producer prices, cyclones, and drought – food security in the eastern region was eroded.

In the 1930s and 1940s, coffee plantations, having been introduced in Madagascar in the 1920's, were expanded in the southeastern forests, and area *colons* [colonial officers] were granted free access to appropriate lands for such production (Hanson 1997). Hanson (1997:70,71) discusses how the introduction of cash-crop production, in association with the shift to irrigated rice production, affected the Tanala farmers of the southeastern Ranomafana region:

...beginning in the early 1900's, French authorities forced the Tanala to abandon their mountaintop homes and settle the valley spaces along the major roadways. The motivations behind these dislocations were diverse. However, in the Ranomafana region, the goal of the colonial administration was particularly clear. During the first decades of the twentieth century, then Governor General Marcel Olivier laid the fiscal basis for the development of coffee plantations in the region. Olivier understood that to secure the labor force needed for these plantations, he would first have to force the Tanala to settle the valley floors, and second, introduce irrigated rice culture to keep the population fed.

As the coffee trees matured, however, they became less productive. This decline in cash-crop production, accompanied by less investment in subsistence agriculture, contributed to rice-shortages and economic decline in the mid-1940's. The greater impoverishment colonial agricultural policies created in the southeastern forests led to this region being in the forefront of resistance. Thus, it is not surprising that in 1947, an indigenous resistance movement emerged from the eastern forested regions near Ifanadiana, a movement that was to become one of the most devastating of colonial rebellions. More than 100,000 Malagasy died in their ineffective efforts to gain independence from colonial rule, when Senegalese men were brought to Madagascar to

serve the French army and kill their African counterparts. Allen (1995:47) describes the colonial repression which followed as "one of the most bloody acts of repression in colonial history," and included execution, torture, starvation, and banishment into the desert, as among the tactics the colonial administration employed to suppress the insurrection. The post-rebellion period, lasting until 1956, included a complex propaganda campaign in which French sympathizers were repatriated, convicted conspirators were executed, and all news reporting the events was censored. Even Alfred Hitchcock was enlisted to produce a documentary fictionalizing the insurrection so that any future rebels would be dissuaded from similar agendas. The result of these responses was that the rebellion of 1947 was rapidly mythologized by both the colonial state and by the diverse Malagasy themselves.

In the southeastern forests of Madagascar, where the rebellion was the most violent and the suppression the most severe, the rebellion symbolizes the unity of the "people of the forest" in their defiance of foreign control over their land and livelihoods, and their victimization to these same policies and the oppression which ensued. At the same time, memories of the period conflict, revealing that social differences do indeed contribute to differing memories.

Masobe "Big Eyes" is a tall, spotted man, whose spots villagers insist, came from his having eaten a spotted chicken killed by his wife, Tody. Masobe, originally from an eastern coastal village, and Tody lived in Ranomafana from the late 1940's until the 1960's, where Masobe worked as a cook in the local hotel, and Tody, close to her home village of Ranotsara, farmed the *tavy* fields she had inherited from her family. After losing his job at

the hotel, Masobe and Tody moved to Ranotsara and raised their children. Thus it came to be that Masobe resided in his wife's village, a rather unorthodox move in this patrilocal society. After Tody died, Masobe remained in Ranotsara, while Tody's *tavy* fields passed to their son, Germain. Now an elderly widower who lives alone, Masobe became virtually landless, because he lacked the strength or the family to work his fields.

He describes the infamous year of 1947, when all of the eastern forests were colonial battlegrounds. "The men went to the deepest parts of the forest to watch the villages from a distance, to see if the soldiers had arrived. The French had brought Senegalese soldiers to the area to chase us into Ranomafana, where we could be guarded. Men were forced to work for the colonial government. Women were not always strong enough to go with us into the forest, and so they stayed in the village"

Nirina is in her late seventies or eighties; her grandfather was one of the founders of the village of Ranotsara, and her husband of fifty years, Faly, a local *mpanjaka*. She remembers this period well. "Masobe said women were not strong enough to go to the forest? What does he know! It was hardest on women because we had to do our own work *and* the men's work. We had to grow rice, and take it to the men. We had to also teach girls and boys work they did not do before." For example, she indicated that boys had to learn to cook, and girls had to learn to chop wood. "What can Masobe know of women's work!?" Nirina asked rhetorically.

Masobe, however, argued that men would come down at night to tend the crops, or they began cultivating in the forest. Both agreed that these years were hard on everybody, and the violence they witnessed left deep impressions on their hearts that

outsiders often fail to recognize when telling the farmers what, and how, and where, to grow their crops.

Thus, the forests of southeastern Madagascar, presently characterized by conservation and development discourse as representing an intact ecosystem threatened by the spread of *tavy* fires, whose only social context is regarded, at best, as rooted in poverty, poor technology, and high birth rates (e.g. Harrison 1992; Jolly 1987; Keck, Sharma and Feder 1994; Pryor 1990; World Bank 1994) or attributed to ethnic tradition, at worse (RNPP 1994) have, in fact, been farmed and protected by forest residents both acquiescing to, and resisting, state and international economic policies for the last two hundred years. That the forests have survived at all, is not due to the natural processes of a virgin ecosystem naturally and harmoniously flourishing beyond the reach of humans. The forests have, in fact, been home to humans who have variously preserved the forest cover for protection and concealment; been forced to burn it for production of cash crops first during the reign of Radama I, then during the mid-twentieth century under colonial decree; been forced to intensify production and limit fallow to pay taxes and crops to both Merina and colonial authorities; and been induced to increase shifting cultivation to offset the social and economic repercussions of forced labor. Many of these same policies have been reproduced by state and international policies since colonization.

Conservation and Development: Post-Colonial Land and Economic Reforms

In 1960 Madagascar gained sovereignty, but remained dependent upon France through its control of private enterprise and the post-colonial government (with many

French colonial administrators and advisors remaining in government posts). This period marked the First Republic of President Philibert Tsiranana, or the period of the Malagasy Republic (Républic Malgache). By 1972, Tsiranana's power declined, with a peasant rebellion and military coup culminating in the collapse of the First Republic, to be replaced by the Democratic Republic of Madagascar.

The Second Republic of Madagascar was a Soviet-styled Socialist Democracy, led by Didier Ratsiraka, from 1975 to 1991. Ratsiraka advocated an isolationist stance, rejecting all foreign-owned industries or land holdings, while maintaining political alliances with then Eastern Europe, Korea, and China. Sharp (1993:11) points out that although this period was characterized as a socialist one, "its economy may be defined more clearly as a form of state capitalism, where the ownership of all major industries and land holdings rests with the national government."

Ratsiraka's policies, however, which included several poorly designed investments in national industry, and massive investment in the urban sector with profound neglect of the rural sector, led to a rising international debt. As such, in 1980, during the Second Republic, Madagascar became the first African socialist state to agree to structural adjustment policies of the IMF. The adjustments entered into included privatization of banking and industry, and repeated devaluation of the Malagasy Franc¹¹ which led to 100 percent inflation.

This period, the late 1980's and early 1990's, also saw the introduction of a multitude of international conservation development projects. This is because the World

¹¹ 10-15% from 1982 to 1986; 46% in 1987; and 13% in January 1991.

Bank's agricultural reforms were tied to the conservation of the island's "megabiodiversity" (Allen 1995). At the same time, the United States Agency for International Development (USAID), having been empowered through the U.S. Endangered Species Act of 1976 to regulate resource use in developing countries, made Madagascar a major conservation priority. The Endangered Species Act

...stated that the preservation of animal and plant species through the regulation of hunting and trade, limitations on pollution, and the protection of wildlife habitats, should be an important objective of U.S. development assistance. Protection of endangered species was also emphasized (USAID n/d:17).

USAID subsequently identified Madagascar as

one of ten "threatened hot spots": a series of tropical areas identified as being critical to the global conservation of plant and animal diversity. Because of its high levels of biodiversity and endemism, Madagascar has been termed "the single highest major conservation priority in the world" (USAID n/d:1).

Madagascar is categorized as a "Group I" country, i.e., has "urgent needs for natural resource interventions (USAID n/d:19)

Conservation was further linked to development through the United States Foreign Assistance Act (FAA), section 119, amended in 1986.

AID is required to enter into long-term arrangements in which the recipient country agrees to protect ecosystems, support research, and deny assistance for actions that significantly degrade protected areas. CDSS's [Country Development Strategy Statements] are required to include an analysis of the actions needed to conserve biological diversity. Whenever feasible, activities are to be carried out by PVO's [Private Voluntary Organizations] (USAID n/d:18).

The linking of conservation with structural adjustment reforms was institutionalized nationally through the Madagascar's 1987-88 Environmental Action Plan (EAP) (the first such environmental plan in Africa). A World Bank creation, the EAP

took the position that indigenous land management practices were environmentally destructive because individuals lacked incentive to increase productivity and protect ancestral lands (Leisz, Robles and Gage 1994). This "tragedy of the commons" concept, which McCay and Acheson (1987) have shown to be fundamentally incorrect because indigenous communities do have mechanisms for protecting commonly held lands, has been presumed by the World Bank to be a necessary precondition for the conservation of the island.

Inherent in the EAP is the belief that it is necessary to secure people's rights of access to their land and natural resource base in the periphery zones of Madagascar's protected areas. The 15-year, three-phase plan emphasizes that security to land is important to environmental conservation (Leisz, Robles and Gage 1994:4).

And in 1989, Madagascar entered into the Debt-for-Nature Swap, exchanging \$2.1 million of debt for conservation projects, and another \$1 million with the World Wildlife Fund. Proceeds from the trade were earmarked for national parks management, erosion control and training of park rangers (Allen 1995:177). The following year, USAID developed a program entitled SAVEM (Sustainable Approaches to Viable Environmental Management) which was "to establish sustainable human and natural ecosystems in areas of Madagascar where biodiversity was threatened (SAVEM 1997:1)."

Madagascar currently has 36 specifically defined protected areas, which include national parks, special reserves, and nature reserves, and over 260 protected areas more broadly defined to include Classified Forests and Reforestation Zones. Many of these protected areas were established during the colonial area. While Leisz, Robles and Gage (1994) suggest that during the colonial years, strict enforcement of exclusionary policies in

the forests was enforced through the imposition of fines and imprisonment for anyone who transgressed the human/nature boundaries, Hanson (1997) suggests that enforcement remained uneven. Certainly during the post-colonial years prior to the EAP, strict enforcement eased up.

With the return of foreign powers safeguarding the storehouses of nature, fines and imprisonment returned as punishment to those residents who materially benefitted from the "global resources" by using them in any way. To mitigate the effects of sharply curtailing local access to the natural environment, peripheral or buffer zones were established as part of UNESCO's mid-1980's Man and Biosphere Program.

The main objective of UNESCO's Biosphere Reserves begun in the late 1960's is to protect a core area of biodiversity and at the same time involve the surrounding human population in benefitting from the reserve through better land use practices and sustainable development activities. The reserves are designed to include different zones of human activity. At the center of the reserve is the core zone, where human activity is strictly regulated to ensure a maximum of protection to the biodiversity in the reserve. Around the core is a buffer zone where limited human activity, such as limited herding, limited agriculture, and the gathering of forest products is allowed by the forest service. Finally, around the buffer zone is the transition zone where people live in their villages and work on their land. In the two zones where human activities are officially allowed by the state, reserve operators undertake research and extension projects which involve local inhabitants in research on better land use practices and, also, sustainable development activities (Gregg and McGean 1985; Batiss 1986) (Leisz, Nobles and Gage 1994:3,4).

In order to coordinate the protected areas of Madagascar, the World Bank established the "National Association for the Management of Protected Areas" [ANGAP] in Madagascar. Funded by the World Bank and USAID, this institution serves as the Malagasy national coordinating institute of all protected areas, in conjunction with the

national *Departement d'Eau et Forets* [Department of Water and Forests]. Six ANGAP protected area projects were thereby identified for SAVEM funding:

Recognizing that these areas were being threatened, in part by deforestation and exploitation, the projects were constructed as integrated conservation and development projects (ICDP's) and based on the concept that local populations will alter their behavior (to conservation of the environment) if they see a relationship between their economic and social well being to the protected area and if they are empowered to make the right kinds of decisions. . . . In general figures, the ICDP's received approximately eighteen and a half million dollars (\$18,500,000) through SAVEM for a period of approximately 3 1/2 years (SAVEM 1997:1).

Among these Integrated Conservation and Development Projects that the United States government finances is the Ranomafana National Park Project, located in the southeastern forests of Madagascar.

Population Migration and Land Reorganization in the Ranomafana/Ifanadiana Region

As this chapter has shown, the southeastern forests of Madagascar have provided a refuge from control and domination for the last two hundred years. Originally founded between the twelfth and fourteenth centuries by entrepreneurs seeking to capitalize on international trade on the eastern coast, the area that is now known as the Ranomafana/Ifanadiana region was a safe haven for cattle thieves and slave traders, who obtained much of their stock from the western regions south of the expanding Merina kingdom, a region which later became the administrative division of the Betsileo. Kottak (1971a:14) notes that slaves were exchanged for firearms, and that this exchange contributed to the concept of a Tanala ethnicity (discussed in more detail in the following chapter) through the making of petty "kings."

Access to firearms created temporary "kings" of Tanala descent group leaders. Normally dispersed in small villages throughout the forest, members of several Tanala descent groups assembled on fortified hilltops when Betsileo and, later, Merina military expeditions invaded their country. They dispersed again when the military force withdrew. Tanala "kings" were simply temporary military coordinators and heads of raiding parties whose positions rested on possession of firearms.

By the eighteenth century another wave of immigrants came to the region. Hanson discusses these waves of immigration in the Ranomafana region:

It is important to distinguish the waves of refugees to the Ranomafana forests described immediately above from a set of more organized and larger-scale immigrations from the north which occurred between the 18th and 19th centuries. Most of these latter newcomers were of Betsileo origin, escaping their highland homes in fear of forced labor and taxes, and seeking the more fertile soils of the Ranomafana forests. Solondraibe (1986:152) speaks of two mass Betsileo immigrations. The first resulted from the arduous demands issuing from the Betsileo kingdoms of Lalangina and Isandra; the second, from similar demands of the Merina kings Andrianampoinimerina and Radama I. It is, for the most part, these latter two groups of immigrants who founded the villages now surrounding the RNP [Ranomafana National Park] and whose descendants participate in the RNPP [Ranomafana National Park Project]. A final group to arrive near the Ranomafana region during the pre-colonial period was part of what Campbell (1988) calls the "Merina colonies". These "colonies" were settlements of civilians and military officers sent from the high plateau to found agricultural communities. These 'communities', however, also became collection points for the slave trade. The effects of these garrisons on the eastern forest cover is significant (Hanson 1997:58,59).

Thus establishing themselves amongst the slave traders and cattle thieves, the new settlers themselves became "people of the forest," or "Tanala."

Another wave of immigrants, identified mostly as Merina or Betsileo, and coming from highland urban areas, settled during the 1920's and 1930's, when coffee and timber concessions were introduced. These people came to benefit from economic opportunities associated with the expanding market economy and settled along major transportation

routes of Ranomafana-Ifanadiana-Mananjary trail or the newly-constructed National Route 25. Merchants followed, "seeking to develop businesses along the roadways. These peoples were of Malagasy, French, Chinese and Indo-Pakistani origins. They established coffee plantations, set-up small shops featuring local forest products, and operated lumber concessions" (Hanson 1997:60). At the same time as these outside entrepreneurial groups were settling, colonial officials encouraged the already settled highland farmers to labor for hire on wet rice fields in the valleys.

A well known fact of governing in Madagascar is that shortages of rice often lead to social disturbance. Thus, beginning around 1915, we witness these three processes of dislocation, coffee and rice production occurring simultaneously. Lucile Rabearimanana (1988:84) argues that perhaps more important than the French colonial administration in developing wet-rice in the Ifanadiana district were the waves of Betsileo and Merina peoples who migrated to the region in search of gain from the profits of the export economy. These highland populations were responsible for the transfer of knowledge concerning irrigated rice culture and labored for hire on Tanala fields. It is important to note here, that through their own participation in this growing cash economy, many Tanala farmers now had the means to effect a transition in their diets from manioc as the staple to rice (Hanson 1997:70,71).

Following independence, the next in-flux of outsiders were the Japanese, who funded the building of the JIRAMA dam on the Namorona River in Ranomafana in the early 1970's. Hiring local labor to provide electricity to the city of Fianarantsoa, the dam was perceived by most as a favorable project because people were employed. When the Ranomafana National Park Project came two decades later, it was with mixed feelings. Recalling the brutality of the colonial years and the continual efforts to appropriate the forest lands of the region, outsiders were viewed as thieves. At the same time, recalling the economic opportunities of the dam, outsiders were equally perceived as cash-rich, and therefore, short-term opportunities to gain additional income were in sight for some.

By linking its agricultural and environmental objectives to misconceived perceptions of local ethnic identities, the Ranomafana National Park Project fostered even more ambivalence among residents who redefined ethnic identifications to either benefit from project assistance (as Tanala) or to “rise” in status (as Betsileo) while simultaneously revising their own or others’ ancestry to justify increasing economic inequalities as inherent in one’s caste.

In the following chapter, I continue this discussion of the history of land reorganization in Madagascar with a discussion of the how the land and labor policies launched by Andrianampoinimerina and developed by subsequent rulers were inextricably linked to the social restructuring of the island. This social manipulation included deepening the divisions of class and caste, fundamentally altering gender relations, and creating “tribal” divisions currently conceptualized as “ethnic” ones and directly tied to concepts of race. In so doing, illness related to poverty and geographical inaccessibility became naturalized as “tropical” illness, while health care and healing became aligned with concepts of morality. By relegating the most impoverished and geographically isolated groups to an ethnic status deemed “backward,” “lazy,” “ignorant,” and “promiscuous” (all terms I often heard used by Project management and others to describe local residents), the association between living in the forest and healing with its medicines became simplified as a “tradition” uniformly practiced by everyone so grouped.

Chapter 4

SOCIAL STATUS AND ACCESS TO LAND

In the foregoing chapter, I discussed pre-colonial, colonial, and post-colonial land management in order to show how Malagasy forests have represented contested terrain for centuries, and how traditions tied to the forest may not be so long-lived as often believed because population migrations, changing patterns of land-use, and local forms of resistance to governmental decrees have contributed to the forging of "traditions" such as *tavy*.

In this chapter I discuss how the history of land reorganization and agricultural policy has been specifically tied to changing identities. In particular, I focus on the history of Merina, Betsileo and Tanala ethnic identities. I then show how the Ranomafana National Park Project, in seeking to control forest resources, conflated "ethnic" identities with agricultural practices through poor understandings of the concept of culture. In so doing, the history of land reorganization and social change in southeastern Madagascar has been reduced to ethnic categories and "tradition."

The way in which ethnicity has been tied to land-use practices in Madagascar has been reported as a colonial practice in West Africa, where the persistence of ethnic stereotypes has been invoked by local residents toward political objectives.

Images of forest loss can also be reproduced in local political discourse concerning ethnicity. Colonial stereotypes of ethnic differentiation among Kissidougou's populations rested partly on environmental behavior. As a 'forest people', Kissia who live in the south of the prefecture were contested ethnically with the more notherly 'savanna people' of Kuranko or Maninka origin. . . .Such stereotypes overlook evident similarities in everyday ecological knowledge and resource management, as well as the more complicated nature of Kissidougou's settlement history. Nevertheless, these stereotypes and their linked vision of progressive forest loss are sometimes invoked by rural and urban Kissia themselves, when expressing anxiety about Maninka domination, whether economic, cultural or military. Sharing one forest – where the forest islands of neighboring villages have come to touch each other – is one of the strongest metaphors of Kissi political solidarity, linked as it used to be to past alliance in warfare and to common initiation institutions. Accepting the idea that the Kissi region could (until even recently) have been united in one forest provides a politically appealing vision of ethnic unity; an instance of people using environmental issues to make politico-ethnic points (Fairhead and Leach 1996:118).

In this chapter I show similar processes at play in the Ranomafana region, where social unity becomes expressed as a Tanala ethnicity when contrasted to outside control, yet its importance to identity and practice diminishes in the village, where lineage cleaves the community, and caste forms a nearly impenetrable boundary between economic classes.

Tribalism and Concepts of Race in Madagascar

...one of our new friends observed that although the Malagasy do use the word "tribes" it gives *vazaha* a wrong impression. In his view this word suggests wider differences of ethnic origin, language and custom than exist in Madagascar. He pointed out that apart from a small Kishwahili-speaking community of Comorians (immigrants of Afro-Shirazi stock from the Comoro Islands), all the Malagasy speak mutually intelligible dialects of Malagasy and share a unique common culture. The many regional variations in custom are superficial, based mainly on contrasting natural environments and past political divisions. They are not, he insisted, marked enough to be properly described as *tribal* differences. I did not presume to

argue; the Malagasy are sensitive on this issue, having learned the hard way that internal dissension invites *vazaha* intervention. They are well aware that at present both Moscow and Washington would welcome any excuse for directly influencing political developments within Madagascar. Nevertheless, as we traveled further and noticed the radical physical differences between the "highland people" and the "coastal people," we decided that the use of "tribes" -- however politically undesirable -- makes ethnographic sense (Murphy 1985:107,108, emphasis in the original).

This quote, taken from a popular travel book of Madagascar, illuminates three issues regarding the study of ethnicity in Madagascar. The first is that Madagascar is perceived by many as divided between highland and coastal populations and that these geographical divisions have become cast as tribal divisions; the second is that ethnicity in Madagascar is often conflated with race and differences between people are conceptualized less as social differences and more as biological ones; and third, enlightenment on the shaky ground of tribal divisions notwithstanding, old ideas die hard. Dervla Murphy begins her narrative by disclosing that she has been told tribalism is a historical and political construct, but concludes that because she saw physical differences among people, she would hold firm to the notion that tribes make ethnographic sense.

Ethnographers, however, have sought to dispel, rather than reaffirm, the concept of natural tribal divisions. While Madagascar is said to be home to eighteen different ethnic groups, historical and ethnographic analyses have shown that these ethnic groups are political and historical constructions that originated both as an expression of, and response to, the expansion of the pre-colonial autocracy (see, for example, Bloch 1986; Kottak 1971b; Larson 1992). These divisions were later exploited by the colonial state to shape and understand Malagasy identities and to facilitate political control. In the process, concepts of identity have been forged in such a way that ethnic status has become far more

important to outsiders than it is to those who are said to comprise the ethnic groups while, as in mainland Africa, ethnicity has come to be a means by which people can negotiate their identities in order to situate themselves politically and socially.

Archer (1978) points out that as in other countries considered "primitive," tribalism is invoked as the fundamental conflict hindering economic and political development in Madagascar. He argues that on the contrary, despite differences in certain customs, beliefs, and dialects, the Malagasy are primarily a homogeneous population whose differences throughout the history of its unification in the 18th and 19th centuries, have predominately originated in economic and political, rather than ethnic, conflicts.

For example, French colonization facilitated the emergence of a wealthy Merina class, living primarily in Antananarivo but with close links to wealthy merchants and landowners throughout the island. Their accumulation of wealth had been possible because they had previously benefitted from Protestant educations and influential status in administrative posts during the Merina monarchy (Bloch 1986:32). At the same time, decedents of slaves and other free people among the Merina emerged as an impoverished, landless class, who had more in common with their rural counterparts than they did with other Merina. The French promoted sufficient propaganda, however, to create the impression of religious and ethnic divisions characterizing internal conflicts between Merina and non-Merina, and Protestant and anti-Protestant factions, rather than the actual class divisions that were only loosely related to Protestantism through its historical role in education and administration.

The class divisions that separated people within regions were further obscured as social divisions became characterized as geographical divisions, with social conflict

perceived as being between people from the high plateaux and people from the coastal regions. Indeed, the geographical distribution of people has had significant bearing on how ethnicity is perceived. Madagascar was settled by two groups: Indonesian seafarers who slowly migrated inland to settle in the high plateaux regions where malaria was less common, and Bantu seafarers who settled along the western coastal areas where they established trading communities. As further population migrations dispersed throughout the island, lighter-skinned descendants of Indonesians, with straight hair and fine features, were among the first to receive the favorable attention of Europeans in their support of the Merina kingdom. As people were abducted into slavery from the coastal regions, it came to be that darker skinned people in the highlands were more likely to be descended from slaves, while lighter skinned people were more likely to be descended from slave holders.

But early ethnographic accounts pointed to endogamy to explain the history of how lighter and darker-skinned people became socially segregated, such as this summary by Ralph Linton (1939:251) in his discussion of "The Culture of Madagascar":

The races are extremely diverse, great multiplicity of type being favored by endogamous group patterns. But certain main racial types are distinguishable with a fair degree of localization. In the plateau, the bulk of the population is mesocephalic, with light brown skin, long wavy hair, fairly heavy beard, and straight eyes.

Linton (1957:26,27) extended his argument further to presume a moral culpability of the darker phenotype, as he ignored the relationship of Madagascar's industrialization to disease distribution, by attributing the spread of malaria in pre-colonial Africa to Bantu descendants whom he charges virtually exterminated the superior race:

In Madagascar, brown people of southeast Asiatic origin occupy the central plateau of the island where there were no anopheles mosquitoes until they were introduced by the building of a railroad from the coast.

Completely surrounding this island of Asiatics was a belt of Negroid peoples who occupy all the fever infected coastal lowlands. One of the most interesting aspects of this situation was that the Negroid people all speak Malayo-Polynesian languages and have cultures which show a strong Asiatic tinge. There can be little doubt that they arrived on the island after the Malayo-Polynesians by a process of gradual infiltration rather than mass settlement. They presumably brought malaria with them from Africa, with the result that the Asiatic racial type was eliminated in all areas where there were fever carrying mosquitoes, although not before the Asiatics had transmitted much of their culture to the Negro immigrants.

The separation of Malagasy peoples according to their phenotype has been indiscriminately glossed as Merina and non-Merina populations, conferring an ethnic identity onto these "racial" categories. Campbell (1985) suggests that the concept of racial superiority of Merina over darker-skinned Malagasy was further facilitated by European evolutionists who argued that the lighter skin and skeletal physiology of the Merina suggested closer resemblance to European physiognomy and hence, greater intelligence.

This conflation of ethnicity with race is still deeply embedded in concepts of Malagasy society. For example, Huntington (1988:3,4) cites Michel (1957) as equating ethnic identification with race:

The author of one study of the Bara cited the "fact" that Bara "skin is frankly black and impregnated with the strong odor characteristic of the Bantu" as evidence that the social and religious system of the Bara is essentially African.

More than thirty years later, Murphy (1985:10) writes:

The exact origin of the Merina, the largest and most enterprising of Madagascar's eighteen main tribes, remains a mystery. Scholars offer contradictory explanations for their light brown skin, straight black hair and impeccable Polynesian features . . . The minority of Merina who do not look pure Polynesian tend to be tallish and rather dark with slightly wavy hair. . . .

And finally, writing for the World Bank, Pryor (1990:202) offers this simple description of social differences:

Ethnic frictions do exist, however, and have a strongly regional focus. In "high politics" the most important cleavage is between the peoples of the highlands (primarily Merina and Betsileo) and the rest of the island (the coastal peoples, or the *cotiers*) (see Spacensky 1970). *Aside from the racial differences between these two groups*, these cleavages are accentuated by a number of important economic and cultural factors (emphasis added).

Before showing more specifically how these social divisions have been represented by policy makers regarding the use of the environment and health and healing practices, I discuss how three such "ethnic" groups came to be, namely, the Merina, Betsileo, and the Tanala.

Forging Ethnicities

In addition to the economic and land reforms instituted by Andrianampoinimerina, the economic and political expansion of the new kingdom required that cultural belief systems be manipulated. *Ombiasa* and *mpanjaka* were used to promote a world view in which certain classes of people were divinely privileged over others. Viewing their authority as precariously positioned in the changing social order, many cultural leaders promoted the new policies. Social cohesion loosened as respect for leadership gave way to fear of leadership. A Merina ethnicity emerged, in which solidarity with the new royal leaders was pitted against 'the other,' non-Merina ethnicities (a strategy emulated by the French colonialists a century later [Andriambelomiadana 1992]).

According to Larson (1992), there are no references to Merina as a social group prior to the nineteenth century. He alleges that the concept of a Merina ethnic identity did

not emerge until the late eighteenth century. Prior to that, inland communities shared common ideologies, cosmologies, rituals, principles of social organization and politics, but were not collectively identified (aside from derogatory references made of them as dog-pigs). It was not until 1792, when Andrianampoinimerina moved his kingdom to Antananarivo, that the terms Merina and Imerina (the place of the Merina), were geographically extended and gained popularity among the local people. This period, he suggests, was when social practices now associated with Merina traditions (such as irrigated rice agriculture and burial in "ancestral" tombs) emerged as explicit ethnic practices distinguishing privileged groups from the subjugated groups of the expanding empire. Merina ethnic identity, he argues, was fashioned in part by a few ruling elite who sought to diffuse social discontent in the highlands.

This forging of ethnicity was directly linked to the reorganization of land during the rise of the Merina monarchy. For example, Larson indicates that one of the most significant tactics Andrianampoinimerina employed to assure his success was to invent an ethnic tradition and social structure in which ethnic groups would be distinct, identifiable groups. Toward this end, he popularized ancestral tombs and ancestral land (*tanindrazana*). The official demarcating of land holdings was very important to Andrianampoinimerina's land policy, in order to prevent other rulers from attracting followers, and to ensure the collection of taxes (Campbell 1985; Larson 1992). The new *hetra*, not necessarily ancestral to those to whom they were assigned, (having in most cases recently migrated as a result of warfare or to escape slavery), were recast as ancestral lands by Andrianampoinimerina. Anyone who did not support the "ancestral land" was to be publicly driven away by the *fokonolona* and his *hetra* seized and given to

others. The manipulating of this ancestral tradition continued through the nineteenth century, creating a new ethnic "Merina" identity that previously did not exist (Bloch 1985; Feeley-Harnik 1991; Larson 1992).¹

Each *tanindrazana* and ancestral tomb would have its own relationship to the king, its own history, and its own set of rules and social order. This construction of ethnicity served to assure the loyalty of the *firenenena* (small-scale corporate descent groups organized around political leaders to designate the kingdom) to the king and provide a sense of safety and security to rural inhabitants.

Deepening Social Divisions and Castes

As Andrianampoinimerina initiated his land reorganization policies that were to later become state policies, he linked them to social restructuring. The emergence of class divisions, clearly triggered long before with concepts of sovereignty and serfdom, were rapidly fixed in the new society. Landlessness or near landlessness, differing access to resources, monetization of the economy, monopolization of the slave trade by an elite group of chiefs and kings, and the introduction of foreign-owned or -controlled industry, all served to dispossess the majority of the population of the means of their production and to facilitate class divisions.

¹ Imerina had been documented as a place name, but it wasn't until the early nineteenth century that Merina is mentioned as an ethnic group (Larson 1992).

Andrianampoinimerina, while not establishing caste divisions himself, capitalized on them to give credence to his dominion.² To do so, however, it was first critical to justify to the public the necessity of slavery. One way that he succeeded in this effort was by exploiting the authority of the *ombiasa* [shaman, or divination specialist and healer], by propogating the myth that the diety Zanahary had fixed the destiny of each person, and that people were not equal in the eyes of Zanahary, who had created some with more elevated destinies than others (Beaujard 1983:388). Beaujard further suggests that the *mpanjaka* [village chief or one who governs], viewing their authority as precarious in the new social order, used their divination skills to contribute to the perpetuation of this myth, in order that their political strength be viewed as divinely determined.

Four broad social divisions were then advanced. These were the *andriana*³ (nobles by birthright), *hova*⁴ (free people), *mainity* (slaves or emancipated sovereigns, including descendants of *hova* reduced to slavery), and *andevo* (slaves) (Dubois 1938). Slaves were forbidden from owning land, thereby rendering them dependant on *hova* or *andriana*.

² Campbell (1985) reports that it was King Andriamasinavalona (1675-1710) who laid the foundation for a caste-based society by restricting such castes to a specific area of Imerina and imposing compulsory state service (the irrigation of rice fields). Following his death, civil wars fragmented the region until Andrianampoinimerina rose in power and reinstituted Andriamasinavalona's techniques.

³ The *andriana* are frequently invoked as a "traditional" class of royalty. Dubois (1938) however, argued that the formation of the *andriana* caste was defined by Ralambo (who ruled from 1615-1640), and is therefore, of relatively recent social innovation.

⁴ Dubois (1938) points out that the term "*hova*" is problematic, because among the Betsileo the term refers exclusively to descendants of chiefs and the privileged class. Among the Imerina, however, the term refers to all free people and means "second class."

Campbell (1985) maintains that the Merina social structure resembles not so much a class system, in which economic mobility is theoretically possible, than it does a caste system.⁵ In this caste system, the *hova* were elevated in status only as the *andevo* were absorbed through forced labor and slavery. Each new Merina social group, as in India, was absorbed as a new caste, according to Campbell. Moreover, to maintain such a caste system, it was necessary to enforce rules of endogamy, which he did by legislating family law and restricting each caste to a specific territory from which they could not move without royal consent (Campbell 1985). The concentration of caste, Campbell notes, provided a concentration of labor resources. Therefore, by concentrating *hova* and *andevo* castes in the eastern forested regions, their labor could be appropriated to exploit the forest resources.

In addition to exploiting social divisions of class and caste, gender divisions were fundamentally restructured in association with the reorganization of land. Having no previously codified system of inheritance in which land was passed, nor demarcated divisions of land limiting access, it was necessary for the king to regulate transfer. First, according to Larson (1992), a fundamental characteristic of the social restructuring was to link every household with a defined community; toward this end, Andrianampoinimerina tried to create a patriarchal household structure in which men were to become heads of households. A man assumed legal rights after leaving his parents' home and setting up his own household with a woman. Only men, according to Compte (1963) were granted

⁵ Linton (1933) had also noted the resemblance to a caste system, but pointed out that such a type of social organization was not uniform throughout the island, and even within the limited territory of the Tanala, there were differences. For example, the southern Ikongo was organized more like a caste system, than were the northern Menabe.

hetra, which were limited to the surface of a rice field sufficient to support one family for one year. Women – who had previously shared land equally with men – did not have the right to buy or sell *hetra*, but could inherit them.

Inheritance, however, was strictly regulated. Frotier de la Messeliere (1932), Larson (1992) and Thébault (1951) contend that prior to the nineteenth century, males and females had, theoretically, equal rights to inheritance. Rights to inheritance, however, like all social policies and practices, were disparate throughout Madagascar, and had been changing for quite sometime prior to the rise of the Merina, even in the highlands.⁶ Notwithstanding the diversity of inheritance rights, Andrianampoinimerina's mandates severely curtailed women's access to land and resources in the highlands. Father to son inheritance was promoted, and wealth acquired jointly during marriage was apportioned two-thirds to the husband, and one-third to the wife (the institution of marriage is discussed subsequently). Andrianampoinimerina justified the unequal division of property because men were obliged to serve in the military to defend the country and safeguard the kingdom (Rabenaro 1967). The contributions made by women, who maintained the *hetra* and reproduced the labor supply, were accordingly disregarded. These policies, initially affecting only highland groups, came to be regarded as indigenous Malagasy law when the colonial administration sought to promote its own social policies by incorporating existing social and political structures into its reorganization of land and resources.

⁶ Sarah Fee (1993 personal communication) indicates that among the Antandroy of the south, where Islamic influence had penetrated long before the rise of the Merina, rights to inheritance have for several centuries favored males over females. Frotier de la Messeliere (1932) had also reported the long-standing gender inequities in property division and social relations in those regions under Islamic influence.

Transformation of Gender Relations

During the rise of Merina autocracy, gender relations were regulated by codification of a family law that was essential to the maintenance of property laws.⁷ The *fanambadiana* had been an informal gender relationship, wherein women were free to leave their partners, but it was not necessarily an ideal arrangement for women. Frotier de la Messeliere (1932) indicated that women were considered *vady marolahy* (the spouse of many men). In this arrangement, a woman was regarded as the spouse of not only her partner, but his brothers, as well. Upon her spouse's death, the widow could become the partner to one of these brothers, or a cousin (*entin-doloha*).⁸

Andrianampoinimerina banned the practice of *vady marolahy*, as well as polyandry. In so banning women from having more than one spouse, he reaffirmed the rights of men to polygamy – although they were limited to no more than seven wives at one time. Regardless of the gender inequity of the law, polygamy was not necessarily viewed as injurious to women. Multiple wives lightened the domestic responsibilities of women because work could be shared; polygamy therefore became increasingly

⁷ Andrianampoinimerina's legislation was not recorded in writing; the first documented code of laws was drawn up by Ranavalona I in 1828 (Thébault 1951). In this Code, however, she referred to the legislation of Andrianampoinimerina and Radama I as the basis by which the written Code was drafted.

⁸ What is not clear, however, is whether this relationship was a voluntary one. All the literature that I have come across indicates that a woman was considered the master of her own body and enjoyed sexual freedom. Assuming this to be true, then the *vady marolahy* arrangement could have been to her benefit, particularly upon being widowed, in which case, if the brother was obliged to "marry" her, her economic security would be ensured. If, on the other hand, the relationship was an obligatory one on her part, then the *vady marolahy* relationship was to her detriment, which was how Frotier de la Messliere viewed it.

advantageous to women as their economic responsibilities increased. Furthermore, the institution of polygamy was practical, given the increasing shortage of men in the community. Campbell (1985) noted that polygamy drastically increased with the shortage of male labor. While wealthier groups could exploit slave labor for their economic production, less wealthy groups, now controlled by men, turned to "marriage." Whereas a female slave could cost up to \$100.00, Campbell (1985) observes, a wife could be purchased for only \$20.00 to \$30.00.

To further restructure the social organization of the community, control of the *fokonolona* was vested in male elders, who were given authority to rule on divorce, child custody, inheritance, land conflicts, domestic disputes, adoption, disavowing of children, and slavery (Larson 1992). The conversion of the *fanambadiana* relationship to a marital relationship cannot be pinpointed, but I suggest that by curtailing women's rights to multiple partners, and vesting with men the authority to rule on the dissolution of these relationships, the *fanambadiana* was gradually recast as a "marriage," which was to become even more institutionalized in the nineteenth century through Christian ceremonies and colonial licensing.

As women's *fanambadiana* roles were restructured, their voice was also silenced. Among the strategies he employed toward the invention of a Merina ethnicity, Andrianampoinimerina instituted the speech-making "tradition" of *kabary*. *Kabary* were formalized oratory designed to mythologize the history of the highland kings and thereby legitimate Andrianampoinimerina as a rightfully-titled monarch of all the highlands (Campbell 1985; Larson 1985). Because the *kabary* was intended as the history of the kings, and not the history of the people, voices of resistance were suppressed; women,

who had been among the most audible opponents of the new order, were forbidden - upon threat of enslavement - from attempting their own *kabary* (Larson 1992).

In addition to being divested of land and voice, women were deprived of legal rights, unless they independently owned *hetra* on which they paid taxes. Women who did not have *hetra* (the majority of women, considering their limited means to acquire it), could not bring civil actions on their own behalf, and were forced to rely on their husbands or male relatives (Larson 1992).

But with the transformation in the gendered-division of labor brought on by *corvee* labor, slavery, and missionary educations, not all women were disadvantaged. Indeed, the growing prosperity of a Merina elite class brought with it marked disparities among women, as some women became very wealthy, while others were impoverished. For example, Campbell (1985) indicates that one of the avenues to economic prosperity that the Merina empire did facilitate was (by 1820) the widespread ownership by the Merina of non-Merina slaves. The responsibilities for domestic reproduction were doubled for enslaved women who were responsible not only for the domestic reproduction of their own families, but for the domestic reproduction of their masters' families.

Consequently, while tensions between genders was exacerbated by the policies of the Merina state, men and women were also united by their class interests and evolving ethnic identities. As such, the rise of the Merina autocracy was a period of great social conflict. Campbell (1985), for example, rejects the claim that the Merina expansion provided unprecedented peace and prosperity, as is popularly taught in contemporary Madagascar. He notes that there was never voluntary obedience to Hova authority and Merina power was never strong enough to maintain law and order for more than a third of

the island. But resistance to Merina rule, while effective, also contributed to the success of Merina social restructuring. For example, Campbell (1985:11) notes that Malagasy groups were stratified by status and rank according to the firmness of imperial rule and the extent to which they collaborated with Merina imperialism. In 1810, he reports, when Bezanozano groups blocked the Merina trade outlet to the east coast, Radama's troops defeated them and subjected the survivors to perpetual servitude.⁹

⁹Similar social domination was exercised against groups which came to be known as the Betsimisaraka (Campbell 1985) and the Sakalava (Feeley-Harnik 1991). Feeley-Harnik (1991:101) reports that to concentrate their labor supply, as well as enculturate others in Hova practices, the Merina state established petit-colonies in which 'pens' were constructed to enclose local (Sakalava) inhabitants. She quotes Guillain (1845 in Feeley-Harnik 1991:101) Andrianampoinimerina's successor, Radama I:

Radama wanted to make of them at once kinds of model colonies to which the indigenous people would be drawn and would habituate themselves little by little to living peaceably among the Hova, to searching for their well-being in agriculture and not in marauding; to recognizing, in a word, the advantages of a more civilized social state than their own.

But these efforts to socially, politically, and economically dominate the masses were not readily accepted. Economic resources had been drained from the country by the military expansion (Campbell 1985); the remaining wealth had become concentrated among a minority elite who had ties to the Merina state or were otherwise enriched by the slave trade or expanding industry. These conditions were the catalyst to massive resistance to the nineteenth century Merina monarchy. Several groups were persistent in their defiance to Merina rule. While the Sakalava, representing an established kingdom on the western coast of Madagascar, remained the primary economic and political rivals to the Merina, their rulers intermarried with Merina rulers in efforts to consolidate their own power; nonetheless, the Merina were ultimately the beneficiaries of this practice. Despite

While two-thirds of the island did not voluntarily submit to Merina rule, and their involuntary submission fostered local tensions with the displacement of men from rural communities, among those who did acquiesce to incorporation in the Merina state were the highlanders living to the south of the Merina region, and who became known as the Betsileo.

Emergence of Betsileo and Tanala Ethnicities

The Betsileo were an administrative construction of the Merina autocracy (Kottak 1971a). The area which is now regarded as Betsileo was first populated around 1700. Andrianampoinimerina, seeking to control the mass populace and the fertile lands, organized the island into six administrative divisions. This administrative reorganization began as small surveillance posts around which provinces were formed (Kottak 1971a). Kottak (1971a:136) stressed this point in his ethnography of the Betsileo.

Many of the ethnic units enumerated in the Malagasy census originated as labels for provincial and territorial divisions of the Merina state. Employed also by the French, they were reinforced, and today they ascribe ethnic status for life.

In the case of the Betsileo, he indicates that

The distinction between the Betsileo and the Bara appears to have been created by the Merina when they drew an administrative line between the Betsileo province with its capital at Fianarantsoa and the Bara province

the negotiated power struggles of the groups' leaders, however, the Sakalava people did not acquiesce to such domination, nor did the Antandroy to the south, the Antankara to the north, or the Betsimisaraka to the east. Betsileo and Tsimehty identities, and their well-documented resistance, did not transpire until later in the century.

with its northern capital at Ihosy. Through time, this administrative division has come to be regarded as an ethnic distinction (Kottak 1971a:136).

The administrative divisions of the Betsileo and the Merina were further reinforced by the colonial administration. Allen (1995:124) (citing Chaigneau) points to this process of reifying ethnicity:

The extent of "tribalism" in Malagasy politics has often been exaggerated to disguise other animosities of political elites, social classes, or religion. It is nonetheless true that political and social privileges originating in the nineteenth-century internal colonialism of the Merina have engendered considerable resentment among other Malagasy. Chaigneau identifies the role of the French colonial administration in perpetuating the conflict: "The colonial government bequeathed a practice of exploiting the bitterness emergent from situations of domination, while building an anthropological and ethnological literature aiming at "scientific" justification of this opposition. This was the product of an analysis which proved effective and convenient in controlling the country but which scarcely considered sociological realities."

One strategy toward this end was French colonial Governor Gallieni's *politique des races*. Governor Gallieni was the first colonial governor to control Madagascar, taking control with the occupation of Madagascar in 1895, and colonial annexation in 1896.

Allen suggests that the *politique des races* was a colonial effort to institute a quasi-affirmative action campaign in which coastal groups were targeted for educational and economic opportunities to facilitate social parity with the Merina (which the colonial government sought to disempower). In the end, however, the *politique des races* turned out to be an ineffective policy because, as Allen argues, the better-educated high-plateau "Merina" proved to be the more suitable job applicants for colonial administration, and colonial resources were too limited to implement the policies of the *politiques des races*.

Thus, during the colonial period social disparity intensified between Merina and non-Merina, rather than lessened.

Whereas ethnic groups in Madagascar, as elsewhere, have been essentially political constructs, Kottak (1971a:136fn) notes that

There have been exceptions in which ethnic designation is determined by environment rather than by political order. The Tanala inhabit the rainforest between the highlands and the east coast. The term Tanala means "people of the forest." Anyone who lives in the forest and practices a Tanala horticultural economy is a Tanala. The common cultural adaptation confers a certain ethnic unity here.

Thus, Kottak makes two important points relevant to the ethnicity of the Betsileo and the Tanala. First, he suggests that the Betsileo, like most other of the eighteen "designated ethnic units" of the Malagasy population, are fairly recent administrative constructions, rather than self-distinguished sub-cultures of the greater Malagasy "culture." Second, he points out that the Tanala are not an administrative division, but are instead forest residents identified by the way they live within their environment. This conception of the Tanala as being defined by the way they live is similar to how Astuti has represented the concept of ethnicity among the Vezo. Astuti (1995) has shown how the Vezo, people of the west coast of Madagascar whose economic subsistence is based on fishing, are presumed to be an ethnic group based on descent, yet viewed from the perspective of the people themselves, Vezo is a performative category in which people become Vezo by living as Vezo.

...Vezo become what they are through what they do; both identity and difference result from activities that people perform in the present rather than from a common or distinct origin they acquired at some point in the past (Astuti 1995:465).

Her concept of “becoming” Vezo parallels Kottak's (1971b) view that anyone can become Tanala, by practicing the Tanala forest economy. The Tanala and the Betsileo, while treated as two different "ethnic groups," are, according to Kottak, two very different categories of people -- one a political category of highland people administratively created by the nineteenth century Merina state, the other a geographical category of people who live within a certain environment and therefore practice certain economic strategies for effectively living within their environment -- most notably, swidden agriculture.

Building on Harris (1979), Kottak proposes a model of cultural adaptive types, rather than "ethnic" groups, to understand how different groups of people use the land in which they live. In so doing, he treats "Tanala" as swidden agriculturalists living in the forest, and "Betsileo" and "Merina" as irrigation agriculturalists living in the central highlands. He clearly illuminates the fallacy of regarding the Merina administrative divisions of the population as credible cultural boundaries, but uses the names of these groups to help identify people living within different environments. Thus, he groups "Merina" and "Betsileo" together as irrigation agriculturalists of the central highlands, as he does the "Tanala" and the "Betsimisaraka" (living in the central coastal forests northeast of the Ranomafana region) as swidden agriculturalists of the eastern escarpment. The analytical boundaries separating groups of people are, in this model, economic boundaries rather than ethnic ones; the economic strategies people practice are thereby made fundamental to understandings of social structure. Conceptualizing culture, then, is less a matter of identity than it is a matter of economic relations.

Kottak's conceptualization of adaptive types echoes Linton's (1939:290) argument that the social distinction separating Betsileo from Tanala does not arise from descent, but instead from economic practices.

Tanala and Betsileo cultures were identical in the main. The differences are traceable to the change in productive methods from dry to wet rice cultivation. This is proven by several circumstances: The traditions in Betsileo indicate an old culture very like Tanala; the institutions of both indicate a common source, and many of them are still identical; the changes in Tanala were gradual, and were well on the way to becoming identical with Betsileo when the French took over; and finally some of the Tanala tribes took over the wet rice method and abandoned it because of the serious incompatibilities it created in the social structure. The spread of wet rice cultivation cannot be attributed solely to diffusion; wet rice culture was endemic in Tanala and coincident with dry rice. Its spread was favored largely by exhaustion of the dry method. Hence in examining the changes secondary to this main innovation, we need not depend exclusively on diffusion for an explanation.

The history of wet-rice and swidden rice agriculture is therefore more clearly understood by examining the historical and social factors shaping land use, rather than summarizing Betsileo and Tanala "cultures" and presuming the practice of *tavy* to be embedded in a cultural belief system, as I will show it has been by the Ranomafana National Park Project in implementing its health and agricultural policies. First, however, I discuss in more detail the ways in which ethnicity, caste, and lineage have evolved in the Ranomafana region.

Honoring Tradition: "Cultural Sensitivity" and the RNPP

The Ranomafana National Park Project [RNPP] has identified swidden agriculture as the greatest ecological threat to the region's biodiversity (RNPP 1994). The most important economic and social strategy of the RNPP administration has been to encourage

the shift from swidden rice agriculture (*tavy*) to irrigated rice agriculture (*tanim-bary*), a strategy which failed for the colonial administration. To compensate the residents for loss of the forest lands, the Project promised improved health care, sanitation, contraception, education and revenues from the National Park.

To gain understanding of the perceptions and needs of the local villagers, members of the RNPP and representatives of the Department of Water and Forest visited all the villages surrounding the proposed national park. This survey took seven six-day trips on foot over steep terrain.

The average village housed 300 individuals who lived in about thirty adobe mud huts with thatched rooms. We met with the village elders first, then had a general meeting with the population of each village. The elders discussed the need for schools, health clinics, and technical assistance with agriculture. As we listened, the scope of the project increased. For long-term success in protecting any habitat we need to be realistic and begin with incorporating the needs of the people who live adjacent to the protected area from the beginning (Wright 1992:28).

The project has raised high expectations among the local villagers that cannot be met. And unfortunately, pilot projects do not address this issue. The equitable distribution of benefits to villagers in compensation for the loss of resources of the park needs to be given highest priority (DEF/USAID/ANGAP Debriefing, 7/12/93, General Observations).

That the project promised social benefits in exchange for rights to forest land is clear. What is less clear is how residents were selected to receive these benefits. As with many development projects, those villages located closest to the road--and therefore more visible to consultants, reporters and tourists -- received more benefits.¹⁰

Ambatolahy is a village five miles from Ranomafanana, just off the n[?] road. It is near the entrance to the park in what scientists call high humid cloud forest. All seven of the park guides [the Principle Investigator of the RNPP] has hired to lead tourists into the park come from this town (Bohlen 1993:27).

¹⁰ See Chambers 1983 and Hancock 1989 on beneficiaries of development projects.

During our return trip she stops at a village at the park trailhead to present a toilet seat she had brought from the United States for installation in its privy. (Will other villages be envious? Will she have to order twenty-five more?) At her suggestion this village has also built a thatched-roofed snack bar. Here the villagers sell soft drinks to thirsty hikers with an appealing shyness bordering on diffidence. A noncash economy is reaping its first monetary payment from the park; a service industry is being born though no one quite realizes it (Bohlen 1993:36).

Hanson has also shown how the village of Ambodiaviavy received hurricane relief aid from the park, as well as other benefits (Hanson 1997), while the centrally located town of Ranomafana has been rewarded with numerous construction projects and local businesses are provided with periodic coats of whitewash.

But how those villages off the road have been selected for project benefits, particularly for health care, is related more toward perceived agricultural practices and ethnic identity than it is toward putting on a good show. In determining how social benefits would be distributed, the project focused on the social factors contributing to the environmental destruction in the area. More specifically, the project attempted to address the local social factors contributing to the practice of *tavy*.¹¹ In so doing, it identified two "ethnic groups" in the region – the Tanala, and the Betsileo, representing the early settlers and the later immigrants, respectively.

Two ethnic groups live within the buffer zone: the Betsileo people of the Western highlands and the Tanala people who mainly live in lower elevations in the central and eastern regions of the park. There is much intermingling between the two groups (RNPP 1994:4).

¹¹ Not surprisingly, the relationship between urban resource use and environmental change, the historical context of farming in the Ranomafana region, and the social changes associated with structural adjustment and the park itself, were not included in this focus.

According to project documents, the agricultural practices of the residents are distinguished by ethnicity.

Two basic forms of subsistence agriculture are practiced by farmers in the peripheral zone. . . The Tanala people traditionally practice slash and burn agriculture or "tavy." . . . The use of tavy has had a considerable negative environmental impact in the eastern cloud forest and lowlands. Since 1960 it is estimated that 50% of the existing forests have been cut, mainly for tavy . . . The Betsileo people traditionally cultivate paddy rice in relatively flat land around rivers and streams (RNPP 1994:5).

Tavy is viewed as the "tradition" of the Tanala (RNPP 1994:16).

The advantages of tavy agriculture are that it often yields more than paddy rice, especially in the first year, it is easier to cultivate, local people can't afford chemical fertilizer necessary for paddy rice, multiple crops can be planted in tavy fields, fewer tools are needed for tavy, guarding the fields is not necessary and cattle can graze on the residue. One important aspect of this agricultural system is cultural in that the Tanala people have traditionally practiced tavy (RNPP 1994:16).

The project thus describes the economic and pragmatic reasons why *tavy* is practiced, but concludes that an important aspect of why it is practiced is cultural "in that the Tanala people have traditionally practiced *tavy* (RNPP 1994:16). The reasons why people practice a certain farming strategy is thus reduced to a timeless, non-rational notion of "tradition," in other words, even though the system makes sense economically, it is practiced by the Tanala for "cultural" reasons, because it is their "tradition."

They are further said to be inexperienced with irrigated rice farming, and must depend upon Betsileo labor to do it for them.

Most Tanala villagers, and even some Betsileo villagers in the central section of the park, are not skilled at working on rice paddies. Having inhabited the region for more than a century and having depended mainly on tavy agriculture, they have lost much of the necessary knowledge, if indeed they ever had it at all. For the last five to six decades, or longer in some cases, many Tanala households have used migrant Betsileo laborers from the High Plateau to work their rice paddies. Peters

(1993:190) reports that in one Tanala village, residents "may even leave the rice paddies idle if they do not have enough money to employ the Betsileo to complete all the paddies (Ferraro and Rakotondrajaona 1992).

The Tanala are further characterized by a social organization in which power is vested in the *mpanjaka*, with women having relatively little power in comparison to the Betsileo (Ferraro 1994). It is alleged that due to their "tradition" and their "culture" that they have been resistant to the project strategies to increase irrigated rice fields, and pose the greatest social threat to the "ecosystem."

RNPP development activities during Phase II will rely on a prioritized approach to address threats identified in the three target areas: 1) non-sustainable, consumptive utilization of forest products 2) sustainable, consumptive utilization of forest products and 3) sustainable, non-consumptive utilization of the forest. *These activities will be tailored to take into account ethnic variations of resource use* and economic stratification patterns within peripheral zone communities (RNPP 1994:24, emphasis added).

The Betsileo, in contrast are viewed by the project as being more amenable to irrigated rice farming, more experienced with agricultural innovations, and more educated. Their social structure is distinguished from the Tanala, in that power is represented to be more democratically-controlled, with village elders and women having more authority in decision-making regarding resource use. Like the Tanala, the social structure and agricultural practices of the Betsileo are said to be rooted in their "traditions" and their "culture" (RNPP 1994:5).

This dichotomizing of village residents by their ethnicity provides a circular reasoning by which the project classifies people. If they practice irrigated rice farming, they are Betsileo; if they are Betsileo, they practice irrigated rice farming. If they are *tavy* farmers, they are Tanala, if they are Tanala, they are *tavy* farmers. This view treats the

fact that the northern, southern, and central regions are flatter, with more land conducive to wet-rice agriculture, as coincident to ethnicity. The eastern "Tanala" region is much more topographically constrained -- very little land is suitable to irrigated rice farming, yet the practice of swidden farming is regarded by the project as "ancestral tradition," borne of this topography perhaps, but, over time, has become so firmly fixed in the Tanala mind as the way of the ancestors that they are incapable of adopting new farming practices unless they have no other choice.

This ethnic stereotyping has impeded both groups from receiving development assistance. Prior to the project, UNICEF provided assistance to the Malagasy government to target those they identified as Betsileo for receiving credit to buy fertilizers and other agricultural inputs, because they were allegedly more responsive to increasing wet-rice production. Now, presuming that it is the Tanala who need the most "sensibilization," the project has targeted those they identify as Tanala -- based on the extent to which they practice tavy -- to receive the benefits of agricultural extension. Working to incorporate the supposed "Tanala culture" into its scheme, the project both aims to obliterate the culture of *tavy*, while catering to the perceived traditions of a Tanala ethnic identity. At the same time, they embrace a neo-colonial policy of indirect rule, in which agricultural change is facilitated by working within the village social structures in the name of "participation."

The programs will attempt to work through local power structures to address the cultural aspect of tavy as well as through educational and technical programs that look at the production levels of the crops and alternatives. . . . Targeted groups of residents will be those who have historically been involved in cutting virgin forest lands. These people include young or poor households who have not inherited land, migrants who have no designated land and older people who contend that use of the

forest is their right. Programs will be concentrated mainly in villages on the eastern side of the park where population densities are the greatest and tavy is utilized extensively. The western region of the park and the areas of the high plateau, which are mainly inhabited by Betsileo, have no tavy tradition and land that is more conducive to paddy rice. These areas will be excluded from the programs unless individual villages are identified as posing a significant threat (RNPP 1994:22).

Moreover, Hanson (1993) suggests that the ways in which Project planners have stereotyped local populations in terms of ethnicity may have profound effects in the manipulation of cultural rituals to legitimate claims to land, and might lead to other recontextualizations of folklore and ritual. He, too, points to the ways in which ethnic stereotypes have been reproduced by the project and divorced from political and historical context:

In planning many of these projects, Park researchers have delimited a population who they believe pose the most immediate threat to the area's forests. Park development, sociological, and health team discourses, in representing the needs of this population, have reproduced some long-standing ethnic stereotypes. The Betsileo, located to the north and west of the protected area, have an extensive history of contact with the more "developed" Merina and French populations in the highlands. Because of this association, the Betsileo are said to be hard working farmers, competent with wet rice agriculture and open to Park innovation. It is only poverty, population growth and landlessness that has forced these populations into *tavy*. The Tanala, on the other hand, remained relatively isolated from highland influences. The Tanala "prefer" *tavy* (Peters 1992:235), burning a section of forest and relying upon the soil's short-lived fertility to produce rice, corn, beans, manioc, coffee, bananas, and pineapples. That the Tanala continue to depend upon such an "unsustainable" agricultural system is, in part, an effect of their political organization. According to Ranomfana National Park socio-economic discourses, the Tanala *mpanjaka* (governors), unlike the more democratically-oriented Betsileo leaders, wield complete control over the distribution of resources. The *mpanjaka's* monopoly over the village's wet rice fields forces younger farmers and more recent immigrants into *tavy* production. Because the *mpanjaka* are concerned with maintaining such privileged positions, Tanala traditional authority is seen as a major obstacle to Park "development" projects (Peters 1992:234-237; Samisoa

1992:134-135; Ranomafana National Park staff, personal communications) (Hanson 1993:338-339).

Contrary to the *mpanjaka* of Ranotsara controlling the irrigated rice fields and undermining democratic processes, it is instead those who have most benefitted from the project itself who control the most land in Ranotsara. The processes of colonialism, structural adjustment, the Japanese-funded JIRAMA dam, and the Ranomafana National Park Project, have provided the most significant means by which three households of the Zafinaraina lineage have been able to absorb the land and labor of the village and in so doing, undermine the authority of the *mpanjaka*.

Drawing from Kottak's (1971a) model of adaptive strategies, understanding the relationship between agricultural practices and social structure can help to understand local power structures. In an article well-known to scholars of Madagascar, and which can be found on the shelves of the RNPP library, Oxby (1985) has argued that historical changes, not "traditional" reverence for the *mpanjaka*, have shaped power structures in Malagasy farming communities.

The transformation of land use from forest to farm is gradual: the ancestors of the irrigated-rice cultivators of the central plateau area of Madagascar were hill rice cultivators several centuries ago, when the area was covered by forest. Gradually, as the forest was destroyed, they turned to irrigated agriculture. In some cases, people were pushed back into the forest as a result of wars and reverted to hill rice cultivation (Bloch 1975).

Instructive also is the social transformation, from a sparse population of forest dwellers living in semi-permanent settlements whose social organization is relatively egalitarian, to a village-based society characterized by higher population densities and a more hierarchical social structure. These parallel changes in land use and society are important in understanding the farmers' choice of agricultural strategy (Oxby 1985:43).

If, then, rice cultivation is a result of historical circumstances how is it that people's histories have been replaced with their ethnicities? As Hanson (1993) argues, stereotypes, rather than empirical research, shape discourse on populations in the Ranomafana region. He ties contemporary stereotypes to colonial representations of the Tanala and Betsileo.

These colonial understandings of the Tanala as lazy and unconcerned with the future of the forests constitute the historical precedents for RNPP attitudes toward the Tanala of the Ranomafana region. Most RNPP socioeconomic studies distinguish between the Betsileo living to the west and north of the RNP, and the Tanala, occupying the areas south and east of the Park. "The Tanala," we are told, "traditionally practice *tavy* . . . cultivation," whereas the Betsileo, who in the past planted rice in the valley fields, "have now begun practicing *tavy* since arriving in the region, due in part to the topographical constraints" (Ferraro & Rakotondrajaona 1992:6). In Madagascar, *tavy* and wet-rice cultivation occasion very different responses from observers. Ferraro and Rakotondrajaona argue that "many Malagasy and foreign people who come to Ranomafana from other areas comment that the locals in this region, especially the Tanala, are lazy. They say that the Tanala prefer *tavy* because it is easier; that they don't work very hard on their rice paddies, preferring to pay migrant Betsileo to work on them. These observations are partly true" (ibid:10). As the historical sketches I presented above make clear, these observations are absurd. However, such stereotypes are the norm in the RNPP (Hanson 1997:103).

As Hanson (1993:338-339) further indicates, the discourses of ethnicity employed by the RNPP neglect informed understandings of how the Betsileo and Tanala ethnic distinctions have evolved. In addition, I contend that they also reflect weak understandings of the broader academic scholarship on ethnicity and culture.

Young (1986) distinguishes two primary models of ethnicity: the instrumentalist model, which treats ethnicity as a political concept based on competition and self-interest,

and the primordial model, which treats ethnicity as a cultural phenomenon, based on historical tradition.

In discussing Tanala and Betsileo ethnicity, D. Peters (1994b), employs an instrumentalist model in an effort to make the project more egalitarian. Using stereotypes of the Tanala as *tavy* farmers who have no knowledge of irrigated rice agriculture and are less "developed" than the Betsileo, she aims to increase Tanala participation in the project and bring them closer to Betsileo standards of living.

Converting forest land to farm land by way of the slash-and-burn agricultural practice is the most intensive natural resource use by the resident populations in this area. This practice is regarded as the most destructive activity to the forest and led directly to the establishment of the park. The exclusion of the local populations from the traditional *tavy* rice agriculture will disrupt the household economy of the Tanala, the *tavy* agriculturalists. In addition, as *tavy* represents a way of life, governs a set of cultural beliefs, and dictates local social organization, the ban on *tavy* will have impacts beyond the disruption of household economy (D. Peters 1994b:6).

These data show that the exclusion of the resident peoples from the natural resources within the park boundary means disruption of household economy, more time allocated to working, and loss of natural resources for a variety of purposes. The most serious impact perhaps rests in the impact on cultural identity, if the project is to succeed in banning *tavy*. The data also suggest that impacts on the Tanala and the remote villages will likely be stronger than on the Betsileo because the life of the Tanala and the remote villages is more connected to converting and exploiting the natural resources (D. Peters 1994b:8).

Because the Betsileo in general own more paddy fields, it is likely that they may benefit more from introduced technologies (e.g., water management and organic and chemical fertilizer application) than the Tanala; the households that are fortunate to own more paddies are likely to benefit more (D. Peters 1994b:9).

Peters' image of Tanala and Betsileo ethnic groups is the one most often cited in project documents; unfortunately, it is her *image* of ethnicity the project has incorporated,

not her aim. Peters' main point is that those most disenfranchised and impoverished should become principle beneficiaries of any development aid, including health aid. A class or caste analysis divorced from ethnicity would more accurately represent the local populations, thereby illuminating her call for a more egalitarian project. The project, however, appears to have closed its ears to her main point, brandishing only the images she employed in its effort to address the cultural needs of the population.

Hanson, conversely, employs the "primordial" model Young identifies, in his efforts to situate *tavy* in history and record Tanala "consciousness." His efforts to historicize the Tanala are aimed at contextualizing contemporary views and practices as transformative and reasoned, rather than the ageless "tradition" and irrationality of *tavy* portrayed by the Ranomafana National Park Project.

For the Tanala, the economic and cultural aspects of *tavy* cannot be separated. Rather than being a non-sustainable means to meet basic needs as the RNPP argues, *tavy* represents a historical response to such forces as slavery, forced labor, taxation, forced export agricultural production, and pre-colonial and colonial forest policies. The most significant regionalization process for the Tanala in recent memory is the creation of the Ranomafana National Park and the establishment of the RNPP (Hanson 1997:83).

Yet both these models of ethnic groups presume economic and social homogeneity (Banks 1996:13) and therefore makes understanding of culture fairly simple, reducible to a pat set of beliefs, traditions, and taboos. Barth (1969) suggested that the boundaries between groups are salient to ethnicity, not the cultural content they enclose. He rejected the idea that ethnic identity is a collection of traits, in favor of understanding those traits that the actors themselves consider significant. How one identifies themselves, as compared to others, illuminates the boundaries that are salient to the social groups -- not

to outsiders. Larson (1992; 1996), however, challenged Barth's noted concept of ethnicity, by suggesting that boundaries cannot pre-exist content. Larson's approach to content is toward an understanding of the multiple roles and relationships within a social group from which common identities are forged.

By shifting our sight from inter-ethnic relationships at the border to intra-ethnic transactions at the center, the active roles of those consistently under-represented in traditional narratives emerges with greater clarity. In this light the process of ethnogenesis becomes a complex one in which contending and multiple purposes, intentions, interests and interpretations might be discerned. Ethnic groups no longer appear as monolithic blocks of identity confronting one another but as arenas where a common identity is both forged and debated (Larson 1992:5).

In his study of Merina ethnicity, Larson examines how the Merina themselves constructed a pre-colonial ethnicity in their interactions with the dominant economic forces of the late eighteenth century. His model for ethnogenesis can also be applied to understandings of Tanala ethnic identity in contemporary southeastern Madagascar. By examining the competing and communal interests and identities among forest farmers who now socially identify themselves as Tanala, but trace their ancestry to Betsileo, one can better understand Tanala culture, than by compiling inventories of cultural traits.

In the following chapter I detail the history of two lineages in the village of Ranotsara, and describe how contemporary social life is positioned around these lineages. I contrast this representation of social organization to that which is portrayed by the Ranomafana National Park Project. I conclude by discussing how the project's conception of social organization has shaped the health care it has provided to residents and understandings of health and sickness. I suggest that these health services and

perceptions replicate efforts by the colonial state to control populations and disregard the ramifications of policies to restructure the land and people of the island's forests.

Chapter 5

DIVIDING THAT WHICH CANNOT BE DIVIDED: ANCESTRY AND ETHNICITY IN RANOTSARA

As Erikson (1993:12) notes, "Only in so far as cultural differences are perceived as being important, and are made socially relevant, do social relationships have an ethnic element." The Ranomafana National Park Project regards agricultural practices as important and has focused on ethnicity as the divisive trait separating farmers. In this view, farming practices – ethnically distinguished – are regarded as relevant to conservation. But the residents themselves value ancestry, its associated caste, and access to material resources as more salient social divisions. These internal social differences in the village of Ranotsara supercede the boundaries of ethnicity, and form the core of social identity. The residents of Ranotsara, most of whom identify themselves as descended from Betsileo but living as Tanala, are united through their relationships to land and labor, while at the same time they are not so much divided by ethnicity as they are by economic differences.

Covell (1987:81) has discussed how ethnic identification in Madagascar has come to be embraced by Malagasy in efforts to access social benefits.

Another organizing principle of Malagasy society and politics is that provided by the non-class solidarity ties of ethnicity, extended family, and locality. These lines of division are not unrelated to economic differences,

and, indeed, much of the social and political importance of these groups comes from the use made of them as bases for individual and group protection and advancement. To a degree this cohesion rests on the belief that 'in unity there is strength', but the groups also form useful bases for the phenomenon Schatzberg refers to as social closure. This is 'the process by which social collectivities seek to maximize rewards by restricting access to a limited number of eligibles. This entails the singling out of certain identifiable social or physical attributes as the justificatory basis of exclusion (1980, p.28). Similarly, Bates argues that the persistence of ethnic groups does not rest on the attachment of their members to 'traditional' values, but that "Ethnic groups persist largely because of their capacity to extract goods and services from the modern sector' (1974, p. 471).

Yet ethnicity remains the prevailing social distinction made by outsiders, particularly the Ranomafana National Park Project, as it sets policy and negotiates access to economic resources and medicines. In this chapter I discuss the founding of Ranotsara, a village in the southeastern forests of Madagascar. From this founding two distinct lineages emerged. Descendants from these lineages comprise the present village population, and tensions between the lineages, rather than between ethnic affiliations, explain current land management practices, economic status, and "cultural" behaviors and beliefs regarding health and healing. As members of the different lineages gained or lost prestige and power with the social changes of the twentieth century, conflicting histories of the lineages unfolded. At the same time, the shared history of resistance to outside control over local resources and livelihoods has contributed to social alliances that transcend community differences. These alliances are particularly acute in terms of how residents perceive conservation policies and their association with health resources. As the history of class and caste in Ranotsara is told, a simultaneous history is told of how a national park entered into the lives and bodies of the residents of this small village. In so doing, ethnicity became reified as the fundamental boundary separating farmers from

farmers, and used to explain spiraling sickness and death amidst what has been presented as a wonderland of natural medicines and a biodiversity of planetary bounty.

The Founding of a Tanala Village

Time is not marked by clocks or calendars in Ranotsara, at least not with a rigid adherence (plastic digital watches having made their appearance). According to the villagers, people often live to be a hundred years old, a hundred and twenty, a hundred and fifty, or more. A year past might be a year past, as a westerner would mark it, but it might also be six months past or two years past. Time is instead marked by the seasons and the crops, and people are so busy living their lives according to the seasons and the crops, that they really haven't much time to mark the time. The past is *taloha* (in the past). And so it is difficult to know exactly when the village was founded, but it was agreed that it was founded sometime around the time of the French occupation, which began in 1895, when Madagascar became a protectorate of France (and a colony the following year).

The village was founded by two men, Rabiby, from the village of Ambatofady near Antananarivo, and Ramanjato, from the southwestern village of Analamena. Rabiby was of the Zafinaraina lineage and Ramanjato of the Zafindraraoto lineage. These two men established the village just under cliffs on a hill north of the current village, and named it Betsizaraina ("vast area that cannot be divided"). How close in time the men came is uncertain; what appears to be in agreement is that the *firenana* (lineage) of the Zafindraraoto lineage settled the area near Ranotsara first, which would make sense given that the Zafindraraoto lineage has a long history in the region. According to the elders of this lineage, and according to a project survey of the region (SAFAFI 1989), these

founders were Betsileo *hova*, in other words, they were free men who came from the high plateaux. This status is important in understanding present land use patterns, and will be discussed subsequently.

Why they came is also unclear, but according to Faly, *mpanjaka* of the Zafindraraoto lineage in Ranotsara, his ancestor married and came from near the capital city of Antananarivo, migrating little by little before eventually settling in the present region. Faly emphasized that his ancestor was *hova*, but was not Merina. He wanted me to understand that the people of Ranotsara do not like the Merina. This point, and the way that he emphasized it, led me to believe that it was probable his ancestor migrated to avoid Merina (or Merina-influenced colonial) autocracy, which included the forced labor of *fanompoana* and taxation. At any rate, Faly was certain that his ancestor did not flee the highlands due to any wars. The other lineage that founded the village is the Zafinaraina lineage, which were said to be *andriana*, or noble caste.

According to elders from both lineages, the Zafindraraoto were adept at swidden horticulture. Because the Zafinaraina came from regions with land more suitable to pasturage and irrigated rice agriculture, they did not know how to farm the hills in this new terrain. As such, the Zafindraraoto taught them the technique of *tavy*, while the Zafinaraina showed the Zafindraraoto how to farm the limited flat lands at the base of the village.

The village moved, however, sometime during the early part of this century. It is not exactly clear whether the move was in association with colonial policies, but the explanation for the village's new name, Ranotsara, which means Good Water, is that at the old site, there was only one nearby river source, and the villagers used that for cooking,

bathing, and drinking. They also used it to dump the old mats on which corpses lay decaying, and the old cloths they were wrapped in.

"Everytime someone died," Koto, an elder of the Zafinaraina lineage told me as we sat in his home eating boiled manioc, "there was a rush to the river so people could get their cooking and drinking water, and take a bath, before the *tsihy* [grass mats] were thrown in the river. So after the village moved, the *tsihy* were taken to sacred spots in the forest, and the river was clean."

Because the Zafindraraoto had settled the area before the Zafinaraina, they became the *tompontany*, or masters of the land. As such, to thank the Zafinaraina for teaching them the technique of wet-rice agriculture, according to Faly's younger brother, Tojo, the Zafindraraoto gave to the Zafinaraina some of the finest flat lands available in the new location, while they, too, took many flat lands but also retained some of the finest *tavy* fields, where their crops would be protected from cyclones, and where their skills were best perfected.

This account has been pieced together from discussions with several elderly informants from both lineages, and includes contradictory and ambiguous histories. But based on my knowledge of the history of the region, and based on their consistent reports that the Zafindraraoto gave the Zafinaraina land to thank them for teaching them farming techniques, I believe that this account is fairly accurate. It is particularly important in understanding that it is not the ethnicity of the two groups that determined which lands they farmed, nor in which manner, but it was lineage and experience.

The villagers were unanimous in asserting that both groups adapted the Tanala way of living, while maintaining ancestral connections to what became known as the Betsileo.

The two lineages led to two types of *mpanjaka* [village chief, literally, "one who governs"]. These are the *mpitan-tranobe* [guardian of the big house] and the *mpitan-kazomanga* [guardian of the hazomanga -- a sacred wood]. The *mpitan-tranobe* is the *mpanjaka* of the Zafinaraina lineage, which, as mentioned previously, was regarded as a long-established lineage of *andriana* (royal) descent. The *mpitan-tranobe* was also a *mpitan-kazomanga*, but because they were not *andriana*, the *mpanjaka* of the Zafindraraoto lineage was not regarded as a *mpitan-tranobe*, but was recognized as guarding the sacred wood of its lineage.

During my fieldwork, the position of *mpitan-tranobe* was held by Liva. Liva was said to be in his 60s, a fact that led to much scandal when he, a widower, married a young woman of 16. When his house was destroyed in a cyclone in 1994, rather than having it rebuilt, he moved to a remote location some two kilometers distant, where he and his new bride established their own family in a lone hilltop house surrounded by sugarcane and overlooking the mountains, a river, and the radiant green rice fields of his family.

"I left [the village] because there are so many *andevo* [slaves] in Ranotsara that no one is fit to guard the *hazomanga* [of the Zafinaraina lineage]," Liva explained.

The label of *andevo* is a strong one in Madagascar. To be descended from slaves marks one a social outcast, unsuitable for marriage among those of *hova* or *andriana* ancestry. While it is true that there came to be two classes of slaves in Madagascar,

andevo mainty [black slaves, prohibited from marrying outside their caste, or owning land], and *andevo fotsy* [white slaves, similar to indentured servants who could buy their way out of servitude], any rumor of being descended from slaves is ruinous.

Yet Liva's allegation, while he would not elaborate, became an allegation I was to eventually hear repeatedly. Indeed, as more and more people of both lineages died, it became common rumor that the reason for the deaths was that there were so many *andevo* in the village. How is it, then, that Ranotsara, said to be founded by two lineages, one of free people who, as masters of the land, granted to the Zafinaraina prized agricultural lands, is now cast as a village of untouchables – a lineage descended from slaves – whose intermarriage with the royal Zafinaraina has cursed the village with sickness and death, and whose cohabitation with the royal descendants has rendered the original masters of the land landless – laboring for wages approximating thirty cents a day on lands that they themselves are said to control?

This puzzle is at the heart of sickness and environmental change in Ranotsara.

Caste and Class in Ranotsara

As stated in the foregoing, the village was founded by two men – Rabiby, of the Zafinaraina lineage, and Ramanjato, of the Zafindraraoto lineage. Sometime around 1915 Rabiby's grandson, Ramitsiry, married Ramanjato's daughter, iKalahafa. Their youngest son, Tody, is one of the oldest men in the village, next in line to be *mpanjaka-be*, should his cousin Liva die before him. As such, Tody is respected as a *mpanjaka* in the village, while Liva lives *an-tsaha* (away, near his *tavy* fields).

The marriage of Tody's father, a Zafinaraina, to a woman of the Zafindraraoto lineage is said to have brought a curse to Ranotsara. Indeed, one well-respected elder alleges that the marriage was one of royalty to a slave -- that iKalahafa was *andevo*, and by allowing such a marriage, and worse, burying Ramitsiry in his family's tomb despite his fall from grace, the union has cursed the village ever since.

Things were hardly made better when two of Rabiby's granddaughters followed suit, with Nirina marrying Ramanjato's grandson Faly, and her sister Bely marrying Faly's brother Sabo.

Nirina is now an old woman; sometimes she says that she is seventy years old, other times she thinks that she is maybe ninety. She has a face woven in deep lines and a strong, straight body that moves slowly, as if in pain. Her eyesight is poor, she can no longer see the stones in the rice or the rats in the dark, but her eyes are alive. Her expressions change like lightning with more toothless grins and howling heckles than a cartoon character, her brain even more animated, and her arms and her back and her neck nearly as strong as any man's.

Nirina explains that she had known Faly since they were children, and they were always very close, although they grew up in separate villages. Because it was her mother who was Rabiby's daughter, Nirina was raised in her father's village, while she retained family ties to Ranotsara. When she grew up, she married a man she no longer speaks of, and they moved to several cities in Madagascar, including Tulear, a French colonial port. As such, Nirina became a woman of the world, and when her marriage ended in divorce, she returned to Ranotsara and married her childhood friend, Faly.

"My grandfather was one of the first men to build a home in Ranotsara when it was over there," she gestures toward the hills of the enclosed Ranomafana National Park. "Because of this, my family wanted me to guard the *hazo-manga*," she explained, referring to the succession of *mpanjaka*, "but I did not want the responsibility. So to appease the people, I married someone who could guard the *hazo-manga* for his own lineage. That is why I married Faly." Nirina's explanation for her marriage to Faly as merely for the sake of propriety was never very credible – they were extremely close, the best of drinking buddies who constantly joked and bickered among themselves with unashamed pride in each other. However, while it is not common, women can be chosen for the honor of *mpanjaka*, and so her comment is at least an interesting one.

Nirina and Faly had one child, who died in infancy. Nirina was unable to bear children afterwards, and so they adopted a son, Andre, as their own.

"They never had any more children," an elder explains, "because the marriage was *fady* [taboo]. Nirina is *andriana-be* [very royal], her grandfather founded the village. She displeased the ancestors when she married an *andevo*."

Her sister Bely was said to have been equally cursed, not only losing an eye, which Bely said grew bigger and bigger until it exploded, but suffering from *salamanga* as well. *Salamanga* is a very rare spirit possession disorder, which, it is said in the neighboring village of Ambodiaviavy, afflicted her when she defied the ancestors yet again by failing to become an *ombiasa* as they wished for her. Her life in poverty and the many deaths of her family members were the prices she paid for transgressing the social order and marrying the descendent of a slave.

But did Nirina and Bely marry the descendents of slaves, as is commonly whispered in the village? Did Ramintsiry marry into the *andevo* cast as well? And does it really matter? I suggest that they did not marry into slavery – if, indeed, iKalahafa, Faly, and Sabo had been descended from slaves, the marriages would not have been allowed to take place, and when deceased, Raminstiry and Bely would not have been buried in their ancestral tomb afterwards, as they were (and the elders of the village concurred that Nirina will be buried among the Zafinaraina as well). And if the Zafindraraoto lineage was indeed descended from slaves, it is unlikely that they would have amassed so much land. Finally, and most importantly, there is no record of the Zafindraraoto lineage being anything but *hova*.¹

Recasting the Zafindraraoto as *andevo*, however, might helped to justify present economic relations in the village. Ramitsiry and iKalahafa had two sons and four daughters. The youngest son, Tody, is already one of the eldest men in the village, as has previously been mentioned. But their eldest son, Lahy, since passed away, married Sely, an elderly woman who wants as little to do with foreigners as possible, recalling very clearly the many waves of *vazaha* who have come to their village to "help," first during the colonial years when she was a young mother in Ranotsara, later with the Ministry of Forests and Water to control *tavy* farming, and most recently, with the Park. Now she lives with her youngest son and oversees the family's affairs, leaving it to them to deal with the outsiders.

¹ Hanson (personal communication 1999) who has conducted extensive historical research of the area, including the Zafindraraoto lineage, has also indicated to me that he has never heard of this lineage being associated with *andevo*.

For reasons that remain unclear, Lahy had been selected by the colonial officers in the region to receive coffee and banana trees. As such, he not only had the cash-crop colonial concessions to control, he had also been in a position to purchase many cattle, and to hire highland migrants to work his fields. These factors alone do not account for the current status of his family, but did lay a foundation.

Lahy and Sely had three sons and three daughters. As the eldest, Koto received the best farming lands of his family. Among these lands were many irrigated rice fields, passed on from his ancestors, who, as Zafinaraina, had received the flat lands from the *tompon-tany* [masters of the land], the Zafindraraoto. Koto managed these lands with care, and received many cattle from his father which he also managed with care. He also cleared his own *tavy* fields, and as his cash resources increased, he purchased land from others in Ranotsara. As discussed in the previous chapter, the sale of land was not customary; nonetheless, as the shift to cash crops contributed to a decline in subsistence crops and economic differentials, it became more common for land to be sold during cash shortages.

Koto's youngest brother, Rivo, was similarly positioned with favorable lands and many cattle. The brothers were both blessed with keen business sense, the willingness and energy to work hard, and the particularly useful skill of working well with outsiders.

Their sister, Baovita, had a son, Pascal, who the brothers soon recognized shared their entrepreneurial vision and even spoke a bit of French. While he did not have the lands or cattle of the two brothers, Pascal's outgoing personality, business sense, and best of all, his marriage to Rahasoia, a school teacher, provided him with the essential access to

outside channels that the brothers needed to take advantage of outside resources and the ever in-coming *vazaha*.

Another brother, Lita, received prize lands from his father, and worked as hard as his brothers. But as his eyesight began to fade and blindness seal his fate, Lita kept more and more to himself. Unable to engage in business, unable to work, it was left to his wife, Soa, and their eldest children, Ketaka, Chantelle and Lala, to farm the lands.

Eventually, Soa and the children could not maintain the irrigated rice production. In the generations past, these responsibilities would be shared by other family members. But in the recent years, the rapid inflation, accompanied by a number of cyclones, led to rice and cash shortages. These factors, integrally linked to structural adjustment policies and an in-flux of international development projects, enabled the three men to capitalize on the economic changes affecting the village.

Koto describes these years, from 1985 to 1987, and again in the early 1990s, as a difficult period when his own economic situation declined, and further frustrated when he broke his back and could no longer work his fields. As such, he was forced to sell all of his cattle, and he transferred his lands to his children. His son, Philippe, a young but equally sharp business man, took his place managing the family lands.

Koto indicated that it was during these years that people throughout the village stopped helping each other out. "In the past, if someone died, everyone contributed to the cost of the cow or rice. Now, only the family contributes. This changed during my generation; from my father's generation, only Tody is still living."

In the mid to late 1980's, as rising prices (associated with structural adjustment, the Gulf War, and the influx of *vazaha* with the coming of the park) and severe cyclones

led to rice and cash shortages, Rivo, Pascal, and Philippe helped the villagers by loaning rice and cash, in exchange for repayment in double the following year. As such, many people found themselves in debt to the three men, while the three men grew prosperous.

When the *vazaha* came to Ranomafana to construct the JIRAMA dam, the three men, led by Rivo, organized village men to construct housing for the outsiders. And when the park project came to the village, as will be discussed subsequently, the two brothers were among the first to accept the new policies, rallying to receive the outsiders. Their seeming eagerness to embrace the new policies and embark on new farming techniques, along with Ranotsara's close proximity to the forest and its relative proximity to Ranomafana, made the village appear particularly appealing to the project officials and so it was subsequently selected as a pilot village of the project. By being designated a pilot village, the residents were assured that through assistance to these open-minded men, they would receive development assistance in the form of fish for stocking fish ponds, beans for a woman's cooperative, cement and roofing for the school, and seeds for farming irrigated rice. With Rivo, Philippe, Pascal and his wife, Rahaso, taking charge of distribution, these resources, often intended for the benefit of all the residents, remained a subject of village gossip as to where the products ended up.

As people could no longer keep up with the spiraling cost of living, and as their rice was being used to repay prior years' debts, they were no longer able to produce enough rice and other crops to live on. Consequently, according to a number of villagers who rented out their lands, Rivo, Pascal, and Philippe, offered landholders up to

50,000FMG (approximately \$12.50 at the time of my fieldwork) to rent their fields for a period of three years.²

This plan was most logical for those of the Zafindraraoto lineage because not being related to the four men of the Zafinaraina lineage, they could receive, along with the cash advance, the opportunity to continue working the fields for daily wages of up to 30 cents a day, plus a daily meal. This strategy enabled the most impoverished residents to ensure their survival, while not entirely relinquishing their rights to their land, which they could receive three years later when times were better or, if no better, renew the lease for additional cash. It further enabled Rivo, Pascal, Koto, and Philippe, to manage the dirty business of securing fertilizers, chemical inputs, seeds, and other goods from the *vazaha*. By working for the four men, the villagers were assured that rather than being subjected to the rule of outsiders, the outsiders would provide resources to the village, because Rivo, Pascal, and Philippe knew exactly how to negotiate with this old breed. And, no matter the unequal access to resources these men had, they remained family (intermarriage having cast everyone in some type of obligatory relationship); there are limits to the domination family members can exercise over each other, whereas history had shown that no such limits extended to *vazaha*.

Thus, while so many of the Zafindraraoto lineage surrendered their lands, if only temporarily, those of the Zafinaraina lineage did not necessarily need to do the same, because by sending one or two sons or daughters to help out on their relative's land, they

² One informant indicated to me that if a person failed to repay the debt, the lender would take the person's land. This comment was not collaborated, nor was it clear if the land would be permanently or temporarily seized. I neither doubt the statement nor disregard it, without further evidence.

were supporting their relatives' growing wealth, and in so doing, indirectly ensuring their own future protection. After all, in a village of thirty households, there weren't many fields held by the Zafinaraina lineage that didn't already belong to one of these four men or their immediate family.

But not all of the Zafinaraina lineage could afford the luxury of retaining their land. Some, such as Lita's family, simultaneously rented out their lands, and provided gratuitous child labor so that they could benefit from both the immediate cash provisions of renting out land, and the long-term protective welfare promised by the kin network.

As the Zafindraraoto rented out more and more of their fields, or worked as wage laborers for the Zafinaraina men, it came to be that in every Zafindraraoto household there were no longer enough people to work the fields that were not rented. It is in this way that the majority of the land and labor shifted from the Zafindraraoto to the Zafinaraina and, I believe, that the recasting of the Zafindraraoto from *hova* to *andevo* began to be whispered about the village.

Another significant change linked to the international economy contributed to land consolidation in Ranotsara. From 1993 to 1994, the national government promoted land titling in the Ranomafana region – in accordance with World Bank efforts to privatize land holdings and thereby presumably encourage conservation. Hanson (1997) suggests that the land registered with Madagascar's *Service de Domain* under this privatizing campaign was almost all wet rice fields (Hanson 1997). Moreover, because in order to register land, one had to pay an initial registration fee and annual taxes, only those with the most cash income were likely to participate.

Rivo, Philippe, and Pascal were in the forefront of privatizing land during this period. Rahefa recalls how the land he had inherited from his father, Faralahy, was lost in this way. Before Faly became the *mpanjaka* of the Zafindraraoto lineage in Ranotsara, his elder brother, Faralahy held the position. Faralahy passed on some of his *tanim-bary* [irrigated rice land] to one of his sons, Rahefa; the remainder of his land he sold to Philippe when the economic crisis of the late 1980's impoverished him. Rahefa went *antsaha*, that is, he went to farm some distant *tavy* fields, and while gone, he rented his irrigated rice field to Rivo. Rahefa alleges that Rivo then registered the land in his own name; when Rahefa returned to Ranotsara, he said that he discovered he no longer owned the *tanim-bary*. Rahefa indicated that although there are indigenous methods of arbitration through the *fokonolona*, he decided not to challenge Rivo, due to the latter's wealth. He indicated that he feared Rivo's position in the village and that the Zafinaraina lineage had become much more powerful than Rahefa's own family of Zafindraraoto *mpanjaka*.

Others in the village echoed this concern. For example, Liva, *mpanjaka-be* of the Zafinaraina lineage, reported that the strength of the *mpanjaka* was diminishing, and that this decline began during his brother's reign as *mpanjaka* (I am not sure when his brother assumed the position of *mpanjaka*, but he died sometime around 1993). As an example of how power was shifting in the community, Liva indicated that when I arrived in the village and asked permission to reside there, I was brought first to the home of Rivo, and later to the home of Pascal; it was these men who granted me permission to reside in the village. Rivo assumed authority in the matter of my residence, and acted as contractor for the building of my house. What he should have done, Liva indicated, was asked permission of

him, as *mpanjaka-be*. He did not, because my residing in the village was viewed as an economic opportunity, and hence, the local entrepreneurs took charge.

Liva's report was certainly an accurate account of my experience. It was not until I had moved to the village and the house was completed that I was even told of Liva's position; while Faly and Tody were introduced to me as the *mpanjaka*, they took no initiative in any dialogue and deferred to Rivo, Faly later telling me that his own authority had significantly diminished with the emerging wealth and social skills (in dealing with *vazaha*) of Rivo.

Faly indicated that the role of the *mpanjaka* had changed in many ways in recent years. For example, he indicated that when he first became *mpanjaka*, if a person wanted to clear a new field, he could not do so until he first worked on the fields of the *mpanjaka*. Faly's son, Andre, added that in past generations if a person wanted to clear a new field, they had to ask permission of the *mpanjaka*, but with the increasing land shortages of the last decade, they no longer asked permission, unless as a formality. "Now the land belongs to all the people," he said, suggesting that ancestral land associated with a lineage was disappearing in favor of a common property regime which a select few have been controlling.

Rather than challenging the local appropriation of land and power, Faly and many others chose instead to accept it, in order to reap direct and indirect benefits in this period of social change. Faly told me that he felt he had very little power to change the situation, yet he recognized that Rivo and the others could provide a relatively reliable conduit to the resources of outsiders. By resisting the temptation to invoke his authority as *mpanjaka* and accuse Rivo and his kin of enriching themselves by appropriating resources

(such as rice provided by the national government after the cyclone, beans provided by the project for a woman's cooperative, and materials provided by the project for repairing the local school), Faly and his wife, Nirina, chose to work with and for Rivo. By conferring unspoken approval upon the activities of the village's entrepreneurs, Faly was able to exercise continued and unchallenged authority over Rivo in non-economic matters of the village, avail himself of wage-work when needed, and not have to worry about dealing with *vazaha*.

In contrast, Rivo's own elder, Liva, left the village rather than continue in a role he found to be ceremonial only.³ Tensions between himself and his kin continued, while he continued to invoke his authority as *mpanjaka-be* and elder of the Zafinaraina lineage in order to position himself close to those in real power, and more importantly for Liva, contrast his own lineage to that of Faly. Insisting that the Zafindraraoto were *andevo*, he maintained that his own position was the highest in the village and his own ancestry the most pure. Not only did he claim an historical right to his title as *mpanjaka-be*, by excluding himself from the village, distinguishing his lineage from that of Faly, and associating at a distance with Rivo whom he pointed out was descended from a union with *andevo*, Liva claimed a moral right to his title because he was one of the few in the village who remained uncontaminated by the lineage of the inferior "other."

³ Since leaving the village I have learned that Liva planned to return to the village because the ancestors had been displeased by his departure; he had hoped that in so doing, there might be fewer deaths.

Accessing Health Resources

In addition to seizing land and power in the village, the leading men of the Zafinaraina lineage have also assumed authority over health care in certain respects. While Rivo and Koto are respected for controlling an indigenous treatment for measles that is provided annually to the children of the village, Rivo and Pascal, by way of their frequent trips to Ranomafana, access to cash, facility with outsiders, and, for Pascal, marriage to the school teacher, have acted as spokesmen for the village in negotiating access to health services provided by the Ranomafana National Park Project (discussed subsequently). In this way the men of the community, rather than the women, have central roles in accessing western health care, with the exception of Rahasoa, a school teacher whose position (and marriage to Pascal) have enabled her to play a strategic role in accessing, controlling, and dispensing medicines. Men's physical strength is another factor contributing to their important role regarding health care. Because it is difficult to carry a sick child or adult across rivers and hills to reach health services in Ranomafana, Ifanadiana, or more distantly if necessary, men's work determines in many cases whether or not a person receives such care. For example, on many occasions Rivo or Pascal's frequent trips to Ranomafana included picking up medicines for themselves or others, or even carrying a sick or wounded person to the clinic. Conversely, to those who worked for wages, such a trip meant loss of wages. There were a few occasions when I compensated a family for these lost wages so that a child or adult would get treatment promptly. Had I not done so, I am certain that the family would have delayed or disregarded treatment to avoid losing wages that were so necessary to survival.

Despite the ability of certain men to access health services in Ranomafana and elsewhere – services which, as I have discussed in Chapter One, are appallingly inadequate and likely in many cases to worsen one's health – the poverty of everyone (for even the land rich residents have limited food and cash), combined with an unhealthy environment, extremely demanding work loads and geographical isolation, contribute to poor health for all village residents. Yet, the consolidation of economic power has enabled certain village residents to maintain a ready supply of pharmaceutical medicines for treating respiratory disorders and fevers, while the rapid decline in economic status of most residents, and the associated decline in their nutritional and health status, has contributed to a growing dependency upon forest and local indigenous medicines for others in treating these same illnesses, though they are more likely to seek treatment only when these illnesses become acute or interfere with work. Moreover, differences in age, gender, and religion have also shaped how health resources are viewed and obtained.

To understand how health and healing are conceptualized differently by residents within the same village, and how lineage has become fundamental to these differences, I turn again to history with a discussion of how the 20th century land and social changes, discussed in Chapters Three and Four, have shaped health and health care in the forest regions of Madagascar.

Changes in Health and Health Care

The population of Madagascar had declined significantly throughout the late nineteenth century, and this decline was tied first to the *fanompoana* labor of the Merina autocracy (leading to famine and disease) (Campbell 1992), and second, to the colonial insurrection (Antananarivo Annual 1898). Campbell (1992) indicates that the declining population of the late nineteenth century was preceded by a fifty per cent annual fatality rate among soldiers of the imperial (Merina) army, and several smallpox epidemics from the early and mid-1830's. These losses were primarily centered in the highlands, but contributed to population migrations to forested and coastal regions as people sought to escape servitude, death and illness. The losses of the latter part of the century, however, were more far-reaching, affecting people in the lower highlands, particularly those now identified as Betsileo, as well as the forested regions where rice production declined. Campbell (1992) notes that the pre-colonial autocracy of the Merina empire contributed to the population losses associated with colonialism. Challenging the view that the violence and social dislocation associated with foreign incursions into Africa created such ecological disturbance that catastrophic human and animal diseases ensued, Campbell argues that natural causes only partly account for disease and famine in Madagascar during the late nineteenth century. More salient, he suggests, is the extreme *fanompoana* labor imposed during the precolonial Merina autocracy. This cycle of disease and famine also contributed to demographic change.

. . . . The birth rate in Madagascar was profoundly upset by the adoption of *fanompoana* from the mid-1820s. *Fanompoana* decreased income opportunities for young adults, which probably resulted in a rise in the average age of marriage and in depressed fertility, and it involved long periods of harsh physical labour, with inadequate rations, which delayed

puberty and altered ovulatory cycles in women, thus depressing fertility, as well as increasing the incidence of miscarriages (Nurse, Weiner & Jenkins 1985:253-254). Traditionally, women worked harder than men and their burden increased from the adoption of autarky, notably in the gold fields from the 1880s (Campbell 1988a, 1988b, 1988c). Thirdly, the frequency of conception was reduced as *fanompoana* often separated men and women and, in order to spare the future generation from *fanompoana* some couples probably limited their family size through practising abortion and, despite the royal ban, infanticide. Decary (1947-48:30) and Sibree (1924:253) estimate that infanticide was responsible for the deaths of 14.29 and 25 per cent respectively of Malagasy babies (Campbell 1992:420, 421).

Campbell further suggests that the spread of *fanompoana* labor contributed to the rapid spread of venereal diseases, particularly in male labor camps, and to women's increasing employment in prostitution.

As in mainland Africa, the declining health of the Malagasy people was of great concern to the colonial state. Because colonial labor policies necessitated an abundant and healthy labor pool, demographic factors such as population losses, either from death or migration, were directly linked to political concerns.

Therefore, to augment the shrinking population in order that the labor pool available to the colonial state be steady throughout the twentieth century, the colonial government established medical hospitals, dispensaries for Western pharmaceuticals, and medical schools for training Malagasy (urban, elite Merina) in Western medicine. The *Antanananarivo Annual*, a nineteenth century journal published by the London Missionary Society, described in detail the colonial objectives of increasing the Malagasy population. Central to this policy was a form of social engineering, in which the Merina (aka Hova) of the highlands were identified as a distinct race which was superior to the populations of the highlands.

The first matter noticed is the small amount of the population of Madagascar compared with the great extent of the island, there being probably only 6.6 inhabitants to a square kilometre. The next point is, that the Hova race appears to be the only one capable of furnishing the population of the future and sufficient manual labour. "In one word, it is the Hova race which is the superior one of Madagascar, the one which, by its commercial instincts, its desire for comfort and its love of gain, and its ability to work, is destined to spread itself more and more over the entire island, to absorb the other peoples, and to give our colonists intelligent and trained assistants, if we take all the necessary measures to encourage the development of this population." . . . In order to promote the fecundity of the Hova race, which seems an undoubted fact in the past, the General proposes to use a number of different measures; and these he groups under five heads, as follows:--(1) legal, (2) administrative, (3) hygienic, (4) political, and (5) fiscal (Antananarivo Annual 1898:247, quote uncited).

Legal measures included promotion of marriage, including exogamy and inter-caste marriages, fines for divorce, and "the strict application of punishment" (ibid:247) against women practicing abortion. Moreover, as *fanompoana* gave way to "prestation" or unremunerated labor for the colonial government, all men "legally" married were exempt from service if they had five or more children, while "young Hovas legally married and the fathers of one child will be exempted from military service" (Antananarivo Annual 1898:248), and families with at least seven children were provided with free education for one of these children. Men who reached the age of 25 years and women of 21, and who were not married, were taxed. Moreover, a "Children's Fete" was instituted in which large families were honored, with money and gifts presented to such families and the parents provided with "prominent positions" (Antananarivo Annual 1898:248). In these ways, the colonial government promoted early marriage and large families.

Another important administrative measure taken to increase the agricultural labor supply was to promote *tavy* production. Attributing the abolition of slavery to declining

agricultural labor as freed-slaves became porters, the colonial state took the position that tying people to land would promote agricultural production:

Owing to the rapid formation of roads practicable for carriages, porters' work will gradually be less needed; and it will be desirable to increase the number of natives who hold land. In all cases, however, holders must be obliged to cultivate (Antananarivo Annual 1898:248).

Finally, increasing the health of the Malagasy was considered paramount to augmenting the labor supply.

Under the heading of *hygienic and medical measures*, it is noticed that notwithstanding the efforts of the various missions, the laws of health are still very imperfectly understood by the Malagasy, especially as shown by their non-use of warm clothing in the cold season of the year, the want of sanitary arrangements, and the prevalence of certain diseases. The causes of sterility, and of the high rate of infant mortality, are pointed out, as well as remedies for this in the spreading of medical knowledge, and the formation of hospitals, dispensaries, and medical schools. Drunkenness should be severely punished; and it is necessary that popular and simple tracts on medicine and hygiene should be prepared and widely circulated among the people.

Campbell (1992) indicates that the introduction of Western medicine through the Protestant missionary societies (who used medicine as a bargaining chip to convert people) and its promotion by the colonial government, had significant effects on the use of indigenous medicine as well. In the mid-nineteenth century, as *fanompoana* labor led to widespread death and disease, and as traditional medicine proved inadequate to combat such health problems, many Malagasy were drawn to the Western medicines being introduced by the missionaries.

But after 1870, several social and natural events contributed to an even sharper increase in death and disease. The population circulations associated with *fanompoana* labor, in which people from the malarial zones of the coasts and forests moved freely in

and out of the highlands, brought malaria epidemics to the highlands. In addition, as men were forced to labor for others, their own irrigated rice fields were often left idle, creating breeding grounds for the anopheles mosquito in the lowlands. Finally, unusually wet weather made an additional contribution to rising malaria epidemics throughout the island. Another factor which Campbell points to as facilitating the spread of disease during this period was the introduction of new disease brought by European steamships as trade between the Merina kingdom and Europe increased.

Among the Betsileo of the southern highlands, impoverishment and famine were compounded by particularly cold winters for which the people lacked adequate clothing, leading to severe respiratory infections. As the Betsileo region was particularly hard hit, many groups migrated toward the southeastern forested regions.

Campbell (1992:422-424) comments on the effects of this migration:

This combination of climatic and dietary factors, accentuated in forced labour camps by insanitary conditions, facilitated the spread of disease. . . . Thus, in overall terms, a plateau environment traditionally considered healthy was, from the late 1870s, transformed into one wracked by unrelenting disease and famine. This change, following hard upon the adoption of Christianity as the imperial religion, tested to the limit the ability of the latter, in the form of its preventative and curative prescriptions, to meet the crisis. Of notable importance in this were Western medicines and the *taratasy* [paper, in this instance, the Bible], the most powerful of Christian talismans.

Because the new medicine could not combat the escalating death and disease, many Malagasy returned to using indigenous medicines, but rather than abandoning one for the other, they integrated Western medicine with the indigenous pharmacopeia to increase the medical options available to them (Campbell 1992:35). Rather than perceiving the curative power to be inherent in the medicine, however, successful cures

were attributed to the power of the indigenous healer. This resurgence of faith in indigenous healing coincided with a revival in "traditional" ceremonial rites related to health and well being, as well as an increase in spirit possession.

D. Peters (1994a), however, points out that while missionaries condemned the practice of indigenous medicine, particularly the role of the *ombiasa* in health care, the Protestant and Catholic churches promoted differing views regarding health care. Speaking specifically to the Ranomafana region, Peters notes that the Catholic church is the oldest church in the area, whereas the Lutheran church has been gaining greater popularity in recent years. With its own reverence for icons and chanting during worship, the Catholic church did not overtly condemn the practice of *ombiasa*. As such, Catholicism provided a greater opportunity for syncretic medicine to be practiced.

Conversely, the Lutheran church openly condemned the practice of *ombiasa* and forbade its followers from seeking treatment from indigenous healers, while promoting religious-based healing sessions as an alternative to *ombiasa*. D. Peters (1994a) notes that rather than being successful in this effort, people began visiting indigenous healers covertly, and insisting to outsiders that they did not practice indigenous medicine.

As these shifting strategies toward maintaining health care paralleled the demographic distribution of disease, the political and administrative policies of the colonial government to augment the labor pool proved effective. By 1941, however, the increasing population contributed to the rice shortages discussed in Chapter Three. This was because reproductive control of men and women, accompanied by the introduction of Western drugs, vaccines, and health clinics, brought larger families and lower mortality.

At the same time, the focus on cash crop production left less land available for subsistence rice production. To offset the impoverishment associated with the rice shortages and subsequent revolt in 1947, *tavy* production was intensified (Hanson 1997).

Free Western medicines, well-supplied health clinics, and Western-trained health practitioners remained available to the Malagasy of the Ranotsara/Ranomafana region throughout the colonial years. With liberation from colonial control, however, these services were reduced. By the late 1970's, they were further reduced when the Democratic Socialist Republic of Didier Ratsiraka shifted its social policies to the urban sector, at the neglect of the rural sector. Structural adjustment policies of the mid-1980s further limited funding available to the rural health sector. As such, by the late 1980's when the Ranomafana National Park Project made its appearance in Ranotsara, via a visit from the Principal Investigator for the project, the residents were eager to accept the health services she assured would come their way.

Older residents, who had been born and raised during the period of colonial rule, were among the most resistant to further encroachment on their land and lives by outsiders, but also the most enthusiastic about receiving the type of healthcare they had once been accustomed. Granted, the relative isolation of their village, their low social and economic status, and their disaffection for colonial agents influenced the quality of the healthcare they had received during those years, but unlike their younger relations, they had become familiar with the rapid and effective cure many Western medicines had provided them. Women, who had been the targets of maternal health services⁴ were also

⁴ Very few of the older women had ever given birth at home, recalling (with ambivalence) hospitalized births they found much safer, if not consistent with their

among the most anxious for "modern" health services for their granddaughters. Both men and women, however, shared a strong desire for strong and efficacious medicines for their babies and children. Younger people, who had been born and raised during the 1970's and 1980's, had no memory of such medicines, however. For them and their babies, sickness was a way of life.

The age and gender distinctions influencing one's view of medicines, and more importantly, the history of land appropriation, forced labor, cash-crop production, migration and reproductive control, played no part in the health research initiated by the Project. Indeed, as one anthropologist involved in the Project's first health survey indicated to me, her repeated appeals to project administrators to disregard ethnicity in favor of exploring more salient historical and social correlates to health, were completely dismissed and her own efforts to do so cut short with her termination from the project (Hardenbergh 1998, personal communication).

Conceptualizing Ethnicity and Health

Prior to and during the first phase of the project (1990 to 1993), the project sought to gain cultural understandings relative to health care through the collection of sociocultural baseline data. Hanson (1997) alleges that it was in the methodology of this data collection effort that categories of ethnicity became set in stone. He suggests that attempts to accumulate data on "households" were based on assumptions of what constituted "typical" Betsileo and Tanala households.

indigenous beliefs. In contrast, only one woman of child-bearing age acknowledged to me that she had had a hospital birth, all others giving birth on the dirt floors of their homes.

In almost every one of these studies, resident peoples were first constructed along ethnic lines. Thus, people were defined as being of either the Betsileo or Tanala ethnic group. . . Building upon this ethnic basis, a set of standard sociological categories were used to further define the household, its occupants, and their role in local and more global markets. . . .

. . . . Kightlinger et. al., employed an even more detailed list of "economic and social factors that either influence or reflect the health of the individual and community" (1992:1). The *tanana* of Ambodiavaiavy figures prominently in this study and is constructed along the following lines: age and sex distribution, population count, knowledge of birth date, number of children born to female household heads, ethnic makeup of marriages, marital status, occupation, religious identification, literacy rate, educational level, house construction profile, households with broken or functional radios, sources of drinking water, distance from drinking water source, use of boiled drinking water, fecal disposal, distance of promiscuous defecation from household, disposal of household garbage, crop calendar, hectares of land under cultivation, distribution of land under cultivation, cattle and hog husbandry by household, distribution of chicken and other fowl, children's growth rates, comparison of child wasting, stunting and low weight, prevalence of malaria, intestinal worm infection rates, rates of scabies infestation, death circumstances of children, immunization coverage, frequency of alcohol consumption, and tobacco use. The data gained concerning the above categories are given visual in the report via neat graphs. Reduced to a graph, the average Ambodiavaiavy 'villager' is now defined according to a number of standardized categories which can be compared cross-culturally and fit within a global socio-economic development information pool (Hanson 1997:90,91).

In conjunction with this data collection effort, and not at all clearly separate in the views of most villagers, the project promised health care to the residents of the original 26 pilot villages surrounding the park. This health care was represented as a traveling health team, consisting of a physician, nurses, and midwives, who would diagnose and treat illnesses and injuries, and provide pharmaceutical medicines. To the residents, the only "link" necessary between the park and their health that was at all relevant to this offer, was that if they gave up their land, they would receive much-needed health services as compensation. To the project, however, a link between the objective of conservation and

the strategy of development had to be made intellectually. As such, in terms of health care, by the time the second phase was being designed, the only link between the two domains that the project perceived was in the control of reproduction. The Director of Conservation during the project's second phase, was adamant on this point in his personal communications (1995-1996; recorded in field notes) to me, suggesting that the only responsibility of the project to health care was to control population growth so that *tavy* would decline.

Therefore, as Tanala farmers were considered the primary *tavy* farmers, the objective of the project became to control reproduction of Tanala women. Under the guise of providing maternal and neo-natal health care, the project employed "midwives" who had no training in prenatal or neonatal care, or in delivering babies. They were trained to dispense birth control pills and condoms. Indeed, when a physician and midwife came to Ranotsara during my residency there, I requested the "midwife" to visit a woman who had given birth earlier in the week. The midwife responded, "Why?" I explained that the woman wasn't feeling well, and the baby should be examined. She declined the visit, because the woman, having just delivered, had no need for birth control.

Throughout the physician's visit, he received no assistance from the midwife, whose sole role was to wait for men and women to seek her out for birth control information. Four women did so, each receiving a one-month supply of birth control pills. They laughed, knowing full well that the "midwife" would not return with additional pills, and they were correct, despite my request to her that she do so.

In fact, when she visited the neighboring village of Menarano, following her introduction to the community she began a lecture, in a scolding tone, to the villagers,

telling them that the reason they were poor and the reason there were so many sick among them was because they had too many babies.

The selection of Ranotsara as a pilot village did bring with it health care for a few years. But internal divisions (associated with the rising economic power of the men of the Zafinaraina lineage) made the conservation and development objectives of the project difficult to carry out, and health care was abruptly stopped. While project administrators found local disagreements too problematic to continue agricultural assistance (and hence, healthcare – tied to relinquishing forest land and not to accepting agricultural assistance, was disregarded), the villagers perceived the abrupt and unexplained termination of health services as a "punishment" for their participation in the project – a participation which was at times at odds with how the project expected them to participate.

The internal divisions of the village forged its social identity as Tanala, as rising economic and social inequalities led to intensified *tavy* production (primarily among the economic elite – provided with agricultural assistance by the project and thereby economically empowered to hire laborers and rent *tavy* fields) and increasing impoverishment created an *image* of poverty. This image was perceived by many outsiders as *evidence* of backwardness, ignorance, and laziness. The solidifying of a Tanala ethnic identity, which I believe was brought about in part by internal divisions in the village and in part by the project reifying 19th century stereotypes, contributed to the project abandoning the community as a pilot village. This abandonment was ironic given that being identified as Tanala was a primary factor in gaining access to health care because to be Tanala was presumed to mean being a *tavy* farmer and having too many children.

Hanson (1997:24,245) points to future conceptualizations of Tanala needs and the link between social identity and health:

With the turn of the twenty-first century, the RNPP will in all likelihood be deeply involved in the lives of Ambodiaviavy residents. The question at this point is not whether RNPP planners will be able to introduce and define what they believe to be the true needs of the Tanala. This much is certain. Rather, the important consideration now is to what extent, the Tanala people of the Ranomafana region will be able to participate in this definition and interpretation process. This is no small matter. If we assume that a medical center, for example, is defined by the Project as a Tanala need, it will make a good deal of difference for the Tanala as to whether they decide who would staff the center, whether medical teams from the center reach Ambodiaviavy on a monthly basis, or whether the medicines within the center are offered to Tanala individuals free of charge or distributed to lineage leaders.

Hanson's concern for the Tanala residents of Ambodiaviavy is also a concern for the residents of Ranotsara. While Ranotsara is considered a Tanala village by the residents, most of whom describe themselves as descended from Betsileo ancestors, it has been identified in early project documents as a Betsileo village, which at the same time ranked the Betsileo heritage as superior to a Tanala ancestry. "To have both a Betsileo father and mother was a sign of distinction." [RNPP "Survey of Ranomafana Park Pilot Villages" 1989]. In contrast to the project's finding, not one of the residents I interviewed suggested that either ethnicity was superior to the other or that any distinction was conferred by having two Betsileo parents as opposed to one or none.

The village was also routinely described by project workers as a Tanala village during my residence there. The reason it was originally listed as a Betsileo village was that most of the residents, when asked their ethnic identity, are asked "*Inona no ny fokonao?*" which, translated into English, is "What is your descent?" As such, they indicate they are Betsileo because their ancestors were. Still, they persist in practicing

tavy, thus conveying the Tanala status to project management. Moreover, as stated previously, the descent to greater and greater impoverishment has burned an image of backwardness and hopelessness into the eyes and hearts of project administration such that Ranotsara can now only be understood as Tanala to these outsiders.

Another important dimension to the way in which ethnicity is conceptualized, is reflected in the views of a local *ombiasa*, Naina. Naina is a handsome, well-built man in his late fifties, who has studied local medicines for at least thirty years, having learned most of them from his father, also an *ombiasa*. Naina, a widower who had lost most of his hearing, is now teaching the medicines to his son, Feno. Due to his hearing loss, he has become very dependent on Feno to be his ears for him. Unfortunately, while an eager student and very loyal to his father, sixteen-year-old Feno has already developed a heavy dependence on *toaka gasy*, and Naina is often at loss for assistance when Feno is unconscious from drink. Having no other son, and his older daughter showing more interest in boys than in medicines, Naina is concerned that Feno learn the medicines and not drink so much.

Naina explained that he was Tanala, and the Tanala, he suggested, unlike the Betsileo, use medicines to treat illnesses of the head and stomach, and for general healing. The Betsileo, although doing the same, he explained, are more likely to use medicines for ceremonies (as opposed to healing sickness), and also use medicines against their enemies. This distinction of "the other" as using medicines for ceremonies and sorcery was often made by *ombiasa*, regardless of their ethnic identification. They themselves would never use medicines to harm, but others do, and others are defined in terms of ethnicity. The general consensus of the villagers, however, when talk turned to the subject of *ombiasa*

and *mpamosavy* (witches), was that all *ombiasa* are learned in the arts of medicine, and know which plants heal and which harm, and they can all be hired to employ that knowledge, whether they called themselves *mpamosavy* or not. Thus, while *ombiasa* are honored for their healing powers, they are also regarded as potentially injurious. Naina, however, insisted that he used his knowledge only to heal, and this often includes healing the illnesses caused by (Betsileo) *mpamosavy* or by angry ancestors.

Naina's insistence that he practices Tanala medicine was also revealing in that Naina indicated he, like Nirina, was Betsileo "a long time ago" [*taloha be*], and that he had learned his craft from his Betsileo father. Nonetheless, having lived in Ranotsara all his life and practiced the Tanala way of living, which in Naina's case includes farming irrigated rice fields and *tavy*, as well as raising cattle, Naina became Tanala, and consequently, his healing, too, became regarded as Tanala. More significantly, in practice, it was not "the Betsileo" he regarded as his rivals; local competition among healers within the region surrounding Ranotsara led *ombiasa* to safeguard their healing secrets from their neighbors. In Naina's case, this positioned him in competition with both Vesa, an *ombiasa* in Ranotsara, and Tonga, an *ombiasa* and *mpanjaka* in nearby Menarano. Both men are members of the same lineage as Naina, the Zafinaraina lineage, and all three descend from Betsileo ancestors.

The question that remains, if, to the residents, Tanala is a way of life, and Betsileo an ancestry, what exactly is the Tanala way of living? To the project, it is the practice of *tavy*, agricultural strategy is the boundary, and tied to the way that one farms the land is a

host of other social values, including cleanliness, intellect, modernization, sexuality, superstition, and willingness to work.

To the residents, the Tanala way of living is the practice of *tavy*, as well as cash-crop production, irrigated rice farming, burial in caves, eating a diet of rice, greens, beans, manioc, and green bananas, giving birth at home, brewing and drinking *toaka gasy*, and recognizing and giving homage to the ancestors of the forest region. *Tavy*, to the residents of this "Tanala" village, is but one dimension of a complex economic and social system in which people attempt to support themselves and their families on a limited land-base constrained by the critical limitations of the forest environment; that is to say, heavy rains, cyclones, relatively infertile soils, steep terrain, and limited access to markets and roads. The economy is dismal; W. J. Peters (in press, fn), citing Samisoa (1992), indicates that "In a random-sample survey of 100 village households in the Ranomafana National Park peripheral zone, 50 percent of all households (average size approximately 6 people/household) were found to have annual incomes from all sources of less than \$50.00."

Contrary to the project image that to be Tanala was to be a *tavy* farmer and to be Betsileo was to be an irrigated farmer, in the village of Ranotsara, where the wealthier residents all owned both irrigated and *tavy* fields, and the poorer residents sold or rented their *tavy* and irrigated fields to the wealthier residents, there was no relationship between being Betsileo and practicing wet-rice agriculture, and being Tanala and practicing *tavy*. People practiced agriculture based upon the type of land and labor available to them, not based on "the way of the ancestors" or their ethnic identity.

Most importantly, there are not two different agricultural systems managed by two different types of people. There exists a single agricultural system which includes horticultural elements. That is to say, the people practice swidden and irrigated agriculture concurrently, along with cash-crop production. A common view of the persistence of *tavy* is that it is a form of resistance (e.g. Bryant and Bailey 1997; Hanson 1997; Jarosz 1993).

A comparable [to "scientific forestry" in Java] record of everyday resistance occurred in colonial Madagascar where, as Jarosz (1993) shows, French colonial officials sought to stamp out shifting cultivation, but in the process only incurred the implacable opposition of shifting cultivators in this colony. Shifting cultivation (or *tavy*) was a form of long-term land management used for centuries by the Malagasy, but concerns about the possible adverse effects of such cultivation on the island's commercially valuable forests prompted the French to ban this practice in those forests in 1913. As elsewhere in the colonial world (Bryant, 1994a; Jewitt, 1995), this policy was linked to a paternalistic quest to 'civilise' shifting cultivators through a sedentarisation programme that aimed to convert hill-dwelling cultivators into valley-dwelling commercial farmers. However, this 'colonial vision proved difficult to implement' as a result of the widespread resistance of the Malagasy to the restrictions placed on the *tavy* (Jarosz, 1993:375). Everyday resistance here, as in Dutch-ruled Java, often involved nothing more than the perpetuation of practices that were now illegal, and shifting cultivators were arrested or forced to pay fines for burning and clearing state-protected forests. Indeed, the *tavy* represented a conscious quest to hold on to local culture and beliefs; the fact that such cultivation was undertaken in traditional dress and using traditional tools was a piquant rejection of French attempts to convert the Malagasy to a more 'civilised' European way of life (Jarosz, 1993) (Bryant and Bailey 1997:171, 172).

I would suggest that rather than conceptualizing *tavy* as a form of cultural resistance, which it may well be, it may be more useful to focus on how -- and which -- people do *not* resist intervention. While *tavy* may persist, many people do indeed embrace agricultural innovations (while not abandoning *tavy*) and economic change. Who is

positioned to do so, and how they strategize such changes, illuminates the internal social differences that homogenized concepts of cultural belief systems fail to flesh out.

In the following chapter I shift from the discussion of *tavy* and history, to consider how the daily lives and environment of the residents of Ranotsara are experienced bodily. Encircled by wet-rice fields, in which they labor daily, backs bent and knee deep in fecal-contaminated water, cooking over open fires in small, windowless rooms, sharing bed and closet-sized homes with five or six family members, eating minimally and working exhaustively to provide the necessities of life, sickness is hard and lasting for many. This sickness, viewed as “natural” in the context of “tropical” illnesses, is shared by all, regardless of status. Gender and age, however, mediate the types of illnesses which strike, and cash resources influence treatment. Nonetheless, illness and disease in Ranotsara are associated with the social changes of migration, increased labor, housing, agricultural practices, and animal husbandry, suggesting that there is nothing natural about tropical sickness. What has become naturalized to the residents, however, is the suffering of the body, the chronic discomfort one internalizes from infancy, when scabies afflicts a newborn at two weeks of age, intestinal parasites infests the crawling baby, malaria sickens the toddler, and chronic coughing strikes the child. By adulthood, when breathing is difficult and walking is painful, one has learned sickness and ache as a “natural” condition. The following chapter will show how this naturalized sickness is experienced and accepted.

Chapter 6

NATURALIZING SICKNESS

Medicine for the Dead

My first day in the village was spent unpacking my far too many provisions, arranging someone to help with the cooking (a young woman named Lalao), and someone to help with the laundry (an older woman named Patrisse), as well as meeting many people. It was a busy, stressful day that ended with my feeling more like Lucy Ricardo than Margaret Mead. Finally, however, the introductions had been made, I had been warmly welcomed, and my desk and bed were in place. Several women joined me for my first meal, and the dishes were washed in the river. As the women were bidding me goodnight and I was longing for privacy once more, there was a knock at the door. I answered it, and in the darkness I discerned a young, timid woman, late in pregnancy, holding out a note for me.

The note was written by Jacqueline, a woman from Ranomafana who had assisted me with finding a village for my research. I translated the note from French to English as I read it to myself in the dim candlelight,

"Madame Janezi," Jacqueline wrote, "This is Nety. She is from Ranotsara. She can cook, and clean and help you in many ways. She needs a job. Please hire her."

I did not know what to do. I did not need a cook, or anyone to clean my home.

"I would like to hire you," I attempted to say in my pathetic rendition of the Tanala dialect, "but I do not need anyone. I already have someone to cook, and someone to do laundry, and a research assistant."

She looked heartbroken. She probably needed an income very badly, and being pregnant and female, I wondered if she had any land or laborers to assist her with farming. As young as she was, in her late teens or early twenties, it was also quite possible she had no husband.

I looked around the room, and saw a piece of foam wrapped in sheets and blankets, which was my bed. I recalled another anthropologist telling me that he hired a woman to make his bed and sweep the floors, just because she needed the money.

"You could make my bed. I could pay you to make my bed and sweep the floors," I suggested, knowing it made me sound incredibly decadent and lazy to hire someone to do something I could so obviously do for myself.

"What would the salary be?" she asked, clearly unimpressed with the job.

I had been told by many people that I had been paying my research assistant, and any others I hired for whatever job, far too much for the local economy and it was creating conflicts. Consequently, I vowed that no matter how absurdly low the local wages, I would start paying within the limits of the local economy. So I quoted her a price, I don't recall how much, one that was low but relative to the wages I was paying for Lalao to cook and Patrisse to wash my clothes.

"That is not enough. . ." she said in a barely audible whisper as she looked to the floor. To admit that the pay was not enough was clearly difficult for her. A crowd of

about fifteen or twenty people had surrounded us, and no matter my efforts to direct them out the door, this first night in Ranotsara was proving me to be ineffectual in a number of respects.

"I know that it is not enough to live on," I explained, "but it will only take five or ten minutes a day, and the pay will increase, and if I find more work, I can hire you for more." She continued to look devastated.

"*Tsy ampy izany, tsy ampy izany*" ["It is not enough"] she repeated, mostly to herself.

I wondered if the problem was my language skills. I had never been tutored in the local dialect – even the Merina dialect of Malagasy was a challenge for me – and so I thought perhaps she did not understand that I only wanted her to work for a few minutes every day. A brilliant thought occurred to me.

"Come back tomorrow. My assistant, Degas, will be here, and he will explain to you in Malagasy. Maybe we can think of something." With that, she appeared happy, and departed.

I went to bed and slept soundly as the rats scurried over my head.

The next morning, just as the sun was rising, there was a terrible banging on my door. I opened it, and several people stormed in, screaming for Lalao. I could not make out anything they said except for the word *renirano*, which means river, and *lavo*, which means to fall, and so I thought perhaps Lalao had fallen in the river (just as I'd done the day before) and would be late coming to fix me breakfast. But it appeared they were looking for Lalao. I was completely bewildered, and couldn't understand a word.

"Lalao is not here," I explained, and before I could find out more about what was going on, they ran off.

I dressed and stepped outside, expecting more warm welcoming in what was now "my village."

Welcome Wagon wasn't exactly awaiting my appearance. Instead, right there, smack dab in front of my door, was a fire of twigs burning and smoking, with a big-bellied woman hanging upside down, smoking like a Virginia ham. Some young men were holding her by her feet, her long wet hair and limp arms dangling in the fire. With grave faces, several elder men and women were fanning the smoke in her face with banana fronds.

This was obviously weird. There was nothing at all about this in Linton.

"Who is it?" I asked the eldest man standing near me. He, like many others, was scowling directly at me.

"It is the woman who came to you looking for work last night," he answered, "the one you would not hire." There was no mistaking that she was now dead.

I froze and watched incredulously as they continued fanning her face with the smoke. And I thought about how badly I wanted to run in the house for my camera.

"What happened?" I finally asked.

"She went to the river behind your house, to bathe for her meeting with you," he explained, "and she fell in the river and drowned."

This was no way to get acquainted.

I continued to stand, silently, watching.

"*Fanafody!!!*" one of the elder women shouted, "We need *fanafody!!!*" They needed medicine. They were all looking at me. They knew that in with all that ridiculous *vazaha* stuff I'd brought, there must be a boxful of medicine. The scowling man next to me said,

"She needs *fanafody*. *Fodigasy* (Malagasy medicine, or plant medicine) is not strong enough. We need *vazaha* medicine."

What could I tell them? Our medicines *are* strong. But not strong enough for dead.

"*Tsy misy*," (There isn't any), I explained, "There is no *vazaha* medicine for her. It is not that strong."

They stomped out the fire.

"Get your camera," the scowling man said, "take pictures for her family," and with that, he and the others motioned with their heads for me to hurry back in my house and get the camera. When I returned, they hoisted her on the shoulders of some strong young men, and motioned for me to follow.

Then the wailing began.

Nety was taken to her uncle's home (for I learned that she did not live in Ranotsara, but had only come to the village of her uncle when she learned there was potential work with a *vazaha*) and there the women undressed and cleaned her. She was then dressed in her best dress, her hair combed and pinned up, and she was wrapped in *lamba* (cloths). This done, she was taken to the *trano-be*, or "big house," a large one-

room cement-floored house that I was to learn was used for funeral services, dances, celebrations, meetings, and ceremonies.

Young men from her family were sent to the forest where they selected a fine tree, chopped it down, stripped it of its bark, and brought it to the village. This done, it was hollowed out as a coffin, and Nety's *lamba*, by now dripping with bodily fluids, were changed. Wrapped in a white sheet, she was placed in the hollowed out tree, and visitation continued.

For three days and three nights, all non-essential work, including school and farming, stopped. People came from villages throughout the area to pay respects. Everyone was well dressed, and except for the wailing which never ceased inside the *trano-be*, the village took on a festive mood as people visited with cousins and friends, ate well, and drank *toaka gasy*. Everyone gave a gift, either money or food or *lamba*. The *trano-be* was always full, throughout the day and night. Nety was never left alone, and her mother never left her side, as she fanned the flies from her daughter's face for three days and three nights.

On the third day, a cow was sacrificed, its meat and organs distributed to everyone in the village. The village gathered, and her eldest maternal uncle, Koto, recited the *kabary*. The *kabary* is a late eighteenth-century speech form introduced during the rise of the Merina by Anrianampoinimerina to provide an oratorical means of recording – and creating – history (Bloch 1986; Larson 1992). It now serves many purposes, including replicating ethnic identities (Larson 1992) and providing a means of social resistance through public speech (Hanson 1997). In this instance, the *kabary* served as a formalized

means through which one could both honor the dead, establish the dead's ties to her lineage, and pressure the community to offer gifts to the family.

By reciting – in the text of the *kabary* – the name of each person who gave a gift, and the exact monetary amount or number of *lamba*, people knew who gave and who did not give, and were accordingly judged as to the appropriateness of the gift. Everyone was expected to give something, no matter how small, and to omit an offering would in this way bring public disgrace. Conversely, by making a generous offer, one aligned themselves with the family of the dead, thereby establishing the expectation of reciprocity. In so doing, however, they would either be expected to provide equally to others with subsequent deaths, or be judged as having acted prejudicially.

When the *kabary* was concluded, vines, which had been burning quietly throughout the speech, were removed from the smoldering ashes which had softened them, and wrapped around the coffin, then tightly tied to seal the lid closed. A few pieces of *kitay*, or wood fuel, were left to burn and tossed in with the grass mats which had lain under Nety's body. Along with the *lamba* she had worn, these objects were gathered together. The *kitay* and the *lamba* would keep her warm, while the smoldering flames and smoke would keep the *biby* away.

Nety's body was hoisted high and a procession followed it out of the village, as it passed over the head of the young toddling son her death had left orphaned. By passing over his head, she blessed and protected him for one last time. Her body was taken to the ancestral tomb of the Zafinaraina lineage, and the *lamba*, *kitay*, and grass mats were taken to a distant grove of trees for disposal.

With her body carried away, amidst the chanting and singing of French colonial military songs by the pall bearers, village life resumed.

In the year that followed, the death of Nety was explained in multiple ways. It confounded the villagers, because the river was not very deep. The spot where Nety fell was knee-deep with no current. And she was not found in the river, but laying dead on the bank.

My first thoughts, conditioned as they are by cheap novels, Hollywood, and lurid family newspapers, ran toward homicide. But murder, while it happens, does not happen often enough in Madagascar that one would find themselves murdered by a competitor for the job of making a bed, or for very many other reasons¹. As much as finding a woman drowned on a river bank next to a shallow river might sound suspicious to me, the truth was, murder was highly improbable. At least, murder by a mortal.

¹ During my visits to Madagascar I only learned of three murders, all tied to the social changes of development and involving foreigners. The first, and most celebrated, was the murder of a young Malagasy man who had become so well-respected as a wildlife guide (including in Ranomafana) that the high wages and many gifts the *vazaha* bestowed on him were said to have contributed to his unexplained murder (see Quammen 1991). The second occurred during my stay in Madagascar, when a young female Peace Corps worker was sexually assaulted and murdered while jogging; while I do not know the details of this killing, it prompted much talk. Peace Corps workers I spoke to who knew both the victim and her alleged killer indicated that she had been telling women that they did not need to agree to unwanted sexual advances by this man. Whether or not there is any truth to this account I do not know, but the Peace Corps workers I spoke to interpreted her death as caution against introducing or advocating feminist perspectives (an irony given the outspoken nature of many Malagasy women, whom I found to be far more feminist than many “free” American women I know). They further indicated that this act was regarded as a consequence of white foreigners interfering in local lives. The third was a more typical tale of a European tourist who was said to be drunk and flashing his money; he was reportedly stabbed on a dark street as he tried to hail a cab back to his hotel.

Nety had awoken at four or four thirty, a very early hour even by Malagasy standards, and gone to the river to bathe. It was still dark, and so the *biby* (water spirits, nature spirits), were out. Everyone knew that it was dangerous to go to the river at that hour.

Some consequently attributed her death to the *biby*.

As the months unfolded, however, other explanations were whispered. Nety was found with blood between her legs. Perhaps she had been trying to perform an abortion? Many people concluded that the reason Nety died was because she had tried to abort her baby, and the ancestors struck her dead for the sin.

But several months later, when I discussed the incident with the RNPP physician, he remembered her. He had been treating her for epilepsy. She had no income, and could no longer afford the medicine. In all likelihood, he explained, she had a seizure in the river, and in her seizure, had somehow managed to reach the riverbank.

"And that would explain the blood between her legs," I surmised, "because she was miscarrying perhaps?"

I raised my theory with various people in the village. It seemed likely, all agreed. But still, the *biby* were angry.

"But would she have died, do you think, if she'd had the medicine to stop the seizures?" I asked Nirina, who sat behind my house looking out to the river where Nety's spirit now resided.

"Oh, if she had the *fanafody* for the seizures, then she would be alive. Seizures are very powerful," Nirina explained, demonstrating with a feigned seizure that rattled her whole aged skeleton. "Without medicine, many Tanala die from them. She needed

fanafody, and the *fanafody gasy* is not strong. But now we must pay for *fanafody vazaha* [Western medicines], and they are very expensive. She could not pay for the medicine. If she had had the medicine, the *biby* might have frightened her, but they would not have killed her. *Fanafody gasy* would have cured her."

"What *fanafody gasy*?" I asked, "How would it have cured her?"

"*Apanga*," Nirina answered, "the plant used to bring back the soul. It is used to treat unconsciousness. The plant is burned and the smoke inhaled. You saw how we tried to bring back her soul by burning the *apanga*." I recalled the way Nety hung over the burning vines, with the banana fronds fanning the smoke into her face, and the frantic elders calling for stronger medicine, *vazaha* medicine.

Nirina ended her explanation with another feigned seizure and a loud laugh at her own performance.

After reflecting on her comments, I later asked her what she meant by Tanala dying. Was she suggesting that Betsileo do not need the same medicines as Tanala, that Tanala are more susceptible to death than Betsileo?

Nirina sighed and gave me a long and patient look. "*Ho maty Betsileo, ho maty Tanala, ho maty Vazaha! Maty daholo*," she declared with good humor, perhaps wondering if I realized my own mortality. ["The Betsileo will die, the Tanala will die, you foreigners will die! Everyone dies."]

"We are the Tanala. Everyone here is Tanala. People who live here are no different from Betsileo, but Betsileo live near Fianarantsoa. They have hospitals there, they do not have the *tavy* fields we have here. We live in the forest. If they come here, then they live the lives of Tanala. Then they will have our sickness and die along with us."

I continued to ponder the many explanations for Nety's death that were whispered about the village. No patterns emerged initially, but with time and many repetitions, it appeared that while the older people focused on her need for medicine for her seizures, younger women (and some young adult men I was told by my male informant) were more convinced she had been punished for her alleged sin of trying to abort, a rumor for which there was no evidence. While it is entirely possible that older people wondered the same thing, they may have been less willing to discuss the topic with me, particularly those who were Catholic. I wondered, as well, if the difference in explanations could be attributed to older people having more experience with seizures as something treatable by medicine, and younger people knew only of a seizure as something uncontrollable. I will never know. The subject of Nety's death was off-limits for structured interviews. It lived on in rumor only.

With the burial of Nety, I thought I would see no more sudden death, and wondered how I would go about learning about how people treated sickness. I soon discovered, however, that death and sickness were daily events, and watched awkwardly and horrified as child after child, adult after adult, fell ill and died.

A Quest for Diagnosis

Shortly after my arrival in the village, and as I noted one death after another, I urgently appealed to project management to send the traveling physician to the village. As Ranotsara had not officially been removed from the list of target villages, and the absence of health care for the last three years remained unexplained officially, it was appropriate for me to raise my concerns about village health status to the project physician, Dr. Tovo.

Dr. Tovo is a young, well-educated physician with considerable concern for the health of the rural poor, and much pride in his education in tropical medicine. Working long hours away from his family, he would travel great distances, hiking over treacherous terrain with a backpack full of his few medicines and medical supplies, to check on a broken bone, or follow-up on the care of an ailing patient. He was the sole physician for the estimated 30,000 residents of the Ranomafana National Park peripheral zone, and worked only with the assistance of two nurses and one “mid-wife,” untrained in midwifery, but whose responsibility it was to dispense birth control pills.² He reported making approximately 1,000,000 fmg (\$250) per month, receiving a monthly raise of approximately 10,000 fmg (\$2.50) after two years with the project.

Upon hearing of the deaths and the spreading illnesses of the village, Dr. Tovo felt that visiting the village should be a priority. Moreover, my research on health and access to medicines in the region suggested to him opportunities for collaboration in which we could share knowledge. Consequently, within a month of my arrival in Ranotsara, the residents received their first health team visit in over three years.³ Dr. Tovo later informed

² In contrast, one physician and one nurse were hired shortly before my arrival to treat the project staff.

³ Oddly, on the day of his arrival, I received an unexpected summons to appear that same day in distant Ifanadiana, to provide evidence I had paid for my visa (seven months after arriving in Madagascar). As such, I was unable to attend the visit by the traveling health team, and upon inquiring of the nurse if I might discuss the visit, was informed that he had been instructed by the American Project Director not to speak with me. Fortunately, I was able to examine records of the visit provided to me by another, and after interviewing residents, learned of the events of the day. Dr. Tovo himself indicated that his decision to visit the village was regarded with surprising suspicion by project administrators, who questioned him at length about his interest in the village. He said that he had never before been questioned about a village he attended. At the same time that project administration expressed such concern for the doctor’s work, however, I was

me that the health of the village was perhaps the worst he had seen in the entire village. He reasoned that the wet and humid environment, characterized by irrigated rice fields surrounding the entire village and creating a miniature island on which the village rested, compounded by poor sanitation, poor water quality, its distance from the main road, extreme poverty of its residents, and poor education about health matters, all contributed to the sickness that prevailed. Among the illnesses that struck him were widespread scabies (often infected), infected circumcisions, parasites, and respiratory disorders. Of the 39 people he saw that day, 10 were treated for intestinal parasites, 14 for scabies (including five people with infected scabies), and 16 for respiratory infections.⁴ Perhaps the most severe of this latter category was that suffered by Lanto.

Lanto was a bit of an outcast in Ranotsara. Her hair grew wild and she left it uncombed; she kept to herself and rarely joined group activities. The death of her first husband, clearly by *mosavy*, as *toaka* is known only to kill when a *mpamosavy* poisons it, brought lingering gossip as to who killed him and why. Although the granddaughter of

struck by an equally surprising lack of concern for the residents. Indeed, during a visit to the home of project manager one evening, she rhetorically asked me, as she stirred some cooking on the stove, how things were going in the village. I responded that another child had died. Her reply was a mumbled, "humph," prompting me to add, "that's the eleventh so far." She looked directly at me and announced, "I think this gravy needs more salt." One can only speculate as to her response had I pointed out eleven lemurs had dropped dead. Nonetheless, Dr. Tovo was instructed that he was not to return to the village and it was not until the day of my departure (one day later than scheduled), that project administrators directed him to return.

⁴ These numbers cannot be taken to represent the health status of the village as a whole, but reflect only those who were in the village at the time of his visit, had cash available to purchase medicines, and chose to see the doctor.

one of the village founders and the sister of the *mpanjaka*, her status as a Zafindraraoto, accompanied by her poverty and social seclusion, cast her as an outsider in her own village.

Lanto describes herself as a *mpamboly*, or farmer, and proudly proclaims that she was born and raised in Ranotsara. When asked her ethnicity she says that she is Betsileo, because her ancestors were Betsileo. She also indicates that she was once a Catholic, but no longer practices because she is not interested in attending services or praying. She has had two years of schooling and can neither read nor write. After the death of her first husband, she remarried, but her second husband, whom she describes as having “a different head,” than hers, moved away nearly two years earlier, leaving her to raise their five children on her own, including two young and underfed toddlers.⁵ With limited land of her own, Lanto struggled to feed and clothe her children, but a cyclone the previous year had wiped out her crops, and so, she reports, she sold her banana trees (which she estimated to be about 100 in number) to Rivo for 10,000 fmg (about \$2.50). She was left with *tavy*, but no one to farm it. Her eldest son had moved to Tulear and she had not seen him since. Another son had gone to live with Pascal, when Lanto could no longer afford to feed him; in exchange for room and board, he worked Pascal’s fields, leaving no one to help Lanto farm her land.

Her own health was poor – bone thin and slow moving, she looked much older than a woman in her early or mid-forties, and a chronic bloody cough limited her strength. When strong enough, she worked for Rivo, Philippe, or Pascal for food and cash,

⁵ Only her eldest daughter has had any schooling, of about five years.

receiving about 1,000 fmg (about 25 cents at the time of my stay, and about two-thirds the going rate) and one kapoaka⁶ of rice (valued at about 1,500 fmg at the time of my interview).

Her economic strategies were, during the time I knew her, mixed, and limited. She told me that she would not borrow money because she could not repay it. She said that she worked a few days a week, but in truth, she probably worked less than that. “*Mitady any sakafo*,” she says, “I look for food.” From what I saw, and what was told to me by herself and others, Lanto and her children eat and consume very little, having meals twice a day. Meals consist of rice and greens, and sometimes wild forest or sweet potatoes. Like many in Ranotsara, she often lacks rice, so she and her children often eat tubers.

Lanto was among the many women who met with me on several occasions for long and personal interviews, often lasting half the day. Her constant phlegm-filled coughing concerned me, and I asked how long she had been coughing so. Since the birth of her last child, she disclosed, she had been suffering from *marikoditra* [a fever with chills] and the *kohaka* [cough]. She did not know the cause, she said, but believed it came from working in the fields during the time of her pregnancy and following the birth of her child. It was then, she said, that she first became so very tired and her illness began. The illness started with dizziness and vomiting, she soon became weak and had trouble walking. She had a constant headache, and no appetite. The illness, she said, has made it difficult to work. Now, three years later, it has moved to her chest. Regarding it as life-threatening, she was even more concerned with her failing eyesight. But no one in the

⁶ A kapoaka is a Nestle milk can full, usually of rice, and is a standard unit of measurement.

village had eye glasses, nor the means to obtain them. The closest optometry was in Fianarantsoa, a full-day's voyage and with the cost of the *taxi-brousse*⁷, food, and lodging, not to mention the optometrist's fee and the glasses themselves, beyond Lanto's, and everyone else's, means.

And so she had grown accustomed to her failing eyesight in the same way that she had grown accustomed to her cough. She would take "red pills" [antibiotics] and aspirin periodically, she said, whenever the traveling physician visited; she has not had them since he stopped coming, she reported.⁸ She said that she refused to take *fanafody gasy*, claiming it did not help her. "Only the doctor's medicines have helped," she insisted, adding that she paid 1,250 for each injection the previous doctor gave her.

Contrary to her claim that she did not use *fanafody gasy*, she did tell me that she went to an *ombiasa* two years prior, to treat her illness. Rakoto told her that she was suffering from *bilo* [known locally as ghost sickness; in other parts of the island it refers to a type of possession]. To treat her, she said that he played the *kabosa* [home crafted ukelele] to find the *bilo*, but he did not find it. She paid him 3,500 and two liters of *toaka* for his services. He gave her some dried leaves, she said, but could not recall, or would not reveal, the names of the leaves. She drank teas made from the leaves, and inhaled the steam from the brewing leaves for a week.

⁷ A *taxi-brousse* is a public "taxi," usually an old battered station wagon or smaller car, in which up to 14 people might squeeze.

⁸ While Lanto indicated her illness began two or three years prior, her disclosure that she had been taking medicine for the pills during the period when the first traveling physician, prior to Dr. Tovo, had visited monthly, suggests that either the illness was of much longer duration, or she was taking the pills for something else.

“I stopped,” she said, “I did not believe it was *bilo*. It was from having a baby, or maybe from working too hard,” she considered. As I inquired further, she explained, “This illness comes with being tired from giving birth; women get it when they have children. But maybe I just worked too hard and got tired.” Lanto added that she did not believe having children was a health problem, as I had inquired in previous interviews. “The sicknesses of women,” she told me, “are sick backs. Our work is hard, and it hurts our backs.”

Her comment corresponded to Avotri and Walters’ (1999) finding that women in the Volta region of Ghana, West Africa were not as concerned about reproductive health as they were about health problems related to their work, including “worrying too much,” having difficulty sleeping, chronic tiredness, headaches, and bodily aches.

Women talked about the medication they took for various ailments, their visits to pharmacies, health centers and hospitals, as well as the prohibitive cost of these, and a handful of women spoke in terms of their responsibility for their health. But these were by no means the main emphasis in the interviews. Instead, women talked about the ways in which their day-to-day lives created or exacerbated the health problems they experienced. One particularly strong emphasis was on the ways in which women’s work influences their health (Avotri and Walters 1999:1124).

Lanto’s understanding that her illness was likely to be related to the circumstances of her life, rather than possession by a *bilo*, suggested an astute comprehension of the social factors shaping health in the tropical forest. But the *increase* in illness, she felt, was related to the cold weather. The cold brought on the back aches and neck aches that plagued so many adult women, she suggested, while the coughing that was common to all children was likewise an illness of the weather. But the poor, she said, in almost a whisper, get all illnesses.

Unhappy with the treatment Rakoto had prescribed, because, she explained, it did not cure her, she did not return. Nonetheless, she remained hopeful, if not confident, that Rakoto could cure other illnesses. Doctors, she revealed, cure illnesses of the body, but *ombiasa* cure illnesses of the spirit. Fearing her children had such an illness, when they began having headaches and coughing severely and constantly, she sent each of them to Rakoto. Just as he did with her, Rakoto gave the children plants for drinking and inhalation, but they were not the same plants he had given her, and he guarded the names of the plants so she was unable to tell me what they were. But the children did not get better. One child became unconscious and Rakoto did nothing, she recalled with a trace of anger. Fortunately, her brother pointed out to her that the child was very hot and instructed her to cool him with cold water. She did so, and he recovered. She recalled with despair how the children were cured on their own, not by Rakoto, she stressed. Nonetheless, she paid him 175 fmg for his services.

Lanto's quest for treatment of her chronic cough and difficulty breathing, did not stop with Rakoto. She recalled going to Ranomafana shortly afterwards, where she was told she needed an injection. She said she was not told the name of the illness or the medicine, but recalled the price of 1,250 fmg quite clearly.

"The injections made me better, like the red pills. But I didn't have the money to keep getting them, and the trip was very long. So the cough would come back."

"Did you use plant medicines?" I asked, for the third or fourth time, broaching the question from multiple directions to see if I could stumble upon some undisclosed secret of the local botany.

“*Ahibalala*,” she answered, matter-of-factly, as she had each time before. Like so many others, she turned to *ahibalala* the way an American turns to Tylenol or Echinacea root. The only other medicines she admitted to using were those she used to maintain her teeth, a method she learned from her father.

I asked Lanto if knowing more about the plants would help the health of the people living in Ranotsara. “No,” she said, “we get sick more often than you *vazaha* because we do not have *fanafody*. What we need is more *fanafody vazaha*, not more plants. But there is no money for them.”

Lanto, having exhausted herself talking to me about things she found to be so obvious, was among the first to visit Dr. Tovo when he came to the village. Because his visit was unannounced, most adults were working their fields when he arrived; many of those working *tavy* fields missed the visit altogether, remaining unaware that health care had come to the village until it had once again gone. But because Lanto’s health was so poor, she worked little. As such, she was at home, cooking for her children, when the doctor arrived. After waiting her turn outside the makeshift clinic set up in the *trano-be* [“big house” used for ceremonies and funerals], she timidly approached the young, educated doctor, and asked him for help.

Listening to her lungs through his stethoscope, watching her cough with every effort to speak, and questioning her about the course and symptoms of her illness, he became concerned that she might have tuberculosis, a fairly common illness he encountered as he hiked from village to village. Knowing how contagious and severe such an illness is, he prescribed Tetracycline and Chloroquine (for a fever that accompanied her

cough) and advised her to go as soon as possible to the clinic in Ranomafana. To be sure she did so, when meeting my assistant in the town of Ranomafana a few days later, he shared his concerns and asked that I encourage her to go.

My verbal encouragement was not necessary, however, and Lanto went obligingly to the clinic, without feeling the need to check in with the *vazaha* about what she should do. She walked the 7 km distance in the rain, taking a day off work and leaving her children in the care of the eldest. Upon arriving, she found the clinic was closed with no reason stated. She returned to Ranotsara promptly, reaching the village by the end of the day.

She shared her frustration with me. “It is always this way, I am not surprised. Sometimes they are open and sometimes they are not. I walked all that way and back again, for nothing!”

This time, I did encourage her to return. But she expressed her concerns with me that she wouldn’t have the money for the supplies, such as alcohol or cotton, for a blood test. Her concern was well founded; while treatment was free, supplies were not. Moreover, she would need to eat. I advanced her the money for supplies, and my assistant, Degas, made an appointment for her for the following Friday.

So once again, she left her children and hiked the 7km to town. This time the clinic was open and a nurse drew her blood, and told her to return the following Monday. Hiking back again, she returned to the village by nightfall, completely exhausted. She made no mention of the trip to me, and made it clear that she was too tired to talk about it. On the following Monday, and without comment, she returned for the third time. Once there, after waiting hours to be seen, they drew her blood again. She neither asked,

nor did they explain, why they were repeating the test. The blood drawn, she was told to return the next day. Weakened and hungry, she tried to visit her family in Ranomafana for some rest and a meal, but they were not there. She returned to Ranotsara without having eaten all day.

On Tuesday she returned to Ranomafana for the fourth time. This time, she was told to return the following day with a vial of her spit, which they would not accept at that time. She said she was too worn out from all the hiking and would wait until Friday to return. But by the time Friday came, Lanto was fed up. She refused to return, having made four round-trip hikes over the mountainous terrain with a burning fever and severe respiratory problems.

Degas, my assistant, followed up with the clinic to find out if she did indeed have tuberculosis. The findings were negative, but there was no attempt made by the clinicians to find out what was wrong with her. She was simply sick, with *kohaka*.

Lanto concluded that the antibiotics were all she had needed in the first place and the cough would plague her for the rest of her life. "I can drink *ahibalala* when it is bad," she concluded.

Under the Skin: Suffering with Scabies

Scabies is a highly-contagious and absolutely miserable affliction. Caused by a microscopic insect that burrows under the skin, it produces extreme and unrelenting itching. The pharmaceutical treatment is to wash all clothes, towels, and bedding with a lotion made from a base of DDT (Ascabiol). This lotion is also applied liberally to all infected areas of the skin.

There is no plant or other organic substance known to the residents of Ranotsara which will relieve the pain or cure the condition as effectively. Cleanliness is regarded, by Tanala and Western health professionals alike, as the most important prophylactic treatment, but the highly contagious nature of scabies makes even thorough and repeated scrubbing with soap, even if available, no guarantee that it will not spread.

My fieldwork began, after public introductions and Nety's fatal seizure, with door-to-door introductions. Accompanied by Degas, notebook in hand and an explanatory speech of my research objectives memorized, I visited each family and interrogated them with invasive but excessively polite demographic questions.

Kala's husband, Zanabelo, was of the Zafinaraina lineage. His mother, Bodo, was the daughter of Raminstiry, who had married the alleged *anadevo*, Ikalahafa. As such, although he had retained the well-respected lineage through his mother's paternity,⁹ it was tainted with his grandfather's intermarriage of caste. Such intermarriage, as I have previously indicated, does not necessarily render one impoverished; indeed, the wealthiest individuals in the village, who control most of the land and resources, were themselves descended from this alliance. Consequently, Zanabelo's ancestry alone did not account for the extreme poverty in which he and his family lived.

⁹ I do not know why his mother remained in her natal village. Although it is customary for a woman to relocate to her husband's village, if there are more practical reasons for the husband to relocate to the wife's village, he will do so, as did Masobe. Zanabelo's father, Ralita, died within a few weeks of my arrival. He was said to be over 120 years old, and well respected in the village.

Zanabelo was relatively land-rich, but lacked the labor to farm his land, which included irrigated rice fields, *tavy*, and cash crops. In addition to the rice grown in the irrigated and swidden fields, he intercropped his *tavy* fields with lentils, manioc and beans. His cash crops included sugar cane, bananas, manioc and coffee, and he raised chickens for food and trade.

Zanabelo explained that when his father was younger, they worked the land together, and crops were abundant. But as his father aged and weakened, it was left to Zanabelo alone to work the fields, along with his wife. He occasionally received help from his family, but in recent years, his cousins Rivo, Philippe and Pascal, had prospered and were hence preoccupied with their own lands; his other cousins were working for them for wages that Zanabelo could not match.

His needs had increased in recent years as well. Working his fields alone has required better tools, such as shovels and knives, and as his family grew at the same time that he lost the help of his family in farming his land, the rice that he and his wife were able to grow on their own declined. As such, he has been forced to buy rice at market, along with sugar, coffee¹⁰, petrol, salt, *lamba* (for funeral offerings) and clothes. When he has the money, he'll buy a bit of meat for his family. Otherwise, they get by on the rice, beans, greens and manioc they grow.

¹⁰ A small cache of coffee is considered relatively essential, in that it is offered to honored visitors, as well as used as a medicine to treat *tazo* [fevers]. Its bitter taste is believed to be medicinal. Coffee as a daily beverage, however, is rare because it is too costly, both in the loss of its sale, and in the fuel wood necessary to roast it and the time needed to roast and pound it.

Kala and Zanabelo were among the few villagers who regarded themselves as Betsileo. (In contrast, Zanabelo's wealthier brother, Raboly, considered himself Tanala.) Married twenty years, they had three surviving children, at the time of my fieldwork, 16 year-old Claude, 7 year-old Tonga, and 2 year-old Ravo. Five of their children had died, the last, a twelve-year old son who had been schooled "for many years," died suddenly the previous year, after complaining of a headache and lying down to sleep. He never awoke. Zanabelo himself had only five or six years of school; he can read and write a bit, "*fa tsy tsara*" [but not well].

Zanabelo explained that he often needs to borrow money from his cousins to make it through the year. If he is able, he says, he would repay as soon as possible. If not, he is forced to wait for the following year's crops, at which time he repays, whether in cash or in rice, twice the amount he has borrowed. If he could not repay the loan, he said, his cousins would take his land [I could not ascertain whether or not this was true, although it was repeated by others.].

Zanabelo regarded the relationship between food and health as simple. You have to eat well to be healthy. But in regard to the most serious health problems he perceived, he indicated that *hantana*, or scabies, was one of the worst, yet unrelated to food. His wife, Kala, in contrast, did not regard *hantana* as a significant health problem.

Kala is an illiterate woman in her late 30s who had lived in Ranotsara for nineteen years. She has never gone to school and, like her husband, does not practice or profess Catholicism. Kala is very shy, but with a warm personality that slowly unfolds. She is openly devoted to her children, and rocks her youngest in her arms as we speak.

They are covered with scabies, so badly infected that the two-year old looks like a burn victim, and 7 year-old Tonga digs at his legs furiously while we talk, smiling broadly all the time. Tonga's smile is so constant, in fact, that in nearly all of my photos of children crowded together for a photo opportunity, it is Tonga whose face is always the most noticeable, his smile so outstanding. As he scratches and digs deeply into his scabies-scarred legs, he appears unaware of the pain. His mother, as well, scratches unconsciously at her hands and her feet, the red-dotted rash visible between her fingers and toes.

"*Hantana* is not one of our problems," she tells me, in answer to my many questions of health and living conditions. "We have it all the time. We learn to suffer with it. *Sempotra* [respiratory problems] and *tazo* [fevers] are problems."

Despite her repeated comments that she ignored *hantana* and did nothing to treat it, she later admitted that she used a medicine made from *velopotsy* leaves, found in the *hibo-hibo* [*tavy* regrowth]. "Everybody uses it; everybody knows where to get it."

But this comment, too, brought with it contradictory testimony, as she told me that the plant had become increasingly difficult to find with the spread of *tavy*, and later remarked that it could be found everywhere and was in no short supply. Moreover, she twice told me that she did not know of the plant until she moved to Ranotsara, and learned of it from the other women, while one other time she said that she had learned of it from her father. Rather than dismissing her comments as irrelevant, I was intrigued by them, because since Ranotsara is a patrilocal community, I found it fairly common for women to remark that they learned of new medicines upon moving to Ranotsara. While they may have learned of these medicines from other women, in many cases this knowledge had

been transmitted through males. As such, contrary to other findings in Madagascar that women are the primary keepers of indigenous knowledge of plant medicines (Sussman 1988), I found that this was not always true. Women's roles in finding and dispensing the medicines were often central, but men's roles were also significant in transmitting knowledge of plant medicines, as will be discussed further.

Whether or not Kala had learned of *volopotsy* as an indigenous medicine for *hantana* from her parents, and brought the knowledge with her, or learned of it after arriving in Ranotsara, I do not know. But she did explain that she had been using it daily on herself and all of her children for the last six months and they seemed to be improving.

"It doesn't look like it's working," I subjectively replied.

"It takes a very long time," she admitted.

I suggested she use Ascabiol and gave her a supply, explaining how to use it and warning her of its toxicity. I emphasized that she should not let any of it get into open sores. Knowing that I was, once again, interfering with the objectivity of the research process, I felt it would be unprincipled to leave the children with such a painful condition that would only worsen when I had a medicine I knew would be effective.

Shortly after this visit, Dr. Tovo came to Ranotsara but Kala did not bring her children to him, later explaining to me that she lacked the money for the medicines he would prescribe and dispense.¹¹

We met a few weeks later in my home. Kala had agreed to participate in a lengthy interview regarding women's health concerns and beliefs. Tonga played outside with

¹¹ There would have been a modest fee charged for the medicines, but in hardship cases where medicine was needed, Dr. Tovo often waived the fee.

some other boys. As we talked, we watched as he kicked a grapefruit around like a small soccer ball. The backs of his legs were charred black like his sister, and so severely infected that the blackened skin was split open with large wounds oozing white and yellow pus, but the injuries did not slow his movements, which were quick and lively.

“Are there any health problems in your family, right now?” I asked.

“No, *salama tsara izahay*,” she answered [we are all healthy].

“What about the *hantana*?” I prompted.

“*Sitrana tsara*” [it is all (well) cured], she replied.

“Did you use the medicine I gave you?”

“Yes, it is all gone, thank you.”

Degas, my assistant, interrupted in English. “I have to ask her about his legs. They are very infected.” I told him to go ahead.

“*Hadiniko!*” [I forgot!] she replied, suppressing a giggle. Yes, she agreed, his legs were quite bad. He had been tending cattle in the woods for Rivo, she explained, and came back itching. He must have rubbed his legs against some type of plant that caused the itching.

I asked if we could look at Tonga’s legs. She called him in, and on closer examination, it was clear his wounds were very infected. They smelled foul and the ulcers had burrowed deep into his flesh, reaching as high as his buttocks. The lymph glands in his groin were swollen the size of small eggs. I urged her to get him to the clinic in Ranomafana for treatment. She answered that she would wait, and when her husband returned from *an-tsaha*, ask him. I also noticed that Tonga was wearing a new necklace,

with a piece of wood and a plastic bead tied around a length of string. I asked what it was.

“*Ody katry*,” she answered, proud to show she me she had, in fact, done something to safeguard her son’s health, despite what I might have thought of his legs.

Katry is an indigenous diagnostic category for fevers and seizures that affect small children. To prevent *katry*, Zanabelo’s cousin, Alarobia, an *ombiasa* and *mpanjaka* who lives in the neighboring village of Ambatovory, prepares amulets for all the local children to wear around their necks. At the time of my fieldwork, he charged 350 fmg (about 10 cents, U.S.) for the *ody katry*, and nearly all the children in the nearby villages wore them.

After she left I asked Degas and Lalao if it was common for a woman to ask her husband permission to get medical treatment for a child. Both immediately corrected me. Kala did not need to ask his permission for medical care, but it would be up to Zanabelo to carry Tonga across the mountains. As such, unless it was such an emergency that another male in the community would undertake the endeavor, Kala was acting appropriately by awaiting her husband’s return and consulting him.

That evening, he came to my home and asked my opinion of his son’s legs. Were they really that bad?, he asked, weighing whether or not he should leave his fields idle to take his son to Ranomafana. I assured him that I was no doctor, but I was very concerned about the infection in Tonga’s legs. I urged him to get him to the doctor as soon as possible, and in the meantime, keep the legs clean and free of dirt. I gave him soap and clean bandages. He thanked me, and the next morning, carried Tonga over the mountains to Ranomafana.

He returned at nightfall, but the parents did not appear to be keeping the wounds clean. The clinic nurse, Robert, who had treated Tonga in Ranomafana, chastised the mother for washing his wounds. He explained that she had probably broken the skin open by repeated washing. Robert gave Tonga an injection of antibiotics and nothing else. Tonga's legs were as dirty when he returned as when he left. The parents concluded that there was nothing wrong with their son and I had overreacted. For the first day after their return, they tied the bandages around his legs, but removed them when they became dirty. Tonga's legs did heal slowly, while the scabies continued to rage through the community, and the babies and children appear to barely notice.

I was not alone in my perplexity at the manner in which an illness that is so miserable to live with would remain minimally treated or even completely neglected. Many of the older residents expressed disapproval at what they described as the laziness of the younger generation. The use of the word *kamo* [lazy] to describe young adults who labor strenuously twelve hours a day, seven days a week, struck me as paradoxical when uttered by local elders (while I found the same adjective, when used by sedentary project personnel and other *vazaha*, as it frequently was, to be plainly racist). Some older people attributed the *hantana* pandemic to the dirtiness [*maloto* - dirty] of the village area, the lack of soap and the lack of money to purchase it, and a lack of attention to personal cleanliness. One person who claimed to have no explanation for why the illness was so neglected was the *ombiasa*, Naina.

"Curing *hantana* is not hard," he said, "if it is caught early. But it is difficult to cure when it becomes serious." Naina listed the many medicines he used to treat skin disorders, only one of which he finds in the forest.

“*Kimboinbohy*, I find in the *savoka* [regrowth], *tainguaka* is a moss. It works well. I find it in the forest sometimes, growing on dead trees, but it is also in the *savoka*. *Sevatrandraka*, *tanamangamay*.” He counted them on his fingers, looking out the window to the forest in the distance. “*Tanamangamay* is found along the road. And *kitsiotsiona* is another good medicine. It grows everywhere. The medicines for *hantana* are easy to find. But they only work if it is caught early.”

“Why isn’t it caught early?” I asked him.

“*Tsy fantatro* [I don’t know],” he answered, “There have only been two people to come to me to be cured of *hantana*. One from here, and my wife, before she died. I cured them both. But others do not come. And now the *hantana* is everywhere, like venereal disease¹².”

Naina didn’t know why people didn’t come to him for treatment. He didn’t think that they went to the *vazaha* doctor either, he told me. “They ignore it,” he concluded. “I can’t force them to come to me. And they don’t use their own medicines, either. Not many people know the medicines to cure *hantana*. We have always had the illness, but not like now. I don’t think many people know the medicines because it was never as

¹² Naina’s remark was revealing, but I did not have any evidence of venereal disease as a health problem. Dr. Tovo diagnosed one person with a venereal disease during the period of my fieldwork, and in discussions with residents it was believed that it was usually an illness of men, and unless a woman has symptoms, residents believe that she does not need treatment. Due to the sensitive nature of the question, I did not pursue much inquiry into people’s experience with venereal diseases. As for AIDS, there was an awareness of SIDA (the French acronym for the disease) by all, and even one person remarked that it was an example of how the illnesses brought by *vazaha* kill faster than the illnesses spread from Malagasy to Malagasy. Surprisingly, however, AIDS has not spread as rapidly in Madagascar as it has in other parts of Africa, and at the time of my departure appeared to be largely concentrated in the port towns and the capital city. How quickly the disease will spread from these urban sites to rural areas is difficult to predict.

common in the past, as it is now. They didn't need to know. Maybe they don't need to know now, either, if they can get the *docotera*'s medicine. It works faster than mine. But it is expensive, so they wait until it is grave."

"Why do you think it is more common now?" I inquired, returning to his previous point..

"I don't know. I don't know what causes it. It is a malady of the skin. People get it from others who have it. *Toaka* [rum] and *sakay* [chile peppers] make it worse. They make it spread. If a person avoids these things, it is easier to cure. It's a good idea to wash if the *hantana* is moist. We have always had it. Now it is very bad, but even if people used my medicines or the *docotera*'s medicine, we would still have it, but it would not be the same." Leavana paused to drink some tea. He was silent for several awkward moments, before he looked up from his tea with a smile.

"The name has changed! Write this down. *Kidea* was the name of scabies in the past, and then it became *farasisa*¹³, but when it started spreading, people could get it just by sitting in the same chair. If you touch someone with *hantana* now, and the liquid from it touches you, you will get it. Soon the whole village got it. That was about ten years ago. That was when the name was changed to *hantana*! I don't know why." He returned to concentrating on his tea, and I diligently wrote down his words.

Why scabies is so prevalent and why it remains untreated remains unclear. But it was clear that I did not notice older people with the disorder, yet infants were certain to

¹³ *Farasisa* has been frequently recorded in colonial and pre-colonial accounts of health conditions on the island to refer to a wide-range of subcutaneous skin disorders.

get it within two weeks of their birth, and young adults were equally susceptible. Naina's children did not have it.

Parasites and Rice Fields

One evening in January, after a day spent visiting sick children, discussing medicines with their parents, and dispensing Nivaquine and aspirin to those with high fevers, there was a familiar knock at the door. It was twelve-year-old Toky's friendly nighttime visit, which had become a tradition of English and Malagasy greetings and riddles, Toky's infamous story-telling marathons, and his delivery of all the rumors I wasn't supposed to be hearing.

This time, however, I was surprised by the visit, because when I'd seen Toky earlier in the day, he was curled up on a corner of the dirt floor in his home, his head burning with fever and his mother feeding him soupy rice between his coughing. I opened the door to find him wrapped tightly in a dirty ragged blanket, the tears falling like rainfall from a face that until that day was perpetually beaming with humor and life.

"Janezi," he cried, "I am getting better since you came. My mother gave me *fanafody gasy*. It was *ahibalala*. Here," he said, offering me a torn slip of paper with the words *ahibalala aminy sempoitra* [ahibalala for coughing] written carefully in ballpoint ink. "I already wrote it down for you so you can just put this in your notebook, and write, 'Toky's medicine'." He proudly smiled through his tears.

"Toky, you are so sick, you should be home sleeping. Come in, it's cold out there."

He came into the room and, as always, looked all around for signs of anything new. Noting some chocolate on the bedside table, he glanced at me with a teasing smile on his pale wet face.

“Here, Toky, I think you need some chocolate.” I gave him a piece as he said, “Thank you,” in crisp accented English. Happy, but still wrapped tightly in his blanket, he sat back in the comfortable wooden chair I’d had hauled like a colonialist halfway across the island, and savored the chocolate in teeny bites. When he had finished, he took a deep breath and made his announcement.

“Janezi,” he said, “I am afraid I am going to die, just like all my friends.”

There was a strong melodrama to his words, but the truth they spoke could not be easily dismissed. The truth was, in a lifetime that wasn’t much longer than my graduate studies, many of his friends had died, of malaria, respiratory problems, unexplained sudden illnesses. Today, with nearly every child locked inside his or her house and their parents staying at home to tend them, the threat of death to more children was very real and in everyone’s minds. Two important elders had died in the last six weeks; both had been strong and seemingly healthy. And three weeks prior, six year old Tsaralahi had died of malaria. Three more children would die within the month, with many more to follow. So while I had the sense that Toky’s mother had sent him to play upon my sympathies and perhaps get cash or medicines or food, I also knew that what he spoke rang true. Toky might well be next, just as anyone could follow.

“Toky, you will not die,” I insisted, “you are too smart for the *bilo* to catch you, and no one will let you die. We need you to keep us laughing!” I tried my best to cheer

him up, but I have never been very good at that sort of thing. I knew he was in no mood for lies.

“I am afraid I have too many worms,” he said, patting his swollen belly. It was true, Toky’s belly was as bloated as a pregnant woman in her seventh month. There was no doubting that he had a belly full of worms.

“This morning I counted iPaul’s worms. There were sixteen! Last week there were only seven!” Ever since learning, from the traveling health team, that they counted worms in stools, he had set out to monitor his little brother’s health. Toky doted on his little brother as his greatest pride and happiness in life.

“I could not count all the worms *I* had, there were so many!”

“Yes, you do have many worms, and I can give you medicine for that, but they will come back. The whole village has worms.”

Toky knew this. Everyone knew this. Worms were not something they believed were natural, but suffering with them had become natural. Everyone I spoke to in my interviews and informally, knew how it was that worms entered the body. The health team had told them, and they saw for themselves the worms swarming in the irrigated rice fields.

I was stunned, myself, when I first trudged out to Philippe’s rice fields to join the women he’d hired to plant rice, and took a look at the water. As elderly Nirina and young Colette both moved aside to make a place for me between them, I scooped up a batch of rice shoots, and shoved the clumps of muddied roots into the warm brown water, sinking them into the mud until they stood erect, their bright green tips pushing through the

surface. The water was teeming with long, serpentine worms, snaking through our ankles and hands like ribbons of white.

I asked Nirina and Colette about them, as we planted the new rice shoots.

“They’re everywhere, now,” Nirina said, “but they aren’t so bad in the *tavy* fields. They like the water.”

“We are used to them,” Colette laughed, scooping up a handful of muddy water and watching the worms wash over her hands. She laughed at the look of disgust that came over my face.

“What do you mean, Nirina,” I asked, “that they are everywhere *now*? Has it changed?”

“Oh, we’ve always had worms,” she said, making a dismissive sound with her lips, “but now that we are working more in the rice fields, we have more than we had *taloha*.” Again, that vague but common word for the indefinable past.

“You will get used to them, too,” Colette laughed, “and your face will stop looking like that!”

Later that evening I asked Lalao, the woman who cooked and catered to me, for her opinion. Her father, Rivo, controlled many of the rice fields.

“There aren’t as many in the *tavy* fields,” she agreed, “but if the workers wouldn’t drink the water, they wouldn’t get so many worms.” Her own siblings suffered from coughing and scabies, and while I had no doubt that they, too, had worms, they weren’t as obvious as among others.

I explained about other ways worms could be transmitted, from feet to hand to mouth. She agreed that that was probably one way they were spread.

“But there is not much we can do about it. We have to work in the rice fields.

But the more money we make, the more *tavy* we can clear. So if we work more in the wet rice fields, we can farm more *tavy* rice, and then maybe there will be fewer worms with time.”¹⁴

I reflected on this conversation as I sat with Toky, holding his bloated belly and looking to me with sad pleading eyes, from a face well suited to dramatic exaggeration. “I cannot get better,” he said, “because I must sleep on the wet floor all alone. Now that I am sick, I can sleep with my mother, but when I begin to get better she will make me sleep alone again, so that she can sleep with iPaul.” I knew he was hoping I’d offer my own dry home, but I feared losing my privacy altogether once he moved in. Selfishly, I offered my sympathies but not my help.

“You will get better,” I promised, “and if you don’t, we will get you to the hospital.”

“But then I will not be able to go to *school*,” Toky pleaded, desperately seeking an angle to get me to offer my home. “I will forget the English you have taught me, and you

¹⁴ Lalao’s claim that increasing wealth through the expansion of irrigated rice fields supported Ferraro’s (1994) claim that encouraging wet-rice expansion did not lead to a decline in swidden production as the RNPP hypothesized, but instead, became a means of increasing overall rice production. Lalao did not comment on how it was that more fields would be cleared with the prohibition of further burning, nor did I ask given that she was not a landowner herself. My own experience was that existing fields, and lands outside the boundary of the park, were absorbed by wealthier people who rented or bought the fields of their less wealthy neighbors. As such, increased wealth through the limited agricultural assistance offered by the project was more likely to foster the consolidation of landholdings among an elite few, increase wage work by former subsistence farmers, and increase production of *tavy* currently in fallow.

will forget the Malagasy I have been teaching you. You won't be able to finish your work."

I assured him that would never happen. I would be sure he didn't forget his English lessons, and he could continue coaching me.

But he went home that night to sleep in the wet puddles that seeped through the cracks in the mud that were the walls of his home.

Toky did recover from his fever and cough, though his belly stayed bloated. Within a few weeks the cyclone beat his home senseless. Toky had just enough time to grab his school books and their only cooking pot while Colette snatched up iPaul and they burst out the door in the slamming rain, just as their home caved in. The next morning I dropped by with my camera, taking a picture of the pile of mud and sticks that was their home, Colette standing next to the pile, laughing sadly at yet another disaster in her life.

Toky began using my house to do his homework, but slept each night on a different dirt floor, rotating from neighbor to neighbor until my research concluded and his mother's work with me had finished. Then they returned to her natal home, her husband having divorced her when he found a younger wife. iPaul, like another of Colette's sons and so many of Toky's friends, would soon die.

These stories of chronic illness illustrate the way that discomfort and illness have been naturalized by many who, although not necessarily regarding themselves as "healthy," have surrendered to the futility of trying to combat so many health concerns. Plant medicines are used, but with the daily constancy of discomfort, finding and preparing medicines can be yet another chore in lives marked by interminable labor, if just to find

water, cook a pot of rice, or earn enough to buy a bit of petrol for the comfort of a small flame burning in the night.

And while Nety's death did not arise from one of the more common chronic illnesses, her death was in all probability brought on by her lack of medicines to control her seizures. Nety, a Tanala, was fully informed and aware of her epilepsy and the medicine that would control it. Contrary to views that the Tanala are hopelessly tied to superstitious beliefs regarding illness, the multiple explanations that were offered to account for her death never departed from the general acknowledgment that she had an illness that was treatable by Western medication which she could not afford.

And although of the wealthier lineage and closely tied to the village elites, if one can call farmers who themselves work so close to the bone "elites," as an unmarried mother Nety lacked the cash to spend on medicines, and did not have land of her own which she could employ toward income. As such, Nety's gender and youth countered any benefit her lineage bestowed upon her, and her ethnicity failed to account for the fact that her illness had not been treated. By all accounts, Nety had been taking Western medication to treat her epilepsy; with the birth of her child two years previously and another on the way, her medicines became a luxury she could no longer afford. Her family concurred that the plants and other substances available in or near the forest could not control her seizures as could the pills she had once obtained from the clinic in Ranomafana.

And Lanto, herself a virtually landless woman, for what was left of her land after selling it to Rivo was beyond her ability to farm once she became sick and her son went to work for Raymond, was also unable to purchase the medicines she believed would relieve

her respiratory problems. From a lineage reputed to be descended from slaves, middle aged and unmarried, she was a social outcast, even if sister to the *mpanjaka*. Her lineage, gender, and marginality in the community contributed to minimal social support in maintaining her fields and restoring her health. Her poverty thus exacerbated, her lack of access to medicine, health care, and knowledge contributed to her chronic illness. That she was Tanala seemed to have little bearing on the treatment strategies she pursued; she herself showed little faith in the healing faculties of Rakoto who, like all the *ombiasa* Ranotsara and nearby, was of the Zafinaraina lineage.

Conversely, Kala and Zanabelo both identified themselves as Betsileo, but this ethnic affiliation did not correspond to a more Westernized concept of illness and healing, as the hierarchal ordering of ethnic categories would suggest. While Kala treated her children's scabies with local plants, she and her husband both remained unconcerned as the condition worsened and became infected. And the clinic nurse who treated them either accepted their interpretation of how the illness was caused and encouraged them not to clean the wounds, or they interpreted his advice to correspond to their beliefs. Moreover, while they did not seek out indigenous treatment for the condition, they did seek out the preventative powers of a local *ombiasa* (of Zanabelo's Zafinaraina lineage) to ward off *katry*, an indigenous diagnosis for fevers and seizures. These actions suggest that ethnic affiliation cannot be ascribed to indigenous explanations for health problems, nor to treatment strategies. The lineage of Kala and Zanabelo was more likely to explain their trust in the powers of their cousin, an *ombiasa*, than was their ethnic affiliation, but lineage alone could not explain their actions, as they handled each illness episode separately, seeking Western medicines when they were affordable and available (when I

provided them or the funds to purchase the antibiotic injection), indigenous plants when the illness was deemed ordinary and treatable, and shamanic intervention when the illness was believed serious but unnatural, with cosmological origins.

In the following chapter, I continue this discussion by illustrating how the medical belief systems of the people of Ranotsara known as "Tanala" are anything but homogenous. Competing, contradictory, and confusing explanatory models of illness and treatments to restore health are alive and well among these People of the Forest.

Chapter 7

LIFE AND DEATH IN RANOTSARA

This chapter focuses on the multiple explanatory models and treatment strategies employed in the community of Ranotsara, suggesting that the concept of an indigenous medical system is problematic. Moreover, the variety of beliefs and practices that comprise the local response to illness is not at all related to one's ethnicity; rather, lineage, age, gender, and class are far more salient variables. Beliefs and practices related to health and healing are further conditioned by the access one has to health resources. The relationship one has to productive farming land, labor, and cash income, is the most important factor shaping one's health; this economic role further shapes how the relationship between the forest environment and health is perceived and experienced. Nonetheless, despite differences among community members in terms of health and material comfort, even the most land-rich of residents are impoverished by Western standards and this impoverishment, combined with limited access to Western health resources, have contributed to illness and death for all.

Treating, and Not Treating, Illness

Baoroa sits on a plank of wood that is her bed on the second floor of her family's home. The walls and thatched ceiling are lacquered from smoke; a small fire burns in the corner of the room over which a pot of rice is cooking. In her eighties and widowed for several years, Baoroa's days are spent cooking, caring for her grandchildren and greatgrandchildren, and resting – shortness of breath and severe arthritis limit her activities outside the home. She says it has been over a year since she has been to the river to bathe.

Baoroa's husband was a well-respected *ombiasa*, although she won't admit that to the *vazaha*. What she will admit is that her husband's ancestors were among the *andriana* founders of the village, and as such, her social status is very high, a status she holds with pride as the eldest matriarch of the family. At her feet sits the wife of her grandson; the young woman, Jeanine, has brought her eighteen-month-old son from a distant village to consult her mother-in-law regarding the health of her boy.

The boy appears to be no older than six or seven months. His thin legs are folded like little chicken wings on which he sits, his arms are like tiny twigs. Next to him, his cousin iPaul, who was born just two weeks before him, rests on his mother's lap. Colette, iPaul's mother, rarely without a side-splitting laugh bursting from her mouth, is now very grave. She puts her fingers around iPaul's leg, to show how fat her boy is. Jeanine, in good humor, pinches the sagging skin from her own son's thighs to show off the comparison.

"He is too *kamo* (lazy) to walk," she says, as if this explains his skinny legs. His head rolls limply back to stare at the shiny black ceiling. "He should be more like iPaul."

"*Tsy ampy vitamine!*" Baorua explodes in disgust ("Not enough vitamins!") and Colette echoes the sentiment, "*Tsy ampy*," shaking her head. Jeanine merely smiles, and continues her task.

She is mixing an ochre-colored paste of crushed roots from the wild ginger plant (*tamo-tamo*), with water, and dabbing it on her child. Baorua instructs her in the proper method. First, the paste is rubbed on the child's fontanel; next, it is rubbed in bands around the neck, arms, and thighs, "where he is *manify-be*," Colette explains (very thin). "She did not do this when the child was born, and so *biby* have entered the baby. "That is why he is so sick."

Later in the day there was much discussion among the women regarding the baby's illness. I wondered why it was that if the family believed the baby did not have enough vitamins, rather than give him food they painted his body with crushed roots.

"Baorua said that he did not have enough vitamins. Do you believe that is why he is sick?" I asked a small group of women who had come to my house for tea by the fire.

"Yes, *tsy ampy vitamine*," Lalao said with sadness, as Nirina shook her head sadly in agreement, "*tsy ampy....*" she concurred.

"Why don't they feed him? Because they don't have enough money?"

"No, they are very rich," Colette responded in envy, "Did you see her nice clothes, that warm sweater she wears? She has many fine clothes, like you. They have much land, and many crops, and they eat *laoka* (sauce, usually of greens or beans, that is served on rice) every day. They are not too poor."

"Then why don't they feed him?" I asked, bewildered.

"I don't know the reason," Lalao answered, "She also has a daughter, and she is very fat."

"Maybe she thinks girls are better than boys." I suggested.

"No!" Nirina protested, shaking her head vigorously, "Tanala love *all* babies."

"Yes," Lalao agreed, "there is no difference. But when he was small, he was very sick. Maybe she thinks that there is no reason to feed him because he will die. After he was sick, he became weaker and weaker, and maybe she thought he would die."

"Does this happen often?" I wondered, "people don't feed their babies if they think they will die?"

"No, not often. But maybe that is the reason," explained Lalao, "I don't know why she does not feed him. She is not wise [*tsy mahay izy*]."

"If she would not feed him, why didn't the family do or say something?"

"Because that is not our affair [*tsy ny raharahan' izahay*]," answered Colette, Jeanine's sister-in-law, "It is the business of the mother and father to feed their children."

"But it was different in the past," Nirina added, "In the past, if a child was hungry, the family would give him food, but now, life is hard, there is not enough money and not enough food. People eat in their homes and do not share much food because there is not much to share."

"No, there is not enough," Colette agreed.

I often heard about the better life *taloha*, in the past, and though I asked, it was never clear how far in the past it was when things were better nor, as is the same in America, if life really was better in the past, or if memories had made it so.

"But if he is sick because he doesn't have enough vitamins," I asked, "why are they giving him the *tamo tamo*?"

"Maybe there is another reason he is sick," Lalao suggested, "Maybe Rakoto will cure him. He is knowledgeable [*mahay*] about the illnesses of the spirits [*aretina biby*]. That is why they took him to see Rakoto."

Rakoto had accepted the mantle of *ombiasa* with the passing of his father, a few years before. Well versed in ceremonial, learned from his father, his own knowledge of local illness categories and the plants used for treating them were either very limited, or it was his willingness to share his knowledge with me that was limited.

But Rakoto could not cure the baby, he later confessed to me, because the parents had waited too long before applying the *tamo-tamo*. By waiting so long, the soft-spot on the top of his head had grown so big it reached the child's forehead. So Rakoto sent the child to Letsara, a man who lived in a village in the hills above Ranotsara, and was known for his expertise with *ody loha* (head medicine, or the medicine used to seal the soft spot; noted for being different for each family).

Letsara gave the baby a tea, and made an inhalation for the child, but it was never revealed to me which plants were used. He also made a paste from *fandrinkabodisa*, a thorny vine found in the secondary growth outside the forest, and added it to the *tamo-tamo*, again painting bands on the wrists, knees, and ankles, and covering the soft-spot.

"Rakoto told them to use the *tamo tamo*," Lalao continued. "Maybe the baby will be able to walk if they use the *tamo tamo*."

"But he cannot walk because he needs food," I said, having difficulty accepting painting the baby with roots as an effective treatment for starvation.

"He cannot walk because his legs are too thin," Colette patiently explained to me. "Our babies were born at the same time, but she did not eat much even when she was pregnant. Then her baby became sick and he didn't eat much. iPaul eats all the time!" she laughed as we watched him struggle with a banana, "and so he has fat legs and walks all the time. But her baby is too weak to walk, he is not strong at all. He is too weak to eat. If he has *vary* [rice], he spits it out. He cannot even eat *vary*. Maybe the spirits have made him sick because she did not follow the *fomba* [custom] of putting the *tamo tamo* on his head when he was born. The spirits entered his body and have made him too sick to eat."

"She should give that baby *laoka*!" Nirina said in disgust, spitting out a wad of *paraky* [chewing tobacco] as she set down her empty tea cup and hobbled off to find some booze.

By late afternoon the baby was unconscious. Baorora and her eldest son, Koto-Francoise, agreed that the best thing to do was to send the baby to the hospital in Ranomafana for treatment, because he would surely die if he remained in the village. They would continue the *tamo tamo* treatment, however, because unless the *cause* of the baby's illness – his failure to eat – was not addressed, the *effects* of the illness would worsen.

Jeanine, accompanied by Rakoto and Koto-Francoise, who carried his grandson, reached the hospital by nightfall. The hospital physician diagnosed the child as suffering from malnutrition and dehydration. He was treated with antibiotics and vitamins, and told that there was no bed available for him to remain there. The family kept him with family in Ranomafana and while there he received many visitors. Jeanine obtained powdered

milk (diluted with local water) and meals for the baby. She began feeding him watery rice (*vary lena*, rice served in its cooking water, and given to the sick), with *laoka*.

The baby regained consciousness and after three days in Ranomafana Koto-Francoise carried him home, hiking the nine kilometers over the mountainous terrain. He reached the village by late afternoon, the limp baby wrapped in a blanket on the hot sunny day. Several villagers met him at the edge of the village to celebrate the return of the sick baby, following the family home to learn the news in Ranomafana and share the family's joy.

By the end of the night, the baby had died.

The Malagasy Medical System

Understanding the Malagasy medical system necessitates understanding that it does not exist. The very concept of a system – be it an eco-system, social system, or medical system – is a reified concept that exists solely in the mind of the observer. The observer selects, discards, arranges, categorizes, and ranks elements of the system in such a way as to discern patterns. In medicine, these elements can be observed as signs, symptoms, causes, processes, diagnoses, treatments and outcomes – how these elements are grouped and evaluated constitutes the patterns of the medical system.

Medical anthropology has attempted to illuminate such patterns from their multiple perspectives, in order to better understand differing ways of conceptualizing health and illness that challenge our own perceptual patterns of health and illness. By focusing on alternative healing systems or indigenous knowledge systems, however, one is almost forced to think in terms of a shared concept of reality grounded in social structure and

history. There is indisputable value in doing this, but nevertheless, individual experience, faith, character, intellect and knowledge penetrate the social system in such a way that no two individuals in a given society conceptualize the illness experience, nor their health needs, identically. Nirina, for example, viewed the illness of Jeanine's baby in terms of nutrition, while Rakoto viewed it in terms of social discord, specifically, the violation of the *fomba* and the entry of malevolent spirits.

Were these differing views related to the social roles of Nirina, an elderly female who had lived in cities and had considerable exposure to colonial medicine, and Rakoto, a young male *ombiasa* trained in the use of forest medicines for treating illnesses caused by spirits? Perhaps. Nonetheless, Baoroa, at least as old as Nirina, viewed the illness in much the same way as did Rakoto, that is, in terms of social discord, even though Baoroa acknowledged the baby needed vitamins. Baoroa's deceased husband, and now her son, were well respected *ombiasa*. Nirina, conversely, while she herself was regarded as knowledgeable regarding plant medicines for children, and covertly visited *ombiasa*, considered herself a devout Catholic. At least publicly, she would promote the use of Western medicines and vitamins for the child. That there is a multiplicity of views and explanations for illness and healing in Ranotsara, then, is as true in the forests of Madagascar as it is in East Lansing, Michigan. But I found no evidence co-relating differences in these views to one's ethnic identity. Just as concepts of health and healing in East Lansing are understood in terms of education, family income, and social power, so too did I find these same factors having more to bear on explanatory models in Ranotsara than did ethnic identity. For example, Baoroa and Rakoto were among the few in the village who identified themselves as Betsileo, and tied this identity to their social status as

"*andriana-be*" [very royal], a status they claimed due to their descent from the Zafinaraina line that was not tainted by the marriage to *andevo* [see Chart]. Nirina, conversely, reported that she had once been Betsileo, but became Tanala. It is not clear if her change in ethnic status was associated with her marriage to Faly, a Zafindraraoto, or her many years of living the Tanala life of the forest. What was clear was that she continued to identify her ancestry as Betsileo, but regarded her age and experience as a rural farmer and woman to be the defining characteristics by which both her Tanala ethnicity and her world views were formed.

By stepping outside the "medical system" to focus on individual variations, such as those expressed by Nirina and her close friend Baorua, one is brought closer to understandings of power and the relationship between power and knowledge. Although having very different views regarding the illness of Jeanine's son, Nirina and Baorua did not differ in any socially-relevant way except for the status brought them through their marriages. Nirina, having been born into the Zafinaraina *andriana* lineage, lost status with her marriage to Faly, while Baorua, originally from Ranomafana, gained status through her marriage into the Zafinaraina. Ironically, it was the marriage of a Zafinaraina (Ramistiry) to a Zafindraraoto (iKalahafa) in the previous generation which elevated the status of Baorua's husband, because his descent from Ramistiry's brother, Ndrianomy, who married *andriana*, rendered him "more pure" than his cousins. This single accident of heritage became a defining attribute in one's identity in Ranotsara, as the family of Baorua visibly separated itself from the more materially-advantaged family of Rivo (grandson of Ramitsiry), even maintaining a separate *trano-be* so that burial of their dead would remain undefiled by either the Zafindraraoto or those who married them.

As their material status diminished in comparison to their cousins (Rivo, Philippe and Pascal), however, it became even more important for the family of Baoroa to adhere to the social supremacy of ancestry. The role of Rakoto as *ombiasa* therefore served as a direct conduit to this ancestral realm. It was not surprising then, that in explaining the starvation of their kin, they would focus on this violation of tradition, while Nirina herself took the more pragmatic approach and suggested the child needed food.

Thirty years ago, Glick (1967) raised the issue of power in terms of medical anthropology and medical systems, in his discussion of ideas regarding sources of disease-causing power. "One must learn where people believe power to reside or inhere; and one must learn how they endeavor to put it to their own uses" (Glick 1967:34). Ancestry has become this locus of power in Ranotsara, and reflects some similarities to Glick's own findings.

Glick's study of a medical system in the New Guinea highlands used the concept of power to understand how health and illness were patterned and experienced among the Gimi. By focusing on medicines as having social power, Glick showed that the local pharmacopeia extended beyond the "efficacious" substances a Westerner might regard as significant. He found that illness, as a social process evoking a response within the medical system, determines health needs. As such, medicine "needs" extend well beyond those remedies judged as valuable by Western researchers, and the therapeutic substances thus sought by the Gimi, as by others, are possessed of a power to heal, whether that power be measurable in the laboratory or not. For Baoroa, the yellow-ochre powder of the *tamo-tamo* root possessed a social power that Nirina's *laoka* [sauce] did not.

As Jeanine's son suffered from malnutrition and the family sought – in differing ways – strategies for treating his illness, another member of the community fell sick. Solo was a young man, in his early twenties, recently married and the father of a young boy. As the eldest grandson of Kotomahay, in line for the position of *mpanjaka* of the Zafindraroato lineage, Solo's social status was among the highest of his age-mates; his economic status, however, was among the lowest. He and his wife, Celine, and their son, Jean Elie, lived in a small one-room house, about three meters by three meters. The house was in poor repair and offered minimal protection against the heavy rains. They had very little land, which did not produce enough food for the family. Indeed, their crops and income were so minimal that they often went without meals altogether. Jean Elie, about four months of age, was severely malnourished, looking barely more than four weeks old. His yellowed skin was covered with scabies lesions he'd had since birth, and his scalp was raw from untreated cradle cap which had turned to open sores and become severely infected.

Seventeen year old Celine had one year of schooling, and could neither read nor write. She was regarded among the other women in the community as very nice but extremely naive, not even understanding, some women giggled, how it was that she had become pregnant when she began sleeping with Solo.

In mid-July, Solo fell ill late in the day. After working for wages in the fields of the Zafinaraina, he began to feel cold and his head ached. By early evening, his chest was hurting, and by the following morning, his stomach hurt, he had diarrhea, and his legs were sore. Throughout the morning his whole body hurt, and he described the pain as

moving all over his body. By noon, however, his headache had cleared and the pain had settled in his stomach and the bones and joints of his legs.

The description Solo gave of his illness, as having begun in his head and progressed to his chest, then his stomach, then legs, led his family to conclude that this was an unusual illness marked by a unique progression from his head downward. This was clearly not an illness of God, but instead, suggestive of either *mosavy* (witchcraft) or punishment of the ancestors. Therefore, it was necessary to consult an *ombiasa*.

Naina was called in to diagnose Solo's illness the first night he fell ill. He arrived at about eight in the evening, after dark. He said he found Solo unconscious, and the family told him that Solo had been trembling. Not knowing the illness, he consulted the *sikidy*. The *sikidy* is a divination system introduced by Arab traders in the fifteenth century. Linton (1933:203) suggests that the term *sikidy*, when used by the Tanala Ikongo, refers to all types of divination, including divination by water, sand or mirror, as well as by seeds. My own experience, however, was that that in the region of Ranotsara, the term referred solely to divination by seeds, which Linton suggests is how the Tanala Menabe use the term. (When asked about the difference, the residents of Ranotsara indicated to me that they were unfamiliar with the ethnic distinctions of Tanala Ikongo and Tanala Menabe.)

According to the *sikidy*, Naina explained, Solo's illness was very grave and had been sent by the ancestors to punish him for the way he had been treating his grandfather, Kotomahay. Naina asked Kotomahay if Solo had upset him, and Kotomahay replied that he and Solo had been fighting because Solo was not behaving like a grandson and showing him proper respect. Naina explained that in order to restore Solo's health, his

grandparents, Kotomahay and Soary, had to show forgiveness by blessing Solo with water in which the leaves and stems of the *maniny* tree (found in the forest), and raw white rice, were added. In so doing, he explained, the ancestors would be satisfied that order was restored.

While the *ombiasa* and the family were unanimous in believing the illness to be caused by the ancestors, they at the same time believed that the cold, rainy weather caused the symptoms of the illness. In effect, Kotomahay explained, the ancestors were upset with Solo, and therefore, by attacking his strength, or immunity, caused him to be susceptible to an illness brought by the weather. Consequently, Naina also prescribed a tea made from the leaves and roots of *ahibalala*. As discussed in the previous chapter, *ahibalala* is a plant that grows in the *tavy* fields and is known by virtually everyone in the village as an all-purpose cold and flu remedy. Family members explained that it was very effective for *tazo*, or fever, and works in the same way that Niviquine works in treating fevers. Moreover, it was said to be effective for stomach disorders, and so he thought that it would help Solo's fever and stomach upset.

Consequently, Naina's treatment was aimed at not only restoring social order (the cause of the illness), but at healing the symptoms of the illness as well. My visit, however, altered the treatment strategy of the family. The moment I began asking questions regarding the medicines Solo had taken, I was asked for aspirin. I explained that although I had aspirin, I did not know if it would be a good medicine for Solo's illness, because it would upset his stomach. Kotomahay, a village elder whose knowledge of plant medicines was well respected in the community, asked if I could give his grandson something else, if aspirin were not effective. Although I reminded the villagers, almost

daily, that I was not a *doctera*, and they did understand the limits to my knowledge, there was no escaping the fact that I had medicines. I indicated that I had Nautamine, which was effective for treating upset stomachs, though it would not really treat his illness. No matter, Kotomahay thought Solo should give it a try. As such, I did give Solo some Nautamine, and within moments of swallowing the bitter pill, he rose from his sickbed and announced that he was much better.

But Solo was far from better, and as the day progressed, his family determined that he needed to recover from the illness in order to fully regain his strength. He spent the following week huddled in a dark corner of his grandfather's home, receiving visitors. His grandmother cooked for him, though he ate very little. Chickens were killed and boiled, and Solo served the meat and broth for his strength. But his illness, rather than diminishing, grew stronger, and soon he was coughing. Meanwhile, his grandfather, Kotomahay, also took sick with a headache, and stripping off his clothes and wrapping himself in a burial shroud, he, too, huddled in a corner of his home, moaning audibly as he received visitors. While Kotomahay indicated that he had the same symptoms as Solo, he told me that he did not think the illnesses were related, but that he was having a heart attack.

Village gossip, however, suggested that Kotomahay did indeed think his illness was related to his grandson's sickness. Shortly before Solo fell ill, there had been a Saturday night drinking bout among some young men in the nearby market town of Masomanga. After many glasses of *toaka gasy*, a healthy young man fell into a coma and died shortly after. His death, like all deaths from *toaka* ingestion, was attributed to *mosavy*, or witchcraft. Legend has it that several years back someone from Ranotsara had

died after drinking the *toaka* brought by a visitor from Masomanga. That visitor was thereby marked as a *mpamosavy*, as was the woman who headed the household he was visiting in Ranotsara. Death from *toaka*, something people drank daily, was not regarded as normal. Withcraft was obvious.

As such, the death from *toaka gasy*, in a healthy young man no less, was judged by many people to be the work of a witch, and that witch was undoubtedly the woman in Ranotsara who had hosted the stay of the visitor who had poisoned the *toaka gasy* he brought to Ranotsara several years back. In revenge for the recent death in Masomanga, some villagers speculated, a *mpamosavy* had probably been called upon to curse someone in Ranotsara. Solo's illness, therefore, marked him, and his family, as somehow linked to this *mosavy* business (while no one would name the witch, I was told that she was already grown and her husband had left her; that she was said to be of the *andevo* caste was also significant.)

Consequently, there were two simultaneous explanations for Solo, and then his grandfather, falling ill – one was that the ancestors were displeased with the way that Solo treated his grandparents and had cursed him with an illness – Kotomahay's response to Solo was regarded by the ancestors as equally disgraceful, and so he too was struck down. The other interpretation was that Solo and Kotomahay had been struck ill to avenge the *mosavy* death of the young man in Masomanga.

Kotomahay recovered, while Solo, either for his recovery or protection, it was never really clear to me, was sent to distant relatives where he could have "new air."

Within a few months, however, Solo's son died from malnutrition, never having been served the chicken that was sacrificed for his father. Celine told me she did not have

enough milk for the baby, and the food for the family was so scarce they could not give any to the baby, who was too weak to chew rice. "*Ahibalala*," she told me, "is the only medicine I know."

My initial reaction to these illness episodes was to wonder why it was that Solo's illness – which from my perspective appeared to be a common flu – received so much attention, while his son's malnutrition remained neglected. The community did not hesitate to rally for Solo, yet did nothing to intervene with his son's health, just as no one would intervene to care for Jeanine's starving son – except to paint rings around his twig-like limbs. How could the community allow children to starve while adults with upset stomachs were nursed day and night?

The answers to these questions came bit by bit over the next few months, as Solo slowly recovered, and his son continued to waste away. While I focused on what I perceived to be ignorance – a failure of people to recognize the severity of malnutrition as compared to vague aches and pains, the people of the community focused on issues of power. And much of that power centered on one's relationship to the forest, that is, how one was, or was not, empowered to control the land and resources of the forest that surrounded them.

Although Solo's grandfather was a well-respected community elder in line for the position of *mpanjaka* of the Zafindraraoto lineage, the inflation of recent years contributed to the economic disempowerment of Solo's family such that Kotomahay was frequently forced to labor in the fields of Rivo, Philippe, or Pascal for wages of 1,500 fmg a day (approximately 35 cents at the time of my fieldwork). Nonetheless, Kotomahay regarded

himself as better off economically than when he was younger, because his children were grown and he was no longer responsible for their care, despite the fact that he continued to feed several of his children and grandchildren. And although he had good irrigated rice fields, as each son married, he gave them their own land, thereby reducing his own land holdings.

Unable to expand his *tavy* fields into the newly-created national park, Kotomahay's access to land and forest resources did not expand as his children matured and took possession of their lands. Compounded with the escalating cost of living, Kotomahay's wages became necessary for family survival. Similarly, each of his sons, and his remaining daughters, was forced into wage labor for the Zafinaraina as well. The result of Kotomahay and his grown children working for wages while simultaneously working their irrigated and swidden rice fields, was that they had less labor available to work their own fields and their harvests declined. Declining harvests led to the need to borrow rice from the Zafinaraina, which were repaid in double the following years. As such, much of their own lands were devoted to growing rice for the Zafinaraina.

Therefore, by the time Solo married and took possession of his rice fields, there were no other family members available to help him and Celine work the lands, while Solo also found himself assisting in clearing the lands and harvesting the crops of the Zafinaraina lineage, in order to have cash income. The result was that Solo had access to land, but lacking access to labor and his own labor sold for wages, he was unable to maximize the production of his land. In short, he was extremely poor, and did not have enough food to feed himself, his wife, and his son.

Had community members intervened by calling attention to Jean Elie's malnutrition, they would have had to confront the fact that Solo was unable to feed him because he and his family were economically disempowered, and their labor power was therefore devoted to wage work, rather than working their own lands. As such, their relationship to the land had changed with the changing social and economic structure of the village.

As for ignoring the fundamental reasons they were impoverished and simply giving food to the boy, community members expressed the fear that to give food to others during periods of scarcity would cause them to become malnourished themselves. Kotomahay himself told me that this was a recent phenomena; during his parents' time, food and resources were shared and those who lacked were provided for by those who had more. But why, then, didn't Kotomahay or his sons give food to the boy? I do not really know; Kotomahay was a kind and generous man. Perhaps he and his family had internalized the fear of going without.

Kotomahay expressed his frustrations at not having the power to care for his family, despite his role as village elder and future *mpanjaka*. His own sense of disempowerment was reflected in his conflict with Solo – feeling that his grandson did not respect his authority, he promoted the view that the ancestors had weakened Solo as punishment, just as he later accepted the view that Solo's illness may have been caused by the ever-powerful *mpamosavy* of Masomanga. This latter view explained why he, too, became sick and thereby "disempowered" even more. Feeling weakened economically, socially, and cosmically, it is not that difficult to accept that Kotomahay and others in his

family may have felt that they lacked the power to help Jean Elie, whose wasting was a reflection of the family's loss of power.¹

Conversely, Jeanine's son had apparently starved to death, despite his family's economic power. And while his malnutrition and death prompted much speculation and difference of opinion, it did not prompt much intervention. Is it that children are regarded as unimportant? Quite the contrary, a child's death, while commonplace, is regarded as a terrible tragedy. But to intervene with how a parent cares for their child is to subvert their most fundamental power, that is, the power to care for one's family, while contesting an even greater power – the power of the ancestors to intervene. As economic power diminished for nearly everyone, families came to rely more and more on the power of the ancestors to take care of social problems, because most people viewed themselves as socially disempowered with the changing economy.

Another factor contributing to the failure of the community to act, was that Jeanine's husband was regarded as *andriana*; those who were allegedly *andevo* could not intervene, while starvation was not regarded as an illness of the *andriana*. It had to be something else. Respecting the power of the spiritual world, it was understandable that the spirits would enter the boy's body and make him sick. And if Lalao was correct in her view that after the boy had become sick, his mother felt that there was nothing she could do to help him to survive, her own sense of disempowerment may have contributed to his demise.

¹ I offer these explanations as my own, possibly mistaken, interpretations and they may or may not accord with those of the people to whom I imply them.

Despite the conflicting views as to where power resided in respect to the boy's health and sickness, whether it be in *tamo tamò*, the parents, the spirits, or the hospital, the consensus was that for others to feed Jeanine's son, when she and her husband could afford to feed him, would take limited food away from one's own family. Howard and Millard (1996:8) noted the same pattern of neglect in their study of the malnutrition in East Africa, arguing that "In the period of food crisis, many sought to protect the members of their own households by denying assistance to poorer kin who had little to offer in return in the cash economy." In Ranotsara, those without land or cash resources could only offer their labor in exchange for assistance.

At the same time that kin turned their back on the plight of Jeanine's child, to suggest to Jeanine that she feed him would be rude. To call on the ancestors for intervention, however, would enable the child to receive care. Moreover, in so doing, the power of biomedicine and the power of forest medicines were invoked as his care gained the attention of both *ombiasa* and the hospital physician.

In this case, the family had access to indigenous medicines, particularly through the family connection to Rakoto and Baoroa. Yet in the early stages of the boy's life and sickness, they rejected it. Family members allege that the mother – an outsider from a different village – lacked access to knowledge, that she, as the primary caretaker of the child, was ignorant. Her ignorance, it was said, explained her failure to eat well during pregnancy, to follow the *fomba* of protecting the fontanel with *tamo tamò*, and to feed the baby adequately.

Thus, the starvation of two babies, one from the Zafindraraoto lineage, the other from the Zafinaraina lineage, were viewed and interpreted differently by the community.

Jean Elie's death was regarded as related to poverty, and he wasted away slowly, with no intervention at all. The death of Jeanine's son, of the Zafinaraina lineage, was regarded by many as a spiritual disorder, even by those, such as Baorora, who felt the child did need "vitamins." As such, the healing power of forest medicines was sought, and when they failed, the healing power of the hospital was solicited. There appeared to be no effort to secure such power toward the healing of Jean Elie, perhaps because his family viewed itself, and was viewed by others, as socially and economically powerless.

To some, however, the illness and death in Kotomahay's family might be understood in terms of his Tanala ethnic identity, while the differing approach to the sickness and death of Jeanine's baby might be conceptualized in terms of her family's Betsileo ancestry. But to distinguish the differing illness strategies as reflecting differing ethnic views of medicine, would be misleading because it would obscure the ways in which poverty and local kinship ties mediate the illness experience in Ranotsara. Different economic positions, accompanied by different familial ties, are more salient to how one explains and treats illness in Ranotsara, than are spurious ethnic differences.

Howard and Millard (1996) have pointed out that high rates of child malnutrition are not attributable to local people, nor to outside influences such as the global economy alone; rather, they suggest that it is the interaction of customary practices with these outside forces that shape local economics. In the case of Ranotsara, the customary practices that interacted with the global economy were those related to a division of labor based on descent, in which those members of the Zafinaraina lineage were better positioned to call on their wealthier kin for assistance, while those of the Zafindraraoto lineage faced a continuing decline in economic security, further compounded by the Park's

enclosure of lands they regarded as their rightful heritage. Moreover, Howard and Millard (1996:xv) note that

The shift to commodity food production has been accompanied by weakening reciprocity between the poor and their community leaders, by an increasing gap between rich and poor, and by the growing poverty of many households faced with shortages of farmland and landlessness.

But landlessness alone, or even in association with close kinship ties to the ruling lineage, does not explain all poverty in Ranotsara, just as poverty alone does not explain all sickness. Gender and access to labor further exacerbate poverty, as the following story reveals, while lack of access to medicines, health care, and health knowledge, combine with the tropical environment to exacerbate chronic illness.

Explanatory Models for A Culture-Bound Diagnosis

As discussed previously, Rivo and his brother Koto launched the land consolidation that currently characterizes Ranotsara. But as their business savvy and good fortune were blessing them with the riches of abundant crops and cattle and a bit of cash, the fortunes of their elder brother, Lita, were not as prosperous. As the eldest brother, Lita had received the largest and finest rice fields from their father, but in middle age, his eyesight began to fail. By the time of my arrival, as Rivo and Koto had already established their wealth, Lita's eyesight was virtually gone. He could no longer tend his fields, and the only contribution he could make to the household was to chop the wood each day, a task he carried out by touch, rather than by sight.

Having lost the ability to manage his fields or contribute to the household economy, the responsibility fell to his wife, Soa.

When Soa married Lita, she was in her late twenties, with two children from a previous marriage, and another child already buried. She left her first husband, she explained, because he was lazy, and did not take care of his children. In contrast, Lita publicly adopted Lala's remaining child, Ketaka. Lala and Lita then had four more children, three boys and one girl, as Lita gradually went blind.

My arrival in Ranotsara was delayed by three days, however, when one of their boys died of apparent respiratory failure, and a funeral had to be held. Within a few months, another son was gone, again of respiratory failure. Lala, having given birth to six children, was left with only three surviving children, Ketaka, Lala, and Chantelle. At the age of thirty-one, her husband blind and unable to work, Lala had little time to mourn her children because it was up to her and her children to farm her land.

Having no adult relatives of her own to call on to help her farm, and Lala and Chantelle too young to do much, Lala and Lita turned to Lita's brother, Rivo, and offered to lease their irrigated rice fields to him for a period of three years in exchange for 50,000 fmg (about \$12.50). They knew that this sum was significantly less than the value of the land, which Lala speculated would yield crops valued at up to 250,000 fmg a year, but with no one they could call on to help with the labor, no cash with which to pay hired laborers, and no other bidders for land in the community, the couple's options were limited. With the 50,000 fmg they received, Lala was able to buy clothing and school supplies for the children, and some food, but she did not have enough to set aside.

She continued to work their *tavy* fields alone, but when she was in need of cash, she left her own fields to work for wages for Rivo. Ketaka and Chantelle also helped Rivo; as their father's brother, they were expected to treat him with the same respect as

they would show to their father. In their case, this meant working in his fields regularly, without pay, and every afternoon, after school let out, going to Rivo's rice fields to watch for birds, which they scared away with slingshots and stones. Although the girls received no pay, in consideration of their labor Rivo provided them with regular meals. The labor of the girls also served as a sort of social insurance, in case Lala came to him in the future in need. Thus, while relinquishing her fields for such low pay could be perceived as victimization, to Lala renting out the fields, in conjunction with "loaning" out the labor of her children, increased her options and her potential leverage with her brother-in-law.

But Lala's needs grew greater as her work wore away at her body and her poverty dragged her down. She was the only person in the village who appeared depressed. She rarely smiled, and did not pretend to be happy, unless she was drunk. She often drank *toaka gasy*, as did many women, and though she could not afford to buy it for herself, others offered it to her, knowing it was for her a sort of medicine. Lita, however, did not approve of her drinking and they often fought over it when she returned home drunk.

"He is angry because I've been drinking *toaka gasy*," Lala giggled one evening, after a fight had sent her out of her house and over to mine, where several of the women had gathered. "Maybe he will divorce me, and then I'll have less work. He is sick again, you know, with *bay*."

Yes, I knew. Lita's chronic *bay* was providing me with rich data on forest medicines. *Bay* is generally a skin disorder; some use the term to refer only to swollen, pus-filled growths such as boils or carbuncles, others used the term to refer to any type of skin disorder not otherwise specified (such as scabies). Because the environment was anything but sterile, with feces prevalent throughout the village and surrounding areas, and

clean water difficult to come by, the slightest break in the skin, such as from a mosquito bite, could become infected very quickly. In no time at all I was covered with my own *bay*, and my home became the local dispensary for antiseptic to cleanse everybody's budding *bay*.

Lita, however, did not come to me for help, sending Lala in his place to inquire after pills. One particularly crippling *bay* had taken root beneath his scapula. As it grew bigger and bigger, it became impossible for him to move his arm, and that meant that he could no longer chop wood. Rivo, however, did not come to Lita's aid, providing only periodic offerings of cooking wood. Lala and Ketaka took over that obligation, as well, collecting stray bits of wood on their way to and from the fields. Soa was also earning extra money by pounding rice for Rivo, for which she received 1,500 fmg a day.

"I want a divorce," Soa told me, still fuming about Lita's criticism of her drinking, "but I have nowhere to go, and I am too poor to leave the village. And if I divorce him, I cannot ask Rivo for help if I need it. Do you have anymore *toaka*? My glass is empty," and she chuckled some more. By five a.m. the next day she was back to work in Rivo's fields, earning cash to pay the *ombiasa* for Lita's treatment.

Naina stopped by to check on Lita every day, but the latter initially declined his assistance. Naina explained that Lita was suffering from *bay mainty*, "black *bay*," which was the most serious form. Soa would gather medicines in the *tavy* fields and prepare poultices for him, but by the time Lita agreed to Naina's treatment, his wound was very large and deep. Naina went to the forest for the branch of a tree, and stripping its bark, he plunged the end of the wooden pestle-shaped branch in the fire and held it firm to the

wound. Repeating this treatment several times a day, along with Soa's home remedy, the wound eventually opened, and within a few days Lita was healed.

But Soa's problems continued to surmount. Within a few months, she was visibly pregnant, confessing that she was due at the same time as the rice, implying her fear that she would be unable to bring in her rice harvest. Adding to her daily work of farming her own fields, pounding rice for Rivo, periodically working his irrigated rice fields (which he had leased from her), she had begun working for me as well, to gain not only income, but my obligations toward her. Contrary to Malagasy "cultural" forms of discourse, in which participants seek to put the other at ease by remaining cheerful and by approaching sensitive subjects circuitously, Soa tended to approach such subjects, particularly those regarding her legitimate needs, very directly. When she needed money, she asked for it, with no excuses and no explanations. When one day, as I was leaving the village to go to the capital city of Antananarivo, she unexpectedly — and without pleasantries — handed me a list of the items she would need for her coming birth and baby, I took the list and did as she said, buying cotton, scissors, gauze, alcohol, hat, blanket, sweater. "Anything else?" I asked.

"No, that is what I need to have a baby," she answered, having expected me to provide all that she needed, but no more than that.

As Soa's pregnancy drew to a close, and she continued to work her *tavy* fields, Lita fell very ill. He lay by the fire in their small two-room home, and grew increasingly weak. Naina was called, and his diagnosis was as they feared. Lita had albumen.

Albumen is an indigenous classification for illness characterized by swelling feet, hands, abdomen and face; yellowing of the eyes, nails and palms of the hands, and darkened urine. People differ in their opinions regarding whether it is or is not accompanied by fever. Some suggest that the skin leaves a dent if pressed, and others point out that the *marary* (sick person) will sleep a lot and only eat greasy foods. They generally agree that it is an illness of older people, with some saying only older people can get it, and others saying that younger people can sometimes get it.

Its cause is not always agreed upon, though many say that it is caused by too much salt in the diet. Others say that it is brought on by becoming too cold, or by drinking too much *toaka*. Some say that it is caused by wind entering the body, which makes the body swell up. Others say that it is caused from eating too many sweets, while many say that it is caused from not having enough food. Soa echoed the sentiments of many when she said that it was usually inherited.

"If a person gets it when they are old, then it is inherited from their parents," Soa explained, "and if this happens, then all the children of the parents will get it when they grow old. Most old people do get it, there is much albumen in Madagascar. You cannot escape it. But if a young person gets albumen," she continued, becoming very sad, "then it is not inherited. If it is the first time the generation has had it, then it is contagious."

"Albumen?" Dr. Tovo, of the Park Project, explained, "albumen is something in the blood, it is a protein. What you are describing sounds more like *tazo vony*," he said, referring to what would be literally translated as "yellow fever," but which he translated as hepatitis.

“*Tazo vony* is not the same as albumen,” Nirina explained to me, after I told her what the doctor had said, “*tazo vony* can turn into albumen, but there is no swelling with *tazo vony*. Only yellow skin and yellow eyes.”

“And *tazo vony* will not kill you,” Soa added, “it may linger, but it can be cured. The *ombiasa* can cure *tazo vony* but they cannot cure albumen. Not even the *docetara* [doctor] can cure albumen.”

“No, the *docetara* have many medicines, but none to cure albumen,” Nirina concurred. The women had stopped by my house for afternoon tea, which we were drinking outside in the rain, under the thatch awning of my cooking area.

“If the *ombiasa* and the *docetara* can do nothing for albumen, is there anything that the family can do? Are there forest medicines or other treatments?” I asked.

Soa answered. “Foods or medicines that bring on diarrhea sometimes help, because the abdomen is swollen with water and this makes the water to leave. And if the illness is caught early, the *ombiasa* might be able to cure it, but there must also be a *saotra* [ceremony of thanks to the ancestors]. If the *ombiasa* doesn’t catch it early, it may be temporarily cured, but it will come back”

“What will happen to Lita?” I asked gently.

“He will die.” Soa answered, matter of factly.

“Yes, *andriamanitra* [God] will take him,” Nirina, schooled in Catholicism, concurred.

The women finished their tea by the fire and as Soa rose to pound rice for Rivo, Nirina announced that it was time to go home and bicker with Faly, her husband of half a century.

Despite the agreement that only the *ombiasa* could do anything, no matter how ineffective, to help the person suffering from albumen, how the healers themselves diagnosed and viewed the illness differed, even within the tiny village of Ranotsara. For example, Naina said that it could be cured, but if it was cured, it became *fefy*, another indigenous classification usually, but not always, used synonymously with *tazo vony*. It would never really go away, he explained, but remain dormant, ready to reappear at any time. Naina provided his own views on the cause and treatment of the disease.

“There is an egg in the heart which causes the hands and feet to swell. The reason I know this is because the sick person likes to eat a lot of eggs. When an egg remains in the body, the body needs eggs. It is *fady* [taboo] to eat meat and salt when you have albumen. When the egg is deprived of meat and salt, the person will vomit the egg.”

“Have you ever seen this happen?” I asked, skeptically.

“*Eny ary* [oh, yes], I have seen it,” he answered. “The egg is not in the shell. It is very, very young. *Angroso* is the name of the illness at this stage, when the person has vomited the egg. If the egg is not vomited, the *marary* will die. The illness will spread from the face to the hands and feet. The illness begins with the face and eyes turning yellow, and the urine is very dark. When the hands and feet become swollen, the illness has spread.”

“How do you diagnose it?” I asked him.

“To diagnose it,” he answered with considerable patience, “I look at the eyes, face and fingernails. If the person is *malemy-lemmy* [sort of weak], does not respond to me, and their face, eyes and nails are yellow, I know that it is albumen.”

“Do you consult the *sikidy*?” I asked, referring to the divination system commonly used to diagnose social and physical discord.

“No, I do not consult the *sikidy*, if I have seen the symptoms myself” he answered, “because I know albumen. But if the treatment does not succeed, I will consult the *sikidy* to ask if there is another treatment that may work.”

Rakoto, on the other hand, a young but popular *ombiasa* in the village, and a distant cousin of Naina (both of the Zafiaraina lineage), said with pride that he could indeed cure albumen.

“Albumen is contagious, it is spread through sneezing,” he told me. “It is also caused by eating too much sugar. To avoid it, eat bitter things.”

“Who can get albumen?” I asked him.

“Anyone can get it, especially adults who don’t eat enough bitter things. But it always begins with another illness that is often very different. That is why I consult the *sikidy*.”

“How do you cure it?” I asked him, ready to note down the treatment.

“The treatment is never the same,” he responded, “the ancestors will tell me how to cure it, through the *sikidy*.”

Soa and her family called upon Naina to treat Lita. Knowing he could not cure the disease, they sought to alleviate his discomfort. Soa went to the fields to gather extra fire wood to keep him warm through the night, and she killed most of her few chickens to boil and feed to him. The broth is believed to provide strength to the sick, and people try to maintain a stock of chickens for times of illness.

Lita grew progressively worse as Soa grew progressively bigger with her pregnancy. Her sadness became even more marked, and she spoke of the future as if his death would bring her the relief of caring for him, but with it would also come the uncertainty of her own future. Not owning any land of her own, it was only through her children that she could claim rights to the land, by farming it for them until they came of age. To return to her own village would be equally uncertain, as her brothers had been using her own land for so long that to claim it back (women having rights to one-third of all property from their parents) would cause family problems.

“I will ask Rivo if I can stay here,” she said, “and he will let me, because I have no where else to go, and my children are the same as his own children. And I will sell my bananas to make the money to buy food and supplies for the next year.”

Soa’s *tavy* fields were planted with bananas, which she had been tending since my arrival. Aside from the wages she received from me and Rivo, she had no other assets to fall back on. But as the harvest season approached, Lita’s illness grew critical, and she tended him night and day. Finally, knowing he would die at any time, but knowing as well that she had to get her bananas to market before they grew overripe, she returned to her fields with her children to assist in the harvest.

The bananas were gone. Every last one had been harvested. Only someone living nearby and knowing she was unable to tend the fields while Lita lay sick, could have stolen her bananas.

That night, before going home to help her husband die, Soa got very drunk. The next morning by five a.m., she was back at work, pounding rice for Rivo, raising the six

foot pestle high in the air and bringing it down hard, again and again, as the pounding rhythm rocked her unborn child.

Death That no Medicine Could Prevent

Albumen is not, however, always regarded as an inherited or contagious illness. Even those who argued forcefully that albumen was a disease that was natural (coming with age), from the environment (contagious), or brought by Zanahary [God] (a category including both genetic and environmental disease), found none of these explanations fully accounted for the illness of Faly, *mpanjaka* of the Zafindraraoto lineage.²

Faly appeared to be an old man, who guessed his own age to be somewhere between eighty and ninety, but it was probably closer to sixty-five or seventy. His grandfather, Ramanjato, was the founding member of the Zafindraraoto lineage. He and Nirina, of the Zafinaraina lineage, had been married for about fifty years, they guessed. They worked hard together, and they drank hard together. Laughing and joking endlessly, Faly never forgot his role as *mpanjaka*, taking the position very seriously. He lamented the changing status of his role, as poverty and limited labor led him to relinquish his fields to Rivo, and deaths and expenses forced him to sell his cattle one by one. By the time I arrived, Faly's status had diminished from that of a village leader, to that of an honored elder. The true leaders of the village, he suggested, were those who had no titles, but controlled the land.

² I was not present in the village when Faly fell ill, and the following account was drawn from interviews with those who treated and cared for him, as well as the ever-prevalent village gossip.

In mid-November, Faly suddenly became very dizzy and feverish. He went inside his home to lie down, while Nirina nursed him. He had no appetite, and his eyes became very red. Soon, the tell-tale yellowish tinge that signals *tazo-vony* indicated that it was time to call for an *ombiasa*. Nirina sent for Rakoto, and he consulted the *sikidy*, learning from the ancestors that Faly was the victim of *mosavy* [witchcraft]. It did not take the family long to discover the likely *mpamosavy* [witch], as she was right there in the family — Faly’s younger sister, Lanto.

In her mid-forties, Lanto was much younger than her elder brother Faly. Her isolated life as a single woman raising her children by herself, compounded by her inability to work her fields due to her poor health, contributed to her image as a social outcast. More importantly, she was rumored to be a thief.

“Rumors!?” Nirina spat out, “*Ny marana!?*” [the truth]. “I caught her stealing our bananas, our coffee, our sugar, even our chickens! They were no rumors. She was always stealing from us, and she finally stole so much that Faly did not have enough to eat. That was why he became sick, he was *hungry*. But he wouldn’t do anything about it; he said she was his sister and she needed the food. *We* needed the food, too. So Faly and I got divorced.” Nirina began to weep, thinking back to the terrible row they’d had that led her to storm out of their home and take up housekeeping in her adopted son’s abandoned home.

“But I never stopped cooking for him, he still had to eat,” she explained, reclaiming her pride.

Although their separation was a source of gossip and good humored fun in the village, as everyone knew it would subside, once Faly became sick, Nirina moved back to

their home. But neither her nursing, nor Rakoto's prayers and healing plants, could restore Faly's health. He grew sicker and sicker, and within two weeks, he was dead.

As I returned to the village following a brief absence, I saw Nirina awaiting me on the edge of the ricefields. She stood, rigidly erect, until I approached. Having heard the news of Faly's death, I greeted her with sadness and, breaking the Malagasy *fady* of never crying for the dead after their burial, Nirina fell in my arms sobbing. She'd lost her best friend.

Within weeks of his death she was working the rice fields alongside women a fifth her age. Nirina, whose age and ancestry marked her as the most respected and noble woman of the village, was working for Rivo.

Faly's death left the position of *mpanjaka* open for his younger brother, Kotomahay, to assume. Having recovered from the illness that fell him and his grandson, Solo, Kotomahay proudly accepted the office informally, and began acting the part of village leader, presiding over important decisions, welcoming guests, and joining the other *mpanjaka* in ceremonial duties. Until the weather cleared and the *sikidy* was consulted for an auspicious ceremonial date, the inauguration — in which a cow would be sacrificed, great quantities of *toaka* would be drunk, and everyone would stay up all through the night, singing and dancing — would have to wait.

"I am your father, now," Kotomahay told me upon my return to the village, "because I am taking Faly's place, and I will be as a father to you as he was a father to you while you live with us. Soon, when the deaths have stopped, I will move to his home. But for now, we must wait, because it is in his home that the dead of our lineage must be

lain. And I am sorry to tell you that I have received news of another death. My niece has been living in a village far from here, with her husband and children. She died yesterday, of *tazo vony*. Because she grew up here and lived here until her marriage, her body will be brought back here so that she may be buried with the ancestors. But the village is far, and it will be another two days before her body arrives. After she is buried, if the deaths have stopped, I will move to the *trano be* [ceremonial house, used for funerals, and in some cases as a house of the *mpanjaka*].”

It rained sideways for the next two days, a cold and wet isolation, as the village turned into an island of mud. Talk began to circulate that if the *maty* [dead one] did not arrive soon, the river would rise so high it would be impossible to cross. And if the body did arrive, many wondered, would it even be possible to get it up the slippery hills without dropping it altogether? No, it was agreed, this was no time to die.

But the river hadn't yet risen so high that the pallbearers couldn't cross it. After three days, the body was borne high on the shoulders of a group of men unknown to me. The residents gathered at the edge of the village to greet the *maty*, and murmurs immediately exploded in exclamations of surprise. The four days since her death had caused her body to bloat beyond recognition; she resembled an obese pregnant woman, and I was assured that she was neither. The smell was so terribly fowl that even her closest friends expressed discomfort at sitting with the body, which soon oozed putrid body fluids into *tsihy* after *tsihy* [grass mats, wrapped around the body].

“They can't keep that body here much longer,” Benoit complained on the second day, wrinkling his nose, “the whole village smells of *maty*.”

“Why haven't they had the funeral?” I asked.

“Because her family must come from far away,” he explained, “so we must wait. But I think they should just take it away right now, it’s going to bring more death.”

“Yes,” Lalao agreed, “they want to wait for the family to arrive, and they must, because it is the *fomba*, but it has been too long. If it isn’t taken to the tombs soon, then more death will come.”

“How much longer will they wait?” I asked.

“Until tomorrow, *angamba* [maybe]?” Lalao asked, not sure of the answer herself.

Fortunately, the answer came soon, as the family and friends arrived, filling the mud-drenched village with the festivity of reunion and the sorrow of their loss. The funeral was held in the rain; as the body was brought out, the putrid grass mats were piled onto a clean grass mat for disposal in a sacred grove of distant trees. The mourners rushed toward the edge of the village to see the body off, where it would be taken to the caves deep within the protected forest and left to join the ancestors.

I stood under the tole awning of Toandro’s house, watching as one by one they left the *trano be*. When the village had emptied of any sign of life, with the mourners all gone to say good-bye to the dead, I was surprised to see one more mourner slowly leave the *trano be*, his head buried in his hands as he sobbed loudly at the loss. Kotomahay lifted his head and looked at me, slowly approaching.

“She was my brother’s daughter, I raised her as my own. She was a happy child, always laughing. But *tazo vony* kills everyone, even the young. We have no medicine for it. The doctors have no medicine, the forest has no medicine. Only the ancestors know who will be next.” He gazed at the *trano be*, the clay house he longed to make his home, yet the place of so much death. He slowly walked back and picked up the *tsyihy* tied into

a bundle. It was growing dark and the rain was beginning to fall again, harder with each passing minute. Without a word he began the slow walk in the growing wet darkness to dispose of the bundle.

The next afternoon, the rain still coming down like hammers and nails, he approached me again as I made my rounds from house to house.

“The walk to the forest has been very hard on me. My head hurts and I feel dizzy. Do you have aspirin?”

I did, and I returned to my house and got some. He accepted gracefully and without comment, slipping into his home to rest by the cooking fire.

By nightfall he was in a coma.

The next morning visitors surrounded him as the *ombiasa* were called. Albumen, one said. *Tazo vony* another said. *Aretina biby*, they all said, when the truth was discovered. Kotomahay had not taken the bundle deep into the woods, it turned out. Instead, with the rain and darkness coming on, he had dropped it off in a sacred grove of trees, distant, but not distant enough, from the village. His niece’s ghost had struck him ill to curse him for this *fady*. His final diagnoses, ghost sickness.

At the end of the day he was still unconscious. With the rains falling harder and harder and the winds picking up, getting him to Ranomafana was impossible, and viewed as pointless. Only the ghost of his niece could save Kotomahay, but there was no sign of mercy. As the night drew near midnight, the wind began to howl and the rain began to hammer the earth harder and harder. With a loud smack, the cyclone hit, sending sheets of tile flying, thatch roofs crashing, doors slamming open and shut. And at almost that very

instant, the howling of mourners began. Just a few yards away from my own door, I barely discerned the loud wailing of the women that had grown so familiar a mark of death. The wind was so loud, the cyclone so fierce, that the wailing sounded far, far away. Pounding on my door, Colette burst in, drenched, babbling and flaying her arms.

“Another death!” she said, “hurry, come!”

We rushed out the door and through the rain slamming down in the pitch black night, expecting to find Lita dead, but finding instead twenty or thirty people crowded outside Kotomahay’s door.

He would reach the *trano be* after all, but not as the resident *mpanjaka*, instead as the next *maty*, the fourteenth since I’d arrived, less than a year before.

Three days later, as Kotomahay’s body was taken into the forest to join the ancestors awaiting him, the wailing began once more. Lita, whose illness had lingered for two months now, had passed away, as his wife readied to give birth.

As I returned home in the cyclone following Kotomahay’s death, I found my home crowded with women from the Zafinaraina lineage. The cyclone, the midnight hour, the rapid succession of deaths, had all electrified the women, and amidst the shock and sadness there was an intoxicating buzz, as everyone chattered at once in efforts to explain how another death had hit so hard and suddenly. Lalao hurried to cut up some fruit and serve it to our guests as I stood around dazed, babbling expressions of shock and sorrow and fussing with a petrol lamp. Giving up, I lit a paraffin candle just as Lalao handed me a plate of pineapple and I sat down to the table, Colette, Soa, Lalao and others crowding around as if for a seance.

“Kotomahay’s death was no accident,” Colette whispered, slowly and clearly, as if speaking to a child, to be sure I understood. “He was *andevo*. His whole family is *andevo*. That is why they have all been dying.” The wind and the women continued to wail in the darkness beyond the door, and the rain continued to batter the metal roof. Through all the unearthly whistling and wailing, we could barely hear the rapid pounding on the door, but we gradually turned our heads one by one as it the beating became louder and more and more demanding. Lalao opened it and a small quick figure shrouded in a yellowed-plastic sheet slipped into the dark room. My little comrade, Toky, wasn’t going to let this gathering take place without him. His dancing smile lit up the corner where he silently tucked himself, eyeing the pineapple like a starving Oliver Twist until Lalao passed him his share.

I voiced my confusion. “But iLisa died, Rabery’s son died, Baocecily’s grandchild died, Ramasy died. Bao died. Your own children have died. They were not *andevo*, they were all Zafinaraina,” I pointed out.

“Yes, but look at all the others who have died. Kotomahay, Faly, Tsaralahy, Solo’s baby, Jenine, they were all *andevo*.” Colette smiled smugly as if her reply had proven her point.

“Yes, Janezi,” Toky interrupted, teasingly, from the dark corner where he crouched “*andevo*. . . ,” said as if to send a light-hearted chill up my spine, knowing it was a word I’d grown to know well, and therefore just the sound of the word would clarify it all.

I did not understand. I had been keeping track of the deaths, and they were nearly equally divided between the two lineages. I could not determine any common feature,

aside from malnutrition, high fevers, and the lack of health services. From my (layperson's) view, a few had died of hepatitis, a few children from malaria, two from malnutrition, a couple were just very old. But lineage, which did appear to play a roll in daily health care, seemed unconnected to the deaths. As Nirina had said, Tanala die, Betsileo die, Vazaha die. The same could be said for the Zafinaraina and the Zafindraraoto. The illnesses which killed hit all, while the illnesses which merely slowed and impaired hit hardest on the poorest. Colette's *andevo* explanation made no sense to me.

Soa interjected.

"They are cursed. The ancestors have sent death to them, and death to our village, because they have married too many among us." I thought of her own "royal" husband who lay dying as we spoke.

Colette could not keep quiet, she was bursting to dis the local "other." As always, Lalao stood quietly aside, cleaning up after us and taking note of the talk, to take back to her parents, Rivo and Kalamira.

"An *andriana* would never have done what Kotomahay did," Colette continued, "by leaving the *tsihy* among sacred trees. *That* is the act of an *andevo*." She sucked the juice from her pineapple as she ate it in a few rapid bites.

"But Kotomahay was a very good man," I protested, feeling uncomfortable that someone who I had found to be so warm and kind to me would be disparaged only moments after his death.

"He was a *great* man!" Colette countered at once, and everyone joined in praising him. It appeared that they could easily distinguish the man from the lineage, while the

lineage remained inseparable from his identity. He was, according to this conversation, descended from slaves, thereby still colored with the stain of history, a stain that would linger through generations to come. The lineage explained his weaknesses, just as it explained their strengths, but individual strengths among the Zafindraraoto and weaknesses among the Zafinaraina were attributed to one's personal character. Prejudice looks the same wherever one finds it, I thought to myself.

The Birth of a Tanala

The night that Kotomahay's body was taken to the forest, a forest one could openly enter only as a corpse, Lita died, and he, too, was carried away in the raining night to his own *andriana* forest tomb. A few weeks later, as I began to awaken to the familiar cries of lemurs in the nearby distance, Lalao burst into my room, urging me to hurry and awaken.

"Soa has had her baby," she said, handing me a cup of coffee she had roasted and pounded herself. Her tone was very sober.

"How is she?" I asked, concerned for Soa and disturbed that I'd slept through the event. I'd wanted to participate in a local birth, a desire Soa found odd but agreeable.

"There is a problem. The afterbirth has not come. The baby was born six hours ago. Soa is in much pain. They've sent for Alarobia's wife in Ambatovory. No one here has been able to help her."

I hurried to dress and rushed off with Lalao. Colette met us on behind the house.

"Soa told me to go get you, when the baby was coming" Colette said, "but I was afraid to wake you up. *Vazaha* like to sleep." Colette, for once, was serious.

“It’s a girl,” she added, as we reached Soa’s house.

The whole village had gathered outside and although no one was wailing, the mood was anxious and grave. We entered quickly, our heads bowed low.

Soa was huddled in a corner, the same corner in which her husband had died a few weeks before. Her mother, who had traveled from a distant village to assist her daughter, was beside her. Nirina and Kotomahay’s wife, Soary, were assisting her. Nirina held Soa as Soary reached deep into Soa’s uterus. Soa made no sound, just stared off to the side. A tiny baby wrapped in a soiled cloth lay next to her mother’s legs, the cord still uncut. The baby made no sounds at all, but squirmed quietly and helplessly. Her head was already wearing the tiny knit hat Soa had asked me to bring back from the city. A baby must have its head covered at all times, no matter how hot, to keep it from getting *marikoditra*, a fever with chills.

No one seemed to notice the baby, it lay all alone beside Soa.

Just then, only moments after we’d entered, Baofaly, arrived. She was married to Alarobia, the *ombiasa* in Ambatovory, and was noted for her midwifery skills.

Wasting no time, the elderly woman directed Soary to give her a plate. Soary moved quickly and found an enamel plate, pouring water from a plastic cup into the shallow-sided plate. She carefully handed it to Baofaly, who dropped some leaves into the water, and offered it to Soa to drink. As Nirina helped Soa drink the herbal water, Baofaly reached into Soa’s uterus as so many others had been doing for hours, and pressing on Soa’s abdomen with one hand and twisting her arm inside the suffering woman, she expertly pulled out the afterbirth as Soa grimaced silently. As Baofaly placed

the afterbirth on the grass mat, a heavy sigh and murmured thanks to Zanahary, the Christianized indigenous deity, filled the room, and then the baby was picked up.

The cord was cut and the dirty cloth quickly stripped from the baby, who was promptly dressed in her new acrylic knit clothes. Soa rested in continued silence by the fire, not looking at all to her new child. The women passed the baby from one to the other, each commenting on what a beautiful child she was, when finally Nirina, with great decorum and a somber face, handed the baby to me with the announcement, “Janezi, you are now Tanala.”

And with that, the room burst into hilarity as I took the bundled child in my arms, and the door was opened to the crowd to gaze upon the new life.

A few months later, the baby, named Emma, died just as three of Soa’s other children had in the last two years.

I recalled a picture Soa urged me to capture with my camera, late in her pregnancy. Snatching up a fat healthy baby of six months, Soa held it against her bulging belly.

“Take this picture, Janezi!” she called out to me when she saw me wandering around with my camera. “Tell the *vazaha* that we Tanala like having babies so much that we have another as soon as they’re born!” And laughing in merriment at her perceptive joke, she handed the baby back to his mother, then picked up a six foot pestle to pound more rice for Rivo.

Chapter 8

CONCLUSION

In this ethnographic study of forest farmers in Madagascar, I set out to show how the use of medicines by indigenous people who live in the seemingly exotic realm of the rainforest extends beyond plant medicines and “traditional” medical beliefs. My concern has been, instead, to illuminate the multiple ways in which environmental and social changes penetrate indigenous knowledge systems in such a way as to create complex and ever-changing interplays between changing environments and access to health resources.

I have presented what I describe as a political ecology of health perspective to understand these complex relationships. Specifically, I suggest that the environmental and health nexus can be understood as a socially mediated process, in which local, national, and international policies and practices are interconnected, influencing one’s health and relationship to the environment in differing ways. Rather than viewing environmental change as directly affecting the health of people in a given society in uniform ways, I contend that social and environmental changes affect people unevenly, and their health is thereby affected in multiple ways. Among the variables that shape these uneven relations, my analysis has focused on economic status, lineage, age, and gender as salient to the

ways in which the changing forest landscape has influenced health practices and beliefs in one small village strategically located amidst an internationally- funded conservation and development project in southeastern Madagascar.

While my findings regarding the village of Ranotsara are unique to this village at this particular place and time, and unique in that they have been represented through the filter of my own subjective analysis, the village level study is particularly salient to a political ecology of health analysis because it shows how national and international policies and practices have very distinct implications at the local level. In the village of Ranotsara, a history of social tensions related to lineage and economic status have divided the village in such a way that it has been impossible for the community to experience the benefits or consequences of social and environmental change uniformly. Moreover, these pre-existing social fissures have deepened with recent conservation and development initiatives, and these social divides have had serious health consequences for some, but not all, residents of the village.

Three important points have been raised in this study. The first is that conservation of the forest has had adverse economic effects among forest residents, leading to less ability for the majority to purchase pharmaceutical medicines and greater neglect of chronic illnesses, rather than increasing reliance on plant medicines. The second is that contrary to the prevailing view that one's cultural or ethnic identity determines how they perceive and use their environment, and determines one's medical beliefs and practices, I found, instead, that just as concepts of the environment, and of health and healing in the United States are understood in terms of education, family income, and

social power, so too do these same factors mediate one's understanding of, and interaction with, the environment and the medical realm of Ranotsara. The third point that I have presented is that current practices related to the forest and to health are not the stuff of tradition, but must be understood in historical and social contexts.

In what follows I elaborate on the evidence I have presented to support these points.

Forest Medicines

There remains a proclivity among educated Westerners to conceptualize forest medicines as botanical resources representing an ancient wisdom of that which is wild and untouched, offering potential remedies and cures to the pains of affliction. These ideas are not entirely off target. People living in the forest do, indeed, have extensive, if variable, knowledge bases of the potential medicines surrounding them, and there is no doubt that the botanical bounty of the tropical forests conceals potential medicines for many grave and debilitating illnesses.

But one's knowledge of the botanical inventory, and their use of these medicines in their daily lives, is influenced by age and gender. While there was a considerable diversity of knowledge about the local plant habitat in Ranotsara, I found that men and older women have a greater knowledge of the botanical inventory of the region than do younger mothers. This is, I believe, because Ranotsara is a patrilocal village, and the diversity of Madagascar is such that even within short distances, ecosystems change. As such, as young women marry and move to Ranotsara, they bring with them the botanical

knowledge of a different region. In some cases, there may be considerable consistency in which plants are used, and how they are used, but in other cases, different plants might be used for different purposes. Women therefore exchange information about these medicines, leading to an ever-changing knowledge base among women as to which medicines to use for which illnesses. As women age, their knowledge of the local botany increases, and becomes more consistent with the knowledge of other elders, both male and female.

To pass on their knowledge, however, they often rely upon sons, because they will remain in the area as they grow into adulthood, while daughters are also taught the values of local medicines so that they may treat their own children. Thus, women's indigenous knowledge of plant medicines differs from men in that it is not just passed on generationally, but it is also passed on to others within generations.

This generational knowledge, however, is unlikely to be as "ancient" as one might presume. As I recounted in Chapter Five, the village is relatively recent, having been founded by two separate groups of people a century past. Thus, there have only been a handful of generations who have lived in the Ranomafana region, their ancestors having come from the highlands. Villagers' familiarity of the local botany therefore reflects not only the knowledge brought from these highlands, but also suggests new knowledge, as grandparents of the present inhabitants in all likelihood incorporated new plant species into their healing repertoire. Thus, it is likely that contemporary indigenous knowledge of healing plants is characterized by innovation and modification, consistent with Western science.

But at the same time that older people are indeed more knowledgeable of indigenous medicines than are younger people, they are also more accustomed to pharmaceutical medicines to treat illness. They have become habituated to the colonial health care system. Those who live in the forest do not live cut off from the rest of the world. The medical systems of indigenous societies are syncretic systems of healing, and as such, pharmaceutical medicines have been incorporated into local pharmacopeias as important and efficacious healing resources.

While pharmaceutical medicines have been cognitively and practically incorporated into indigenous medical systems, not everyone has access to them. The consolidation of economic power in Ranotsara has enabled certain village residents to maintain a ready supply of pharmaceutical medicines for treating respiratory disorders and fevers, while the rapid decline in economic status of most residents and the associated decline in their nutritional and health status, has contributed to a growing dependency upon forest and local indigenous medicines for others in treating these same illnesses, though they are more likely to seek treatment only when these illnesses become acute or interfere with their work or other responsibilities.

Nonetheless, despite the ability of certain men to access health services in Ranomafana and elsewhere – services which are appallingly inadequate and likely in many cases to worsen one's health – the poverty of everyone, combined with an unhealthy environment, extremely demanding work loads and geographical isolation, has contributed to poor health for all village residents.

Among the narratives I presented to support this point, the story of Nety's death is particularly demonstrative. Nety had died from an apparent seizure at the river's edge, and although her death prompted numerous and conflicting explanations, the physician's concern that she had stopped taking her seizure medication because she could no longer afford the medication, is persuasive. Nety was of the more noble Zafinaraina lineage, which conferred upon her a higher social status than her Zafindraraoto counterparts, and provided her with important and close ties to those who controlled the majority of land and resources in the village. But as a landless, unmarried mother, her gender and youth countered any benefit her lineage bestowed upon her, and her ethnicity failed to account for the fact that her illness had not been treated. The neglect of her illness was not necessarily from ignorance, but having become accustomed to the efficacious properties of the pharmaceutical anti-seizure medication, it is conceivable that plant medicines would not be used as a substitute, because they were not regarded as efficacious for the treatment of a seizure disorder.

A second example I presented to support my point that illness is suffered by all and that pharmaceutical medicines are integral to the healing repertoire though often unavailable, is the story of Lanto. Lanto, whose story I presented in Chapter Six, was from a lineage reputed to be descended from slaves. Her lineage, combined with her status as an unmarried, middle-aged woman, rendered her a social outcast, despite being the sister to her lineage's *mpanjaka*. Her lineage, gender, and marginality in the community contributed to minimal social support in maintaining her fields and restoring her health. Her poverty thus exacerbated, her lack of access to medicine, health care, and

knowledge contributed to her chronic illness. That she was Tanala seemed to have little bearing on the treatment strategies she pursued; she herself showed little faith in the healing faculties of Rakoto, who, like all the *ombiasa* of Ranotsara and nearby, was of the Zafinaraina lineage. Instead, she neglected her illness until persuaded by the physician to seek biomedical care; her repeated and futile efforts to do so eventually exhausted her, and she returned to her customary treatment, neglect of her illness most days, *ahibalala* tea when her condition worsened.

The neglect of her illness was not necessarily from her ignorance; the stories of chronic illness which I have presented illustrate the way that discomfort and illness have been naturalized by many who, although not necessarily regarding themselves as “healthy,” have surrendered to the futility of trying to combat so many health concerns, a futility Lanto came to know well.

The incorporation of pharmaceutical medicines into African healing systems has received attention from others who have shown the ways in which the steadfast belief in African “traditions” is slow to recognize that African practices are generally based on reasoning and experience, rather than superstition and ignorance. For example, Vaughan (1991) has shown how even as colonialists recognized the rapid acceptance of pharmaceutical medicines in eastern Africa, they continued to explain the incorporation of biomedicine into indigenous healing systems as evidence of Africans’ continued belief in ‘magic,’ presuming they interpreted the efficacy of biomedical drugs as magical, and not “scientific.” On the contrary, as Feierman (1985) has indicated, Africans do practice biomedicine and do become educated as Western-trained physicians. The incorporation of

biomedicine into indigenous African societies is indeed an African practice. It is misleading, also, to suggest that as Africans become educated in biomedicine that they cease being African, or that indigenous medicine remains the backward practice of rural Africans uneducated in Western science. Such a conception is generally promoted as rooted in cultural tradition and tied to ethnicity.

Culture, Ethnicity, and Medicine

A second, and perhaps the most important, point which I have made in this study is that the use of medicine and of the environment is not related to one's ethnic identity, but is instead associated with one's lineage, education, and social status. Moreover, policies which presume health and environmental perceptions and practices have ethnic origins, are potentially harmful.

In the story of Solo and Kotomahay's illnesses, and that of Solo's malnourished son, which I presented in Chapter Seven, I explained how I found myself drawing on my own prejudices to explain the neglect of the baby's nourishment to ignorance, which struck me to be in stark contrast to the attention Solo's aches and pains received. While I focused on what I perceived to be ignorance, a failure of people to recognize the severity of malnutrition as compared to a common flu, the people of the community focused on one's relationship to the forest, or how one is, or is not, empowered to control the land and resources of the forest that surround them. As economic power diminished for nearly everyone, families came to rely more on the power of the ancestors to remedy social problems, not because they were bound by traditions and unable to understand the severity

of malnutrition, but because they viewed themselves as powerless in the changing community and therefore drew on the only power they felt that they could summon.

To some, however, the illness and death in this family might have been understood in terms of their Tanala ethnic identity, while the differing approach to the sickness and death of Jeanine's baby might be conceptualized in terms of her family's Betsileo ancestry. But to distinguish the differing illness strategies as reflecting differing ethnic views of medicine would be misleading because it would obscure the ways in which poverty and local kinship ties have mediated the illness experience for these families. I found their different economic positions, accompanied by different familial ties, to be more salient to understanding how one explains and treats illness in Ranotsara than is a focus on ethnic difference.

Another example which I used to show how ethnicity does not directly relate to one's use of medicines was in the story of Celine and Zanabelo. Celine and Zanabelo consulted Zanabelo's cousin, an *ombiasa*, regarding illnesses of their children, and I suggest that their decision to do so had more to do with their trust in someone from their own lineage than it did solely in their belief in his magical powers. Lineage, alone, however, could not explain their actions, as they handled each illness episode in their family differently. They sought Western medicines when they were affordable and available, used indigenous plant medicines when the illness was deemed ordinary and treatable, and sought intervention of the *omdiasa* when the illness was believed serious but unnatural, with cosmological origins. Thus, multiple factors influence their treatment strategies and cannot be easily reduced to either lineage or ethnicity.

Nonetheless, lineage has had considerable bearing on one's economic power, which in turn influences health. To understand this relationship of lineage to economic and health status, as well as to how one interacts with the environment, it is necessary to contextualize present practices and beliefs in the social history of the region.

Historicizing Health and Environmental Practice

The third point which I have emphasized in this study is that in order to understand how local social relations relate to health and environmental practice, it is necessary to understand local and national histories. As political ecologists have shown, land use is not the simplified process of continuing degradation promoted by many policy-makers. It is uneven, both spatially and geographically. Moreover, land use change is not necessarily perceived as degradation by inhabitants of the forest; those who lived in the forests of what is now the Ranomafana National Park view the land in terms of its productivity and subsistence value, viewing the earth as more valuable than the trees which grow on it.

In Chapter Three I discussed the history of pre-colonial and colonial policies regarding land reorganization in Madagascar in order to show how forests are conceptualized and used by contemporary people on the island. I argued that the pre-colonial autocracy and colonial government shaped land and resource use through social policies including forced labor, taxation, relocation, conservation, and development. Understanding this historical context helps to understand that concepts of "traditional" land tenure regimes, as I also demonstrated for "traditional" medicine, and "traditional" cultural identities, have been anything but "traditional." Moreover, the most severe

environmental degradation in Madagascar, attributed to "Tanala" farming methods, is actually more closely related to Madagascar's urban industrialization. Industrialization of the Merina empire, combined with social and land reorganization, fostered massive deforestation and concentrated people in the most forested areas. This deforestation was further exacerbated as colonial forest policies divided one million hectares of forest land into nine separate reserves and redefined these areas as "protected" areas. In so doing, the prohibition of *tavy* was linked to the enclosure of forests for conservation purposes, at the same time that exploitation of these same forests was facilitated by laws regulating and sanctioning the use of the forest for industrial development. The portrayal of *tavy* as environmentally destructive was perceived as contradictory by forest farmers who saw that the trees and plants of the forests were viewed as resources of value to outsiders.

In Chapter Four I discuss how the history of land reorganization and agricultural policy has been specifically tied to changing identities. In particular, I focus on the history of Merina, Betsileo and Tanala ethnic identities. The Ranomafana National Park Project used "cultural sensitivity" in much the same way as colonialists throughout Africa engaged in "indirect rule," to persuade residents to adopt new practices. In so doing, they reified social differences as ethnic ones, ranking the ethnic groups in terms of their modernity.

The cleavages produced by land reorganization in the nineteenth and early twentieth century were further exacerbated by post-colonial processes and events, including structural adjustment, land privatization, the Gulf War, and cyclones. These events, combined with unequal distribution of project benefits, enabled a few families to consolidate their land and resources, and appropriate the land and labor of their more

disadvantaged neighbors and kin. The ensuing economic inequality, however, was due as well to existing social divisions in the village; these same processes have had different consequences in different parts of the region, a distinction which illuminates, rather than refutes, the significance of integrating international and national policies and processes with local-level processes.

The consolidation of economic power in Ranotsara has enabled certain village residents to maintain a ready supply of pharmaceutical medicines for treating respiratory disorders and fevers, while the rapid decline in economic status of most residents, and the associated decline in their nutritional and health status, has contributed to a growing dependency upon forest and local indigenous medicines for others in treating these same illnesses.

The current agricultural system employed by subsistence farmers in Ranotsara combines *tavy* with irrigated rice agriculture and cash crop production. Rather than representing three different types of agricultural systems, the land is farmed as a single system in which three different cropping strategies are practiced simultaneously to maximize yields. In Ranotsara, the majority of farmers where I lived owned *tavy* fields exclusively, lacking the labor and suitable land for irrigated rice, while a minority owned (or rented) irrigated rice fields. Most all had some sort of cash crop land, such as bananas or coffee.

With the declining economy of many families, and their greater workload as they labored, like Soa, Solo, and Lanto, on their own and others' fields, illnesses intensified. While all families suffered the experience of one or more early deaths, the prevalence of

illness was greatest among those who lacked sufficient nutrition, and were unable to treat their illnesses in a timely manner because they lacked the money for medicines.

In Closing

In presenting these intersections of health and environmental change, it becomes apparent that forest medicines, and forest health, can only be understood in the context of forest lives, a context that has thus far been excluded from policies related to health and the environment. from policies related to health and the environment. The exclusion of a social context may be due to the sad reality that human lives have not received the public attention that the lives of endangered species have received in seemingly exotic places such as Madagascar. While considerable attention (both scientific and popular) is drawn toward the plight of Madagascar's lemurs¹ there has been scant attention drawn to the health effects that material and environmental changes have caused the Malagasy people. But the Malagasy people, like people everywhere, are divided by their own internal divisions, arising from shared and diverging histories, environments, communities, and economies.

By showing how these internal divisions have contributed to how one uses the forest environment, and in turn, mediated the illness experience, I have sought to challenge

¹ In addition to the plethora of PBS specials and natural science magazines devoted to the endangered flora and fauna of the island, witness such titles as "Infant Death in *Propithecus diadema edwardsi* at Vatoharanana, RNPP, Madagascar" (Erhart 1997) "Effects of Food Availability and Forest Composition on Feeding Patterns of *Propithecus diadema edwardsi*" (Hemingway 1996), and "Psychological Well-Being of Nocturnal Primates in Captivity" (Wright, et al. 1989).

prevailing views that the relationship between health and the environment can be understood as a causal one, in which tropical environments have predictable effects on human health. I have also sought to dispel notions that a "cultural context" is something that can be interjected into such a causal relationship in a simplified manner that conflates culture with race or ethnicity. The political ecology of health approach I have employed has emphasized the internal divisions of the community in shaping the interactive relationship between health and the environment.

Internal divisions have profound implications for social and environmental policy and projects but without exploring these divisions or incorporating them into project strategies, objectives to stop forest destruction will fail. In order to achieve the environmental objectives of USAID and the Malagasy government, for example, a better understanding of ethnicity and lineage is necessary. Such an understanding of social identity and its consequences, however, brings into question the morality of these environmental objectives when they are tied to social identity.

In the case of the Ranomafana National Park Project, while the project did not create the poor health in the region, nor cause the deaths of so many people, I would argue that the policies they established exacerbated the poor health in the region by limiting the economic options of the majority of residents, deepening social inequalities and divisions, and refusing to accept any responsibility for health, while at the same time they promoted an image to the public, to funding agencies, and to residents, that they did indeed provide significant health care to residents. Moreover, by being blind to cultural features outside the exotic realm of shamanism and slash-and-burn, they were unable to

explore any possible relationship between the economic and environmental changes in the region and declining health. As a result, health care remained unavailable to some of the sickest human residents of the forest, while broader understandings of how health and the environment are intertwined differently for different social groups, remain elusive concepts to many environmental planners affecting social change.

The Ranomafana National Park was created from admirable objectives of safeguarding the planet and preserving life. Yet at the same time, in so doing, it affirmed hierarchies and values regarding whose life was worth protecting. This conservation ethic replicates the early eighteenth century construction of "wilderness" as a sublime and sacred landscape, a meaning which, by the nineteenth century, led to the necessity of taming the natural world for human habitation. By heralding the beauty of wilderness, a place inhabited by God, it became a spectacle for tourists to behold (Cronon 1996:12).

Cronon (1996:14) points to the irony of how it was the elite businessmen of the industrial age, those who had benefitted the most from the industrialization of America and its associated destruction of the environment, who most championed the wilderness as a domain of recreation, for "sleeping under the stars . . . and living off the land."

Thus, the decades following the Civil War saw more and more of the nation's wealthiest citizens seeking out wilderness for themselves. . . . Wilderness suddenly emerged as the landscape of choice for elite tourists, who brought with them strikingly urban ideas of the countryside through which they traveled. For them, wild land was not a site for productive labor and not a permanent home; rather, it was a place of recreation. One went to the wilderness not as a producer but as a consumer, hiring guides and other backcountry residents who could serve as romantic surrogates for the rough riders and hunters of the frontier if one was willing to overlook their new status as employees and servants of the rich.

In just this way, wilderness came to embody the national frontier myth, standing for the wild freedom of America's past and seeming to represent a highly attractive natural alternative to the ugly artificiality of modern civilization. The irony, of course, was that in the process wilderness came to reflect the very civilization its devotees sought to escape. Ever since the nineteenth century, celebrating wilderness has been an activity mainly for well-to-do city folks. Country people generally know far too much about working the land to regard *un*worked land as their ideal. In contrast, elite urban tourists and wealthy sportsmen project their leisure-time frontier fantasies onto the American landscape and so created wilderness in their own image (Cronon 1996:14, emphasis in the original).

If anything regarding wilderness has been conserved over the last two hundred years it has been this Western construction of the concept itself, as a landscape to be preserved for the fulfillment of those living far from it. The only significant change has been that technological advances have enabled many more people to travel to "remote" landscapes in search of "the primitive," in both landscape and society. Thus, not only does the taming of wilderness persist, so, too, do the processes of colonial control over land as the ever-expanding power of industrialized nations over less-industrialized nations grows ever greater.

There is irony, too, in the fact that the very conservationists who have sought lifestyles and careers aimed at "getting back to nature" and escaping the stress of "civilization" by going to the far reaches of Madagascar, call for forest residents to leave nature alone and step up their own "civilization." Prohibited from transgressing the Maginot line of the Park boundaries, Tanala residents are kept out of the forests, while ecotourists and natural scientists are ushered in, a process that also parallels Cronon's

(1996) observations regarding the creation of U.S. national parks and the exclusion of Native Americans.

The myth of the wilderness as "virgin," uninhabited land had always been especially cruel when seen from the perspective of the Indians who had once called that land home. Now they were forced to move elsewhere, with the result that tourists could safely enjoy the illusion that they were seeing their nation in its pristine, original state, in the new morning of God's own creation. Among the things that most marked the new national parks as reflecting a post-frontier consciousness was the relative absence of human violence within their boundaries. The actual frontier had often been a place of conflict, in which the invaders and invaded fought for control of land and resources. Once set aside within the fixed and carefully policed boundaries of the modern bureaucratic state, the wilderness lost its safe image and became safe: a place more of reverie than of revulsion or fear. Meanwhile, its original inhabitants were kept out by dint of force, their earlier uses of the land redefined as inappropriate or even illegal (Cronon 1996:15).

Replicating this process of removing history from national parks to provide comfort for tourists, the history of the southeastern forests of Madagascar as sites of resistance and rebellion has been replaced with a history of primatology and soil erosion. At the same time, the contradiction of coercing residents into "modernization" in order that tourists and conservationists may enjoy the pleasures of escaping the modern world, is equally obscured. Perhaps this contradiction is best represented by the Project Manager's dream of an organic café for the tourists in Ranomafana; it would offer carrot cake and herbal teas made from local organic products, while forest farmers who have farmed organically for centuries are pushed to add chemicals to their own crops, and are restricted to an economic system that will never enrich them enough to afford a piece of this wholesome cake for themselves.

EPILOGUE

One Last Death

My fieldwork came to an end in the same way as it began, with another death. On the morning of my departure, I awoke once more, not to the eerie cries of the lemurs, which had so enchanted my mornings and nights, but to the ghostly cries of women wailing for the dead.

Mialy, a young woman in her early twenties, had died in the night.

Following eighteen months in the Ranomafana region and fourteen months in the village, I had been pressured to leave by project officials who asked me to sign an agreement that I would not speak to anyone affiliated with the project in the absence of their supervisors, including the project physician and health staff, and that I would not express any of my “personal or philosophical views” to residents of Ranotsara. This unprecedented “agreement” was presented to me shortly after I began to seek healthcare records for the region to assess whether the high morbidity of Ranotsara was a new or unique phenomenon in the region, and as I became increasingly outspoken regarding my concerns for the health of local people. In June of 1996, I was summoned to the capital city of Antanananarivo, for a meeting with Malagasy officers of the *Association Nationale pour la Gestion des Aires Protegees* (ANGAP, funded by World Bank and USAID) and with American representatives of the Ranomafana National Park. Following a patronizing speech about the value of my research into “medicinal plants,” the document was

handed to me by the American Project Manager. Written in French, it bore no indication of its origin – it was not printed on project letterhead, and it had no names other than my own. In essence, it was a document for which no one held responsibility.

The Principal Investigator silently awaited my response to her Project Manager's direction that I sign the document or, the American administrator informed me, the government of Madagascar would revoke my research clearance. The Malagasy administrators present remained silent.

I had already been subjected to persistent and invasive inquiries into my views, behaviors, and habits by project officials who conducted an "investigation" of my character by questioning and interrogating hotel and restaurant employees, my research assistants, acquaintances, and others. My mail had been delivered to the local post office and picked up, according to postal employees, by project employees. I received none of this mail. An envelope marked "confidential" which had been sent to me from the American Embassy arrived, having been torn open and re-taped. The letter bore the sad news that my father had died; the following day, having kept the news to myself, project employees I met on the road told me they were sorry to hear that my father had died.

As such, by the time I sat down with the project administrators who had steadfastly refused to discuss the issues of health and environmental change which they seemingly "sponsored," I was unwillingly to engage in further discourse because, just as with the project itself, the discourse of the meeting was far from participatory. It was, instead, a discourse orchestrated by those who sought to suppress meaningful dialogue in favor of maintaining an image of social and environmental responsibility.

Looking around the table to a group more divided in interests and objectives than those with whom I had been living the past year, but who shared the common agenda of preserving their jobs, I expressed my deep regret that the focus of the project inquiry became my personal and philosophical views, rather than the findings of my research which suggested that the conservation and development strategies of their project, in conjunction with local, national, and international economic and environmental changes, were contributing to alarming health problems.

To have agreed to not express my views to Malagasy residents would have not only limited my freedom of expression, but it also would have put me in the position of withholding information from the people with whom I was working. In short, it would mean that I not disclose to them the theoretical premise of my research nor the reasons for my questions. Moreover, because I perceived project employees, particularly members of the health team, to be subjects of my research, to refuse to speak with them in confidence and only in the presence of their supervisors, would have further violated the university contract I had signed concerning protecting the anonymity of human subjects. Although I raised these concerns to the people present, including the Principal Investigator, they showed no interest in, nor understanding of, the rights of human subjects.

Following the meeting, the P.I. asked me to meet with her in private, during which time she expressed immense sympathy for my departure (apparently having forgotten her tacit acquiescence to the project's coercive tactics ensuring my departure) and she asked when I would be leaving. I indicated to her that I would leave the village within two days. As I reached Ranomafana, on my return to the village, I met someone at a hotel who asked if I were the person from Ranotsara. Indicating that I was, she said,

“It is really wonderful what the project is doing there.”

“What do you mean?” I asked, having never heard such a remark before.

“Bringing them medicines, to help all the people who have been dying.”

I had thought, by that time, that no actions of project administrators could stun me, but this statement certainly did.

“I didn’t know about it. Who is bringing medicines?”

“[The Principal Investigator]. She is having Air Mad fly in Medicines. They will arrive Thursday. The doctor will take them out there.”

Consequently, I remained in the village a day beyond my stated date of departure.

Just as the woman at the hotel had disclosed, Dr. Tovo arrived the day after I was to have departed. He was bearing boxes of medicines. My suspicions as to the objectives of the project in dispensing medicines on the day after I was to have departed were betrayed in my face. Keeping his distance from me, the doctor made his introductions to the community. After some time had passed, I approached him in the presence of several community elders and leaders, and asked where the medicines had come from.

“They are not from the project, but the project has asked me to distribute them.” He did not say, but it was clearly evident, that by having the project doctor dispense them, that they would appear to be providing them.

“Then where did they come from?”

“Air Mad, and Farmad,” he answered. Air Madagascar is the national airline, while Farmad is a national pharmaceutical company, which produces low-cost generic forms of essential

medicines. His answer sounded as if he were avoiding the question – Farmad may have produced them, Air Mad may have flown them in, but who provided them?

“I don’t understand,” I asked, “Who is behind this?”

He smiled, acknowledging my impatience and knowing well the frustration I had felt throughout the last year.

“A tourist was here when Rabery’s son died. After you told her about all the people who had died, she went to Air Mad and Farmad and got them to contribute the medicines.”

I felt like a fool. I remembered the tourist well, a Belgian woman who had come with a tour guide, hiking through the “primitive” terrain of the rainforest. She was one of the very few who passed through who showed any interest in the people. She came out of the house in which she was staying to find out what the wailing was about, and I, in my growing disgust with the indifference of my compatriots, remarked that this death was only one in a series, and I told her of my frustrated efforts at doing anything about it.

She apparently did something, something so simple, that I in my self-absorbed fury at the project’s failure to act, had not even thought to do myself. She asked the people of Madagascar to do something, to provide essential medicines.

Of course, the medicines the doctor dispensed would do little to help in the long-term, and the health crisis in Ranotsara reflects similar patterns of health problems throughout the island. But the *act* of providing the healing substances would go far. And the people of Ranotsara knew well that it was not the project which provided the medicines, nor myself, but the kindness of a stranger passing through.

That night, as we boiled a pig and celebrated my departure, Rabery's sister grew ill. Only a few days before I had photographed her hacking away the rice in her brother's *tavy* fields, her cheeks swelling with the broad smile she displayed for the camera. Now, like Nety, and without warning, she began seizing. Dr. Tovo left the festivities to look over her. Administering anti-seizure medication, she promptly vomited it up. As the seizures grew more severe, he ordered some young men to hurry over the mountains to Ranomafana to get medicine he could inject.

As the hours passed and the villagers grew more and more intoxicated and well-fed, the music played and the people danced, the family of Mialy remained inside, anxious for the return of the young men. Dr. Tovo continued to try, futilely, to get the woman to keep the medicine down.

By nightfall the young men returned, half drunk, with no medicine. They told the doctor that the pharmacy was out of stock.

"They probably only went as far as Moratoky," he said, shaking his head and showing his frustration at his inability to help, and his profound sadness at the knowledge of what such powerful seizures would do to such a young and vibrant woman.

"But even if they went to Ranomafana, the medicine probably wouldn't be there. There is not much medicine in stock," he conceded.

We pondered ways that he could keep the medicine down. He tried to push tubing down her throat, but it would not work. He deliberated ways to crush the medicine and inject it safely, but that idea would not work. In the end, there was nothing he could do, despite his boxes and boxes of Western medicine.

The village was too remote, the pharmacies too poorly stocked.

She died in the night.

And so my stay in the village ended with one last trip to the *trano be*, the “big house,” which I had come to know as the House of the Dead. Expressing my sadness to her mother, a woman younger than myself, I left the village, having distributed my “essential” cultural objects to the hoards who surrounded me, in their hopes that I would bless them with the riches of the Western world, and their knowledge that I would not.

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