ISLA

A Journal of Micronesian Studies

Volume 1, Number 2 / Dry Season 1992

Published twice a year, (Rainy Season and Dry Season), ISLA: A Journal of Micronesian Studies is a publication of the University of Guam Press, UOG Station, Mangilao, Guam 96923

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Cover: A young girl going to mass. "Instead of the cumbrous *mantilla* [worn by Spanish women] . . . a handkerchief here [Guam] covers the forehead, and floats loose over the shoulders." (p. 259. Arago, J. 1823. *Narrative of a Voyage Round the World in the "Uranie" and "Physicienne" . . . Commanded by Captain Freycinet . . . 1817–1820; . . . In a series of letters to a Friend, by Jacques Arago, Draftsman to the Expedition.* London: Treuttel & Wurtz.)

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ISSN: 1054-9390

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Contents

Introduction

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This issue of *ISLA: A Journal of Micronesian Studies* has been organized on the theme of Issues Facing Women, Children, and Families in Contemporary Micronesia. The preface by Robert Underwood, and Laura Souder's speech to the 1991 Pacific Women's Conference in Palau, initiate the reader in some of the perspectives held by contemporary Micronesians on this theme. These two Chamorro scholars ground their discussions in the continuum of time and in the contexts of tradition and family—inescapable frameworks for the contemporary study of Micronesian people and the conditions of their lives. Souder challenges other Micronesian women to confront the "normalcy" of their cultural traditions as a necessary condition for moving forward and, as a consequence, to expect conflict and to learn to manage it.

Attention to issues of deep relevance to women in Micronesia is continued by Workman, Workman, and Cruz-Ortiz in their consideration of demographic trends and fertility data associated with abortion in Guam. In this article they lay a foundation for objective discussions and future investigation in this highly controversial area.

Violence against women, children, and the elderly has escalated in Guam and other parts of Micronesia in recent years. Empirical and theoretical examination of domestic violence in the region has been scarce, but some

ISLA: A Journal of Micronesian Studies, 1:2. Dry Season, 1992, 165–68

social service and health agencies and judicial systems have begun to organize resources to address the suffering of victims and to prevent violence in Micronesian families. These efforts are most apparent in Guam, but work has begun elsewhere in the region as well. In Guam, a shelter for women and children exists—*Alii,* and members of the judiciary have reached out to educate the public. In the Marshall Islands, wife beating became an issue in the last election. In a regional public health program, efforts began to create definitions of child abuse for each culture and to initiate a public education program. In a special issue of *Pacific Studies,* Dorothy Ayers Counts provided the first major collection of articles on domestic violence in the Pacific, three of which focused on Micronesian cultures: Palau, the Marshall Islands, and Kiribati. In this issue of *ISLA,* nurse-anthropologist Hoff reviews these articles and for the first time places wife beating in Micronesia within the framework of the international literature. A key issue in this discussion is whether the phenomenon can be understood through a global lens or whether violence against women in the Micronesian family can be understood only as a function of narrow, culture-specific factors. These questions may stir debate, and, as Hoff argues, advances in our understanding will be possible only when the dialectic turns away from purely anecdotal discussion and reviews of public records, and researchers begin speaking directly to the Micronesian women who have been the victims of the violence.

Five of the articles in this collection address issues of substance use and abuse, all in association with gender and family. This portends—I believe—a theme of regional significance that is likely to recur with regularity in future discussions of family violence in Micronesia and elsewhere. Alcohol, betel nut, and tobacco use by women on Guam is examined in a research note by Pinhey, Workman, and Borja, and alcohol and other drugs receive attention again in Hezel and Wylie's presentation on schizophrenia and chronic mental illness in Micronesia. Jo Scheder reviews Mac and Leslie Marshall's book on alcohol prohibition in Chuuk and the role played by women in establishing the prohibiting legislation.

Other book reviews and two research notes carry the focus on women further. Rosalind Hunter-Anderson comments on Martha Ward's description of her experience as a female engaged in anthropological work on Pohnpei. The experience of women in the field in Micronesia is again visited as DeVerne Reed Smith reviews *Beyond the Dream,* the autobiography of one of the best known female anthropologists of Micronesia, Laura Thompson.

With Penny Schoeffel's article on malnutrition and dependency on food imports in Micronesia, other aspects of the well-being of Micronesian women and their children come into view. Moreover, Schoeffel's analysis is placed squarely within the Pacific island niche of the global economic development framework. Prasad's piece on diseases that involve water in the transmission process and affect Micronesian children (e.g., dengue fever, cholera, leptospirosis, amoebiasis) again reminds readers of the importance of the economic development status of specific Micronesian environments when efforts are made to plan research and feasible prevention programs.

Four articles address education in Micronesia. The 1964 speech to the Truk High School graduating class by Petrus Mailo, a respected traditional leader, establishes not only a temporal benchmark for education in the Eastern Carolines, but also grounds us in a rarely available indigenous view, given near the beginning of the era of American format public schooling in Micronesia, on the role that formal schooling was expected to play in the future of Micronesia. (The speech is included here in Chuukesè, as delivered by Mailo, and in English translation.) My own article, Literacy in Micronesia, set in the 1990's, examines the outcomes of the region's greatest economic investment—the public school enterprise. In presenting census-based estimates of literacy, as well as an empirical database on English and first language literacy, I question assumptions about the education-literacy-economic development link in Micronesia. I also discuss the literacy environments of Micronesia and the role literacy in the indigenous languages and in English is likely to play in the future economic development of Micronesia. Jennifer Rush's note provides readers with an example of an indigenous Micronesian language literary form.

In what is likely to become a historical reference article, Hezel and Wylie present an epidemiological overview of severe mental illness in Micronesia. This article, and many of the others, will raise as many questions as they answer. It reminds us of how difficult it is to conduct rigorous research on sensitive topics in Micronesia; at the same moment it challenges us to understand and further explore the dynamics of mental health and mental illness in the region. In regard to the sex differences discussed, this article will stir those of us concerned with the psychology of women to begin at last the documentation and description of the mental health dynamics of Micronesian women. For the human service professionals of Micronesia who believe that we face a mental health crisis in Guam and an almost unformed service response to mental health issues throughout the remainder of the region, this article joins the earlier work of Hezel and Rubinstein on suicide

as essential conceptual and planning building-blocks (e.g., Hezel 1989; Rubinstein, 1992.)

The collection of papers offered for this theme issue is precious in the sense of providing practical scholarship on a number of the crucial problems of contemporary Micronesia. It is, nevertheless, very far from being enough. In addition to the controversies several of these papers raise that will need further research attention, this collection is silent on some of the issues that have been prominently pointed out in the daily journalism of the region, such as the impacts of migration to Guam and other destinations that were stimulated by the Compacts of Free Association between the United States and the Federated States of Micronesia and the Republic of the Marshall Islands; as well as the extensive use of foreign workers in construction, garment factories, domestic work, childcare, and even prostitution. It is not difficult to see that these migration issues bear on the lives of Micronesian women and children, and on the manner in which Micronesian families and their cultural traditions will continue to function. These more recent problem areas are added to existing ones—we still lack fundamental descriptions of Micronesian families, and basic descriptive, as well as comparative, research findings on problem areas such as child abuse, wife beating, gender attitudes and relationships, the organization of education and work, alcohol and other substance use and abuse, and the adjustment processes used as families adapt traditional customs in the face of modernizing forces. As the region becomes more aware of the jeopardy of public health threats such as AIDs in its midst, perhaps we will see that many of these sensitive issues in need of research will respond better to the efforts of "insider" researchers who, as a gift of birth and family, can combine their linguistic and cultural skills with Western methods of scholarship. The women-centered research agenda and the guidelines for "outsider" research, which appear as research notes in this issue, may guide us all toward this end.

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Families, Women, and Rapid Change

ROBERT A. UNDERWOOD

In legislative halls, at community centers, and in political meetings across Micronesia, the issues of cultural change, economic self-sufficiency, and political self-determination are frequently debated as the main problems confronting the future of Micronesian peoples. Planners discuss these issues, politicians pontificate about them, and community leaders advise the public. At another, more immediate level, the perplexities confronting the Micronesian peoples have nothing to do with any of these issues. Instead, the experienced and felt issues have everything to do with the family and the dynamics of male-female relationships.

The family in its various manifestations throughout Micronesia is the unit that traditionally has kept the society intact, responsive, and responsible in the face of change. Micronesians, by an overwhelming majority, see families as the basic building blocks of society; moreover, they tend to see each other not as individuals with particular professions or personalities, but as people from certain families. This family orientation is healthy and necessary for their continued survival as Micronesians, for it is in the family context that most serious discussions occur and most decisions are made.

The family is also the venue where political, social, and economic change is directly felt. Micronesians experience these changes in their ordinary lives as part of a network of families, not as individuals conscious of their

ISLA: A Journal of Micronesian Studies, 1:2. Dry Season, 1992, 169–71

rights as political beings or as community-minded citizens tied to a nation-state. Typically, Micronesians experience the rhythm of their lives through the tune of family events, obligations, and celebrations. Thus, when we think about how Micronesians experience change, we must recognize that it is in the context of family that rapid change affects the lives of the peoples who inhabit the region.

At the same time that we consider family issues in connection with change, we must also confront gender relationships and examine the status of women. In many respects the vicissitudes of womanhood are directly connected to the changes now occurring. The woman, as the person most directly responsible for the day-to-day management of the family, becomes both a victim of and a responder to changes that obtain in the larger social context. The woman bears the responsibility for making sure the family can adjust to change and, as the manager of resources, she becomes the major figure in deciding how to respond to changing economic conditions. Traditionally throughout most of Micronesia, the woman made the decisions regarding the exchange of resources and she was also the negotiator and implementer of many resource allocation decisions. These roles have been transformed in modern Micronesian families to the roles of family accountant and treasurer. As the financial manager and scheduler of family events, the burden of maintaining cultural patterns in the face of economic difficulties and competing activities falls primarily on her shoulders.

She may also be blamed for changes by males who are unable to handle the shifting dynamics of employment, status, and politics in the community. Males who cannot adjust or who experience frustration in their broader lives return to their families—it is there the problems of modern life must be handled. Questions of education, shelter, health, and the need for additional resources cry for immediate attention, not lofty discussion of alternative social models. In the resulting frustration women, who manage the daily affairs of the family, sometimes become identified as the source of the difficulties being experienced. The opportunity for abusive behavior thus presents itself.

The burden placed upon both families and women by rapid change is enormous and calls for a dramatic reconstruction of our view of how to deal with change and how to manage it. Inasmuch as we experience change at the immediate level in the family, we must learn how to strengthen the family and enhance its capacity to adjust. When we think of family issues, their importance is sometimes not apparent, or we may perceive family issues as less important than more "weighty" matters. Discussions of child

rearing matters, dietary concerns, and home safety issues are sometimes trivialized as being of lesser consequence than a male-dominated discussion of foreign investment, for example. Far too often, expressions of concern about the nature of gender relationships focus on women only, while Micronesian men dismiss such concerns as insignificant.

It is time to draw new paradigms for the examination of pressing social, cultural, and economic issues in Micronesia. It is fascinating to think of the possibilities of making the family the focus, the battleground, the basis upon which these issues may be examined. If the family is the basic building block of society in the various parts of Micronesia, then it makes good sense to see the family as the basis for understanding both how problems are experienced and, more important, how they are solved. Educational systems will then have to develop a family curriculum as a central focus rather than as a minor section of some more important curricular subject matter. Political and economic institutions will have to develop family agendas. Politicians may have to develop family platforms that contain substantive planks addressing how families can be supported in their struggle to survive and maintain the essence of their Micronesian identities.

And in this process one of the first items of attention will have to be the nature of gender relationships in the region. Micronesian men and women have traditional relationships that arguably place women at a distinct disadvantage. Most scholars today would probably agree that while Micronesian women have a great many skills and play a dominant role in family life, they are still at a relative disadvantage when compared with men. Moreover, wherever domestic violence exists, women are typically the victims. Women have made great public strides in achieving leadership positions in some areas of Micronesia, but there has been relatively little progress in other areas.

The roles of tradition and modernity in the nature of gender relationships in Micronesia need careful study for their impact on our lives today. We already know that gender relationships are first modeled in the family and subsequently transmitted to society at large. By carefully examining gender relationships within the context of family life, we can learn a great deal about the strengths and weaknesses of Micronesian society in the face of rapid change. We will learn much about the stresses induced by rapid change and we can learn more about the adaptive mechanisms employed in the family.

Conflict Management by Micronesian Women A Strategy for Progress[1]

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Hafa Adai hamyu todos. Dangkulo na si Yu'os Maase, ginen hame i delegasion Guam put i inbitasion miyu. Dangkulo lokkue este na honra para guahu. Puede mohon siña ta fan affamaulek ya ta attituye hafa i mas dangkulo na problema-ta.

"Managing conflict in order to move ahead!" Why is this topic important for us to address? Can anyone disagree that our biggest obstacles to achieving our personal and collective goals exist in unresolved conflicts, whether they be with our parents, elders, spouses, children, teachers, or co-workers; whether they be with other women with whom we are called to work; or whether the conflicts be ours as Pacific peoples who are coping with world powers in our struggle to survive the destructive forces of a colonial legacy. The conflicts that we face in dealing with our relationships, at all levels of our beings as Pacific Island women, define our most profound and difficult challenge as we attempt to live up to the roles and responsibilities that have been assigned to us culturally while we carve out new roles and responsibilities for ourselves in the new Pacific Era. Our mission is by no means easy!

"Moving ahead" demands that we redefine what it means to be female in our region at this particular time in *his*tory/*our* story. Our cultures are very similar in the traditional ways in which women are viewed, socialized,

ISLA: A Journal of Micronesian Studies, 1:2. Dry Season, 1992, 173–82

and treated. We are in conflict with our traditional roles as women to the degree that such roles have us trapped in a world that is being left behind by progress, technology, and the new social order. We need to manage our conflict with our cultures in a way that makes moving ahead truly liberating, healthy, and balanced so that we do not erode our essential cultural values of reciprocity, respect for our elders, and our important responsibility as nurturers of the next generation. We also need to be exciting partners to our companions who choose to walk with us into a future we are shaping through our collective vision and networking.

Managing conflict does not necessarily mean being successful at reducing or eliminating tensions between us and those whose views we oppose. The destructive antagonism that we encounter in our efforts to work with women who are not like-minded is of paramount importance to us. We must also examine the conflict related to our uncertainty about how to handle new roles, new expectations, and new realities in our changing cultures. If there is a concept that challenges feminism here in Micronesia, then it is the concept of cultural change—that is to say, how being "normal" can keep us from moving ahead. We must confront our normal lives and be in conflict with some of the destinations to which our normality will take us in a rapidly changing world.

If it is normal for us to remain silent even when we long to scream out to those who pretend to have our best interests at heart, then we must be abnormal by traditional standards and let go our voices to confront power with truth. If it is normal for women not to read in the age of information, then we must resist the impulse to be normal or else we will not have access to the information we need to succeed in our new reality. If it is normal to be computer illiterate or to relegate abstract thinking and systems analysis only to men, then we must resist that normal assumption in the age of technology and economic imperialism. We must be in conflict with the normal scripts of women of our generation and of our cultures. If it is normal to believe that a woman's place is in the home or village in an age when decisions that have an impact on our livelihood, our communities, and our political aspirations are made in forums, community agencies, legislative halls, classrooms, boardrooms, and places of leisure, then we need to cross those boundaries of normalcy and position ourselves in the thick of the battle of ideas, hopes, aspirations, and analysis. We need to be in conflict with normal expectations if our very homes, family life, and future of our people demand that we participate in the exchange of ideas in the counsel halls of the powerful, influential technocrats. We will not be denied our contribution as

women of our time because of some outdated idea of what is supposed to be normal.

We are the women of yesterday's tomorrow. Our time is here and now. We choose to define our reality in view of our sense of what must be done to shape a better world. We do not want men to choose without us what must be done that will have an impact on what we are all to become. But if we remain normal by traditional scripts, we will be left out. You and I know, though, that as women of Palau and of all of Micronesia—we simply will not let that happen.

To be normal in the traditional sense in an age of materialism is not healthy. We must expose families, colleagues, and friends to the significance of spiritual values. We must never apologize for our relentless effort to be deeply grounded in the best values of our elders, our cultures, and our heritage as Pacific people. It matters not whether we belong to one church or another, but it matters a great deal whether we manage conflict. By that, I mean it is very important in our mutual journey as Micronesian women that we have walked together in a spirit of sisterhood, justice, and truth. We must constantly fight the tidal waves of materialism that threaten to drown our collective spirits. So, for the sake of a sane and healthier future, let us decide to stop being "normal."

Our greatest challenge as women of the Pacific, therefore, is the task of understanding that to move ahead, we must manage conflict between our traditional ways of life and the demands of a future where we must provide leadership. This we can do by redefining ourselves to be literate women, competent thinkers, spiritually grounded, and active participants in the exchange of ideas that will shape our tomorrows.

To keep us focused and motivated, we need to stop occasionally and examine our sense of purpose. We need to come together periodically, as we are doing here in Koror, to reaffirm our vision as Pacific women. Let us draw on the legacy of other gatherings in other times and places throughout the Pacific, where many of us who are here today have explored, debated, and articulated a vision together. I propose to you, as we engage in shaping and reaffirming our collective goals, that we empower ourselves with the wisdom of feminist thought. Many may disclaim any attachment to feminist ideals because the term feminism itself is misdefined and often viewed with skepticism by our Pacific sisters and brothers. This, too, is normal.

It took me many years of analysis and questioning before I began to understand that American-European feminism came out of the experiences of white females. They do not live in extended families, do not deal with

the tremendous responsibility of "custom," and do not have to fight colonization and imperialism the way we do. Their experiences are different from ours. Consequently, their analysis does not adequately address our reality. For example, I take exception to the fact that in white feminist circles I often have to defend the fact that Chamorro women do not view children as a source of oppression but rather as the ultimate source of social power and influence. I become impatient with women who cry for gender justice while blatantly ignoring the self-determination quest of our Pacific peoples in our homelands. Nonetheless, when I began to use feminism for scholarship and research, it revolutionized my way of seeing the world. Feminism provided me the framework for asking questions in a different way. It inspired me to ask questions that had not been asked before and to bring out realities about colonialism, racism, gender oppression, and class oppression that related to the Chamorro experience. I began to take a critical look at the colonial and cultural institutions in which we operate. A new level of reality began to unfold for me. I believe that when Micronesian women look at reality and dare to dream of different ways of shaping it, we can begin to create our own Pacific feminist perspective.

Imagine for a moment that for the last 20 years or longer, I have borrowed my father's glasses, then my brother's glasses, and later my husband's glasses to see anything that was important. Their glasses were not prescribed for me. They have nothing to do with my vision but I have been wearing them. So everything I see in the world, everything I understand in the world, is understood through the glasses that have been prescribed for the men in my life. Then, one day I get a pair of glasses for myself. I put them on for the first time, and the world is different. I see different colors and shapes. Everything takes on a whole new definition. Why? Because I changed my pair of glasses. But more important, it is because this new pair of glasses is what my vision needed in order to take on sharpness and clarity.

This is one way of looking at feminism as a concept. Feminism is the pair of glasses through which we can look at the world. Feminism is our perception, our vision. It is a vision that is female-inspired. It is a vision that works for us as Pacific Island women in our different Pacific societies. It is our way of saying "This is the way I see things."

I invite you to embark on a journey to discover a vision of justice for ourselves as Pacific women. We need to think seriously about taking off those glasses that belong to our fathers, brothers, husbands, and lovers, and putting on our own pair of glasses. You might say "Well, I certainly don't have a vision problem." I would argue that we have all been blinded by

someone else's vision. The real danger is that we often do not even know we have failed to use our own powers of perception. One symptom of this blindness is when we catch ourselves saying "We don't need to be liberated. I'm doing fine. The reason she has problems is because she is lazy or just doesn't want to get ahead," or the common disclaimer, "There is nothing wrong with the way men treat women." We must avoid the trap of believing that our personal experiences are similar for all women. Women's lives are determined by the institutions of the societies in which they live. We must look at how these institutions affect us throughout our societies and not limit our vision to what we as individuals experience. We are here in Koror because we are free to move. There are many more women throughout Micronesia whose husbands, parents, or brothers would beat them rather than let them out of the house to attend meetings or do other things freely. We need to remember them!

The clash of ideas that takes place in our midst regarding what is to be done to achieve our feminist ideals will be resolved when we manage conflict in ways that spark us to embrace more liberating agendas for ourselves and for our sisters in the region. Our men will not always understand. We need to realize that as mothers we have shaped them into beings that resist and choose not to understand. They, our men, will not necessarily become our partners. Some will oppose us. They will accuse us of being sexless or capable only of loving each other. They will not make our task of building a stronger, healthier, nuclear free, and independent Pacific easier. They will not always understand the power of women who are engaged in the challenge of transforming our family lives, our workplaces, and our relationships in ways that create a climate for equality, mutual respect, and networks that really work. So we must be prepared to be in conflict with that kind of normal opposition.

Let us manage that conflict in ways that help us recruit the men in our lives as partners in our process instead of antagonizing them in ways that produce predators. They must be made to understand that in the age of information our developed, informed brains are equal to other developed, informed brains. Let us forever be mindful, however, that a brain weakened by alcoholism or drug dependency—whether male or female—incapacitates all of us and prevents us from implementing the best articulated agendas, feminist-inspired or not! Sadly, many of our people are traveling this road to destruction.

We must talk, share resources, make video tapes, conduct training, and communicate—utilizing every means we can. We must participate in activities

at home and at work that reinforce the values of a new age in which we are respected as the women of the 1990s. We extend a hand, an arm, a welcoming embrace to our men in this great adventure. If they fail to accept our invitation, it is they who will be left out. What a pity if men should choose to journey only with each other when as full partners the women of the 90s can be so much fun, so exciting, and so challenging in transforming the socio-cultural-political reality of Micronesia.

A word of caution, sisters, on the issue of male-female conflict. Do not be hasty in damning Micronesian men for being abusive, insensitive, and double-standard bound. As nurturers, we have had a lot to do with how the men in our lives have turned out. We must decide to stop the vicious cycle of rearing pigs and predators rather than partners. The boys we socialize today will become the husbands, lovers, and co-workers of our daughters in the next generation.

Part of developing a feminist vision is understanding that we women embody numerous contradictions we must resolve. We often allow ourselves to be abused, insulted, and maltreated. I speak from the painful memory of my own personal experience. I know it is difficult for most of you who know me to imagine me as a victim—but we must face up to the reality that we are all victimized, sometimes by our own limited vision of who we are and what we can become. I finally said no several years ago to a relationship (my first marriage) that diminished my humanity and eroded my sense of purpose and my identity as a woman. Last year, I said yes to another relationship that truly has been made in heaven. My husband is everything I ever dreamed a perfect partner could be and more. It took me 40 years to join forces with him! I now know what I speak of when I refer to being equal partners. Our journey together has not been without the wonderful excitement of debates and challenges. We are learning to rewrite both our life scripts together—and believe me, it is never easy. One thing is certain though: I will never run the risk of being normal again—Thank God!

What I am saying to you is this. Please make sure that your sons, nephews, grandsons, godchildren, and students learn the valuable lesson of unlearning how to be destructive. Teach them how not to be normal in the positive sense of the word. We need to manage the conflict of values in children now to avoid the conflict between wives and husbands tomorrow.

We need preventive feminist strategies in our quest to manage conflict, especially when we consider the conflict between women. This reality is fierce, destructive, counterproductive, ever present, and the hardest for us to deal with in a gathering like this one. But I am going to try.

To create a united force made up of women who choose to work together as a group to achieve collective goals, a policy regarding conflict management must be adopted and implemented. Too many barriers exist that frustrate women or prohibit them from moving ahead, achieving success, having access to wealth, power, and prestige, and from making larger meaningful contributions than are expected or allowed in our traditional cultures. We live in a world in which systems benefit men at the expense of women. We must therefore come together as women with a heightened consciousness to maximize our resources. Only then can we make progress through effective social change.

What obstacles will we meet in our efforts to accomplish such tasks? How can we successfully deal with obstacles so that we can reduce tension, isolate destructive practices and behavior, and eliminate barriers in our path to a better future? Where do we look for positive role models in our honest search for answers to our pleading questions? What can we do as a group and as individuals to promote positive social change?

You might be thinking, "Hold it, not so fast. You are asking too many questions." Let us address this issue one step at a time. First, let us agree that there is strength in numbers. But we must also realize that numbers alone will not give us the strength we need for our very important agenda of removing barriers to the progress of Pacific women. For our numbers to be harnessed into a force, we must develop a series of beliefs, theoretical constructs, and philosophies to guide us. Once we do that, we need to remind each other that we must do what it takes to make our goals a reality. Here, then, we propose to manage conflict by establishing a set of behavioral expectations on which our members agree. Let us call this framework a code of participation.

In organizational work, when we propose to utilize group resources for gatherings, publications, and events, we need to ask "In comparison with other proposed ideas and plans, how does this activity help to promote our collective goals?" When someone is nominated as a delegate to an event, we need to ask "Is this the best person for the task? How will this person represent the group?" Because we are so few and our ocean of responsibilities is so big, we need to be careful and select competent, hardworking people to represent our interests. Those among us who have egos that do not get in the way of what it takes to work with all kinds of people are often better suited for sensitive assignments. Those we select to represent us may not be the women we would invite home or take a trip with; nonetheless, they may be more capable representatives than our cronies. We need to

learn how to promote the best ideals and the best people, even if it means protesting some selections so that we do not put dysfunctional persons in sensitive leadership positions. This, of course, is easier said than done; but we must do it in the spirit of sisterhood. If not, we are asking for delayed justice to our causes.

Let us engage in debate, but with a set of rules that when applied allows us to choose between alternative ideas and not alternative personalities. We need to learn how to disagree without sabotaging each other. This is very hard in cultures where parents have their way simply because they are parents. How many of us have been told "Shut up!" or have been ordered to do something simply because "I said so!"

We need to develop ceremonies that are geared toward promoting harmony, like the women's festival we had in 1989 at Guam's Palauan *bai.* We need to develop presentations, through our songs, gestures, and the beauty of our bodies and diverse languages, that dramatize the tensions we face and our successful resolutions of those conflicts—again in much the same way the Palauan women did at the Guam conference several years ago. In essence, we must create new traditions to fit our new reality. Remember, we have already established that to be "normal" is to be dysfunctional in view of our new realities that demand new scripts. Let us put our music to tasks other than commemorating our proud past, as admirable as that is. We can also use music and dance to point to a new, invigorating, and united future. These kinds of activities will allow us to appeal to our traditions to introduce the new.

We must write our ideas on paper and put them on tape. We must review, discuss, and examine what community leaders promote as guiding principles and programs for the future. If necessary, we should dispute, challenge, and counterpropose. We need to listen and put ideas together from many different sources. In the age of information and technology, of facsimile machines and photocopying resources, it makes sense to share our ideas in writing. Thus, we can be clear about our differences and about our goals. We must become literate in how best to present and organize ideas.

I am amazed that among us are women in responsible positions of leadership whose actions make the claim that less is better than more either by their lack of support for skill-building activities for women or by an apparent lack of understanding of the reality of women's lives in Micronesia, or both. We must guard ourselves from believing that those women with credentials and the ability to speak and write are always the best suited for leadership positions. There is no doubt that if our daughters have attained

degrees we should expect that they will contribute their talents and skills, but they must also possess a consciousness about being part of our struggles as women. If not, they can use the ideals of our causes to promote personal agendas that result in further conflict instead of reducing tensions.

That is why these conferences are important. In the time we share together we can better observe who practices what she preaches and who does not. Lip service without accompanying action can lead us nowhere. So let us be alert to both symbolism and substance. We must admit to our differences and go beyond them in our collective attainment of goals. Suspicion and mistrust will never produce good results.

What about the difficult task of dealing with real conflict between women in our midst? What is to be done? We must understand that conflict will arise and engulf us all at one time or another. It is virtually inescapable. Whether we can manage it in a way that can serve to strengthen the fiber of the group is what we must be concerned with here. We must guard against being cannibalistic and against attempts to destroy another member of the group. We must confront each other with honesty, integrity, and, no doubt, passion. But we must understand that what we want at the outcome of our confrontation is a stronger movement, not a divided group. In that spirit we need to be careful not to engage in debates destined to ridicule, discredit, and shame our opponents. This is not easy. Our cultures are full of symbols from nature that have a double meaning. We are powerful in our knowledge of how to hurt each other.

Yes, we must sit on our hands, bite our tongues, and at times vote holding our noses to promote the greater good of the group. We must take seriously our voluntary tasks as members of committees. Never commit to doing what you know you cannot deliver. We must carry our fair share of the load and do our fair share of the dull work to move ahead in the 90s. When some of our colleagues accuse us of not doing what we agreed to do, we should be honest enough to say "I am sorry, I was wrong. I will correct the error."

We must not be unfaithful partners to our cause. We must respect each other's husbands. There is nothing worse than to be in the same room and to act as though you are working in harmony with a woman whose husband you may be "sleeping" with. In small island setting such as ours, everyone eventually finds out about our best kept secrets. The best policy, then, is to promote healthy relationships between people so that we are not guilty of what we accuse some of our men of doing.

As you can see, there is much to talk about regarding our subjects of women and of conflict. Let me suggest that among the outcomes of this conference, we develop a written history of our efforts to work together so as to keep a record of our victories and defeats. When we do this we become the intellectual grandmothers of the next generation who will read and learn from our experiences.

Let us not forget that the larger conflict we face as we attempt to achieve self-determination for our island homelands is a task that requires working with men and women who may not totally understand what we have come together to do here. We must fight to insure that our languages, cultures, and traditions, which have enabled us to survive typhoons, wars, and other *man*made catastrophes, will be maintained and transferred along with new traditions into the twenty-first century.

In our collective struggle, we as women will follow, we will lead, we will debate, and we will confront and manage conflict. In these ways we will insure that when the story of our times is written, it will be said that we came together in Palau in the summer of 1991 to renew our energies and to dedicate our personal talents as women of the Pacific for ourselves and for our people.

God bless you. May our ancestral mothers take pride in us. May our daughters one day aspire to emulate us. Thank you for having me as part of this special gathering. I end with thoughts of a splendid beginning. In us the new Micronesia is waiting to be born. Let us join hands to usher in her birth with pride and joy in the knowledge that we are helping to create the powerful force in the world that she is destined to become in the next century. She can be ours, if we but claim her for ourselves.

Note

1. This text was the keynote speech given at the Palau-Pacific Women's Conference held in Koror, Palau, July 8, 1991.

Abortion on Guam: Demographic Trends and Fertility Data

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This paper examines the occurrence of abortion by analyzing Guam's demographic data and statistics on legally induced abortion between 1981 and 1988. The data illustrate a relatively low level, fluctuating pattern with no increase or decrease over the decade. The findings may be due to reporting policies, underreporting, and low rates of abortion among this predominantly Roman Catholic population. The social science literature on abortion and its historical practice on Guam is reviewed. Anthropological studies point to some historical use of abortion on Guam for regulating pregnancies. It is likely, however, that abortion rates have been and remain relatively low because children are valued highly, Catholic doctrine opposes abortion, and unwanted births beyond a desired family size can be avoided by the use of birth control. Policy implications for developing accurate data resources for addressing womens' health issues are discussed in light of the abortion controversy.

In March 1990 the governor of Guam signed into law a bill to ban all abortions except in cases when continuing the pregnancy would endanger a woman's life. At the time, this event put Guam at the forefront

ISLA: A Journal of Micronesian Studies, 1:2. Dry Season, 1992, 183–98

of the US controversy over both the abortion issue and legislation to overturn the *Roe v. Wade* (1973) decision. Guam's law was ruled unconstitutional in August 1990 by a federal district court judge, an act following a similar pattern of legal battles that have occurred in Idaho, Louisiana, and other US mainland states. In the United States and Guam, the abortion controversy has diverged from concerns about health issues to become a political debate between pro-life and pro-choice ideological groups.

THE HISTORY OF ABORTION ON GUAM

Guam is a multiethnic community of 133,152 (US Bureau of the Census, 1992). The population is approximately two-fifths indigenous Chamorros, one-fifth Filipinos, one-fifth US mainlanders, and one-fifth other groups, predominantly Asians and Pacific islanders (Interagency Committee on Population, 1988).

Guam, like the Philippines, was a colony of Spain for over 300 years, beginning in the sixteenth century. The primary cultural impact of Spanish colonialism was religious conversion of the indigenous population to Catholicism. Guam became a US Unincorporated Territory after the Spanish-American War in 1898, and Guamanians became US citizens in 1950.

There are three historical components of Guam's current abortion issue. First is the predominance of Catholic ideology in the major leadership sectors of the community. Second is the diffusion and integration of feminist ideology, via women's health and birth control movements (Griffen, 1983) into the world views found in other sectors of the community. Third is the fact that these conflicting ideologies, mixed as they are among individuals in familial and social groupings,[1] must negotiate Guam's abortion law within the framework of the US legal system and in the context of the US struggle over national abortion law. Catholic ideology is a major force in island politics on Guam because of the Church's historical role in both Chamorro culture and island government (Underwood, 1985). Guam, however, is becoming a more cosmopolitan world community. The multiplicity of personal values in the community has expanded with increasing education, economic development, changing roles of women, ideological discourse in the mass media, and evolving linkage with the world's global village.

Legal abortion has been available on Guam since 1974, in accordance with US law set under the *Roe v. Wade* Supreme Court decision. Some of

the actions leading to and following from the passage of the 1990 Guam abortion law have been part of a national struggle over abortion. But for the Catholic Church, for the women's health and reproductive rights movements, and for Guam, the abortion issue is a global one.

Abortion has been a widely practiced form of birth control and pregnancy regulation throughout human history. It is the "single most often used form of birth control around the world, and it is common even where it is illegal" (Weeks, 1989, p. 106). The position of the Roman Catholic Church has wavered and shifted over the centuries (Hurst, 1989), and abortion is common in predominantly Catholic countries such as Italy, the Philippines, and within Latin America (Jacobson, 1990). The Church's current position was set in 1869, yet there has been a continuing debate among Catholic theologians ever since. Around the world national laws on abortion have been debated and changed for over a century as population pressures, economic modernization, and political strength have tipped the scales of policy advantage either toward the birth control movement or the forces opposed to it (Petersen, 1975; Weeks, 1989).

The earliest references to abortion on Guam were made by Jesuit priests and Spaniards in the sixteenth century (Rubinstein, in press) who chronicled Chamorro attempts to thwart subjugation during the forced colonization of the Marianas. Although the depopulation that occurred during this era resulted mainly from warfare and introduced diseases (Carano & Sanchez, 1964; Underwood, 1973), the possible role of intentional mortality and abortion cannot be discounted. Similar events are documented among other peoples subjugated by Spain (Zinn, 1980).

For the Mariana Islands and the rest of Micronesia, the historical and anthropological records reveal that traditional abortion methods were known and practiced by the inhabitants well into the twentieth century. On Guam, despite 300 years of Spanish colonization and Catholicism, Chamorro women modified and extended their knowledge of abortifacients and emmenagogues (Pobutsky, 1984; Thompson, 1947). This is not to say that abortion was an accepted cultural practice. During the Spanish colonial era, abortion was never condoned: "Caning and forced labor were inflicted from time to time on women who voluntarily aborted" (Thompson, 1947, p. 83). This is consistent with information from the Micronesian island of Yap; Schneider (1955) examined Yapese abortion practices and noted that abortion was a secretive activity among women. Abortion knowledge was kept from men because the men did not condone it and would inflict violence upon their wives if the practice became known to them.

Abortion has been a historical option for Chamorro women to deal with unwanted or feared pregnancies in the recent and the long-term past. It should be noted that our ongoing field research has not revealed abortion per se to be practiced by the traditional healers of Guam; emmenagogues and other recipes for bringing on the menses are more commonly used (Workman, Cruz-Ortiz, & Quinata, 1992). This is consistent with information about the Philippines where abortion is illegal and where numerous herbs and roots are still used as emmenagogues and abortifacients among this Catholic population (Guerrero, 1977). Among Spanish New Mexicans, Conway and Slocumb (1979) noted that treating for missed menses with plants avoids the dilemma of abortion among this predominantly Catholic population. On Guam, Thompson (1947) recorded several abortifacient recipes that include indigenous techniques involving herbs and roots as well as ingredients introduced by Spaniards. Evidence from research by Workman, Cruz-Ortiz, and Quinata (1992) suggests that Thompson's recipes may be incomplete because it is thought that no *suruhana* would divulge a complete recipe. The continued use of abortifacients and emmenagogues was substantiated in recent years after a man was arrested for performing abortions and practicing medicine without a license in 1985 ("Man Arrested," 1985). It should be noted that measures to promote fertility are requested frequently (McMakin, 1978; Pobutsky, 1984).

Historic and ethnographic data reveal that Guam's abortion law controversy is rooted in a worldwide struggle between ideological forces over a common human practice, that is, self- and provider-induced abortion. What is not known is how often abortion occurs on Guam. Is it a rare occurrence or is it prevalent and widespread? Did the 1974 deregulation following the *Roe v. Wade* decision result in increased abortions? Has there been a steady increase in the number of island women choosing abortion as a birth control option rather than choosing other methods to avoid pregnancy? Would the new law severely restricting abortion affect a large or a small number of women? How does the choice of abortion fit within family planning strategies of island women?

Answers to these questions are important to island leaders, policy makers, and island women on both sides of this issue; informed decisions, however, depend on the availability and accuracy of Guam's health data. This article now examines these data and presents findings in terms of what is known.

DATA AND METHODS

All available data and statistics about family planning services and abortions were examined in this study. Government of Guam vital statistics records, health planning publications, and public health data on family planning services were reviewed, as were demographic and fertility studies.

Abortion ratios were calculated as the number of reported abortions per 100 women aged 15–49 and per 100 live births. The crude abortion rate per 1,000 population was calculated as the number of abortions relative to the total population. Data for the United States and selected other countries were obtained from the *United Nations Demographic Yearbooks* (1982–1989). Data for Ireland were obtained from Henshaw and Morrow (1990).

Abortion statistics were calculated using data compiled at the civilian Guam Memorial Hospital (GMH) since 1980. The data included the number of abortions performed at private clinics and the number of both voluntary and therapeutic abortions. Abortions are not performed at the US Naval Hospital; therefore, both civilian and military women were assumed to be included in the computations. Involuntary miscarriages, or spontaneous abortions, were classified as therapeutic until December 1988 when, for recording purposes, a distinction was made between voluntary and therapeutic abortions. According to a GMH administrator, all 1989 abortions are classified as voluntary ("GMH Releases," 1990).

The classification of all 1989 abortions (including miscarriages) as voluntary is problematic for data analyses, particularly when other data on the health and social characteristics of the women were not collected. We will return to this limitation when discussing policy implications of the study.

FINDINGS

Overall, we found that Guam has a low crude abortion rate and that the rates of abortion relative to women of childbearing age and relative to live births are also low. However, the data displayed erratic fluctuations with no consistent trend pattern, unlike other countries with legalized abortion where their rates are more stable over time. The lack of a clear pattern may be due to reporting problems (from private clinics to GMH) and the periodic inclusion of miscarriages and therapeutic abortions in the reported statistics.

To begin this investigation, it was important to clarify Guam's general fertility patterns and trends in childbearing. Induced abortion is only one possible outcome of pregnancy. Of all pregnancies conceived in a given year, there are only four possible outcomes. The embryo may be normal, resulting in a live birth, or abnormal, which may result in a live birth, but more often it will miscarry (unintended abortion). In other cases the mother's health is endangered by the pregnancy, and some women will require a lifesaving therapeutic abortion. These three outcomes are different from the event of induced abortion addressed by Guam's 1990 abortion law. Among pregnancy outcomes, rates of induced abortion would be expected to vary according to changes in people's ability to control unwanted pregnancy, and if pregnancy occurs, changes in peoples' willingness and opportunity to terminate a pregnancy.

As shown in Table 1, Guam's fertility levels are higher than those of the United States. Women on Guam have higher birth rates than their US counterparts at all age levels except those aged 10–14 years. Within this adolescent age group, the likelihood of pregnancy and eventual birth on Guam is similar to the United States. The implication of higher age-specific birth rates suggests that older and married people on Guam, when compared with older and married people in the United States, view higher frequency childbearing more favorably, do less to avoid pregnancy, and, if pregnant, are less likely to terminate a pregnancy (see Bulatao, 1981; Fawcett, 1988).

Table 1 *Age Specific Fertility Rates (per 1,000 Women) for Guam and the United States: 1987*

Age	Guam	US
10–14	1.1	1.3
15–19	82.5	50.6
20–24	221.4	108.2
25–29	187.9	109.2
30–34	98.6	69.3
35–39	43.9	24.3
40–44	8.6	4.1
45–49	1.2	0.2
Total Fertility Rate	87.5	65.4

Note. From Department of Public Health & Social Services, *FY 1991 Family Planning Project Grant Application,* 1990, p. 6. Mangilao: Government of Guam.

The literature on Guam's demographic trends illustrates not only declining fertility since the 1930s, but also conscious efforts to limit childbearing, particularly among married women (Carter, 1981; Levin & Retherford, 1986; Tung, 1982; Workman, 1989; Workman & Workman, unpublished manuscript). Organized family planning programs first began service delivery on Guam in 1971, but evidence indicates that the fertility decline began several decades before organized family planning services became available.

Thus, the impact of peoples' acceptance of modern family planning methods and related public programs has been a continuation of the declining fertility trend that started before World War II. Our conclusion is that the attitudinal and social-economic motivations for pregnancy control on Guam are cultural trends of the changing island society—the patterns are not mere consequences of contraceptive availability. Studying the decline of Guam's fertility from 1966 to 1980, Guam's Interagency Committee on Population (1988, p. 89) found that "a large part of the decline was due to acceptance of family planning, [and the statistical indicators suggest] almost all of the decline during the final period is attributable to conscious child limitation" (clarification added). Many Guamanians remain Catholic, but they use contraceptive methods to plan their families.

On the other hand, Levin and Retherford (1986, p. 48) noted that the decline in marital fertility "has been concentrated at the older reproductive ages, and fertility at 15–19 has actually increased." Birth records reveal an increasing rate of illegitimacy to a point where about one third of the births since 1987 have been out of wedlock (Office of Vital Statistics, Annual; Workman & Burton, 1982). Teen pregnancy and increasing illegitimacy are major issues on Guam. This was clearly stated in the justification section of the 1991 Family Planning Grant application, which was aimed at reducing high risk fertility among adolescents and single women over 35 years of age. The Guam Department of Public Health and Social Services (DPH&SS) noted that the fertility rate of teens aged 15–19 years was 38 percent higher than the US rate for the same age group and suggested the difference may be explained by the ". . . fewer abortions which occur on Guam. . . . Unfortunately this statement is mostly supposition because abortions . . . are not well reported, so hard data are lacking" (DPH&SS, 1990, p. 6).

Guam's childbearing trends and policy concerns with teen pregnancy and illegitimacy are relevant to an understanding of its abortion trends. We will refer to these as this study proceeds with an examination of Guam's abortion statistics.

Table 2 provides information on the number of abortions and abortion ratios for Guam and the United States. Guam's ratio measures of abortions relative to numbers of live births (ranging from 2 to 12 per every 100 births) and women of childbearing age (1 or less per every 100 women aged 15–49) are much lower than US levels. In contrast with Guam, US women aged 15–49 years in the 1980s were two to three times more likely to have an abortion; the ratios of abortions per 100 live births were seven to eight times higher.

The conclusion that rates of abortion are low on Guam is strengthened by comparison with other nations. Several countries were selected for comparison on the basis of (a) having a Catholic majority (Italy), (b) being in the Pacific region and having more reliable data than Guam has (New Zealand, Japan) and (c) being a former Spanish colonial island and having good data (Cuba). The United States allows abortion on request, as does Cuba (during the first 10 weeks) and Italy (the first 12 weeks); in Japan, abortion is de facto available on request and for reasons of genetic defects or on juridical

Table 2 *Abortions and Ratios for Guam and the United States: 1981–1989*

	Number of Abortions		Abortion Ratio per 100: Women 15–49		Abortion Ratio per 100: Live Births	
Year	Guam	US	Guam	US	Guam	US
1981	75	1,300,800	.27	—	2.49	35.84
1982	261	1,304,000	.92	2.16	8.72	35.43
1983	123	1,269,000	.42	—	3.86	34.87
1984	94	1,333,500	.32	2.16	3.06	36.34
1985	157	1,328,600	.52	2.12	4.96	35.33
1986	406	1,328,000[a]	1.30	2.09[a]	12.27	35.35[a]
1987	276	1,328,000[a]	.87	2.09[a]	8.23	34.86[a]
1988	84	—	.26	—	2.37	—
1989	158	—	.47	—	4.43	—

Note. Guam counts from the Research and Planning Office, Guam Memorial Hospital. Abortions were classified as voluntary or therapeutic, with involuntary miscarriages included as therapeutic. Abortion data has only been compiled since late 1980. All 1989 abortions were classified as voluntary. US abortion statistics calculated using data from the *United Nations Demographic Yearbooks, 1982, 1985, 1989.*

[a] Calculations based on provisional data.

grounds such as rape and incest. In New Zealand, although abortion is not available on request, it is available for reasons of genetic defects and on juridical grounds such as rape or incest (Henshaw & Morrow, 1990). These comparisons are displayed graphically in Figures 1, 2, and 3.

Figure 1 indicates that while Guam's crude abortion rate is low (1 to 3 abortions per 1,000 people), it fluctuates considerably when compared with the other countries' rates. It approached New Zealand's rate only in 1982 and 1986–1987 and it was nearly the same as Italy's in 1986. Cuba experienced a steady increase from 11.6 abortions per 1,000 people in 1981 to a high of 15.8 in 1986, and then the rate stabilized at about 15.0 in 1987–1988. In the Pacific region, New Zealand experienced a slight increase beginning in 1985 and continuing through 1988. Italy and Japan experienced downward trends and the United States remained stable across the decade.

The erratic patterns of Guam's rates and ratios depicted in Table 2 and Figure 1 underscore the lack of confidence in these data, as stated above, by the Department of Public Health and Social Services. The number of abortions varies from year to year, with the highest numbers recorded for 1982, 1986, and 1987. Counts in these years were two to three times higher than the counts for the years immediately preceding or following these years.

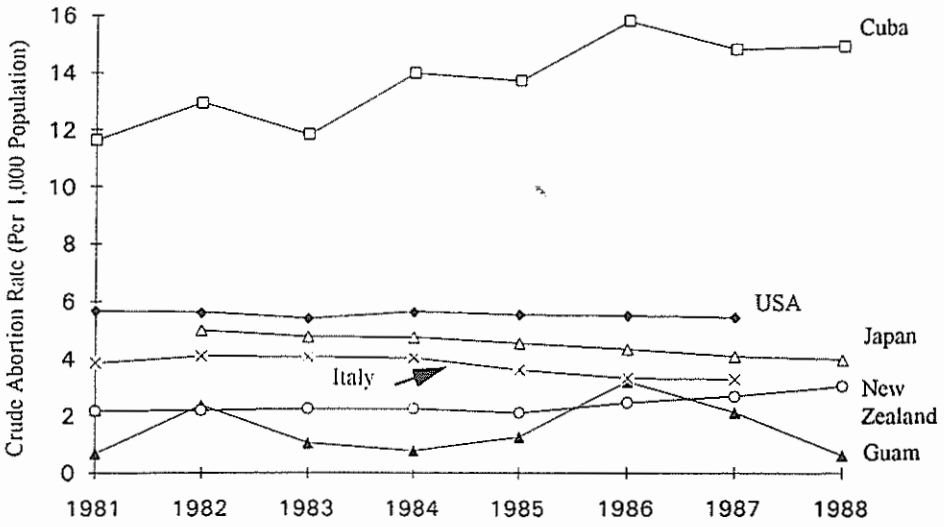

Figure 1. *Crude abortion rates (per 1,000 population) of selected countries 1981 to 1988. Calculations based on data from* UN Demographic Yearbooks, *1982 through 1989. Some data not available for some years.*

Problems in data recording most likely account for these sharp jumps. First, as noted in the Data and Methods section of this paper, adherence to precise definitions that separated miscarriages from therapeutic and voluntary abortions was not maintained, and the definitions were occasionally changed. Second, as stated above, many officials have doubts about the completeness of reporting coverage. Because Guam is a small community where anonymity is difficult to attain, it is likely that women obtain abortions somewhere else; the abortions that are performed on the island may vary year to year according to fluctuations in the affordability of or the opportunity to travel and the particular traits of those seeking to terminate a pregnancy.

In assessing the data limitations, it is noteworthy that Guam's abortion measures are similar to estimates for Ireland in the same years (Table 3), except for the sharp increases in 1982, 1986, and 1987. Estimates for the Ireland data were calculated from "those women who obtained an abortion in England and gave an Irish address" (Henshaw & Morrow, 1990, p. 79). We note that Henshaw and Morrow assume Ireland's estimates are incomplete by at least 20 percent "because they exclude an unknown number of Irish residents who gave English addresses" (1990, p. 54).

Table 3 *Abortion Indicators for Guam and Ireland: 1981–1987*

	Abortion Rate per 1,000 Population		Abortion Ratio per 100:			
			Women 15–49		Live Births	
Year	Guam	Ireland	Guam	Ireland	Guam	Ireland
1981	.68	1.0	.27	.52	2.49	5.0
1982	2.36	1.1	.92	.52	8.72	5.3
1983	1.06	1.0	.42	.50	3.86	5.6
1984	.78	1.1	.32	.53	3.06	6.2
1985	1.27	1.1	.52	.52	4.96	6.3
1986	3.20	1.1	1.30	.52	12.27	6.5
1987	2.12	1.0	.87	.48	8.23	6.2

Note. Guam counts from the Research and Planning Office, Guam Memorial Hospital. Abortions were classified as voluntary or therapeutic, with involuntary miscarriages included as therapeutic. Abortion data has only been compiled since late 1980. All 1989 abortions were classified as voluntary. Ireland abortion statistics from Henshaw and Morrow, 1990, p. 43.

The estimates of voluntarily induced abortions on Guam (excluding miscarriages) may be low, more so for some years than others. Nonetheless, the undercount for Guam may not be any greater than that estimated for Ireland, and it may be less because the procedure is legal on Guam but not in Ireland (except to save the mother's life).

Comparing Guam's data with those for Cuba, the United States, Italy, and Japan, the ratios of abortions and (or) miscarriages to live births are again low. Cuba documented 80 to 85 abortions for every 100 live births in the 1981–1988 period (see Figure 2). Italy, the United States, and Japan reported very stable ratios of about 40 abortions per 100 live births across the decade. Given their particular laws, the actual rates for Italy and Japan may be higher because abortions may be underreported (Henshaw & Morrow, 1990). New Zealand's low ratio of about 13–15 abortions per 100 live births also appears stable across the decade. In contrast, Guam's ratio, although fluctuating, revealed no upward or downward trend.

Turning to Figure 3, the ratio of abortions per 100 women aged 15–49 tends to be stable over time in countries where abortion is legal. Figure 3 shows that the US ratio was steady at about 2 abortions for every 100 women of childbearing age. Japan's rate was slightly lower than the US rate and shows a gradual decline across the decade. Cuba again displayed a clearly

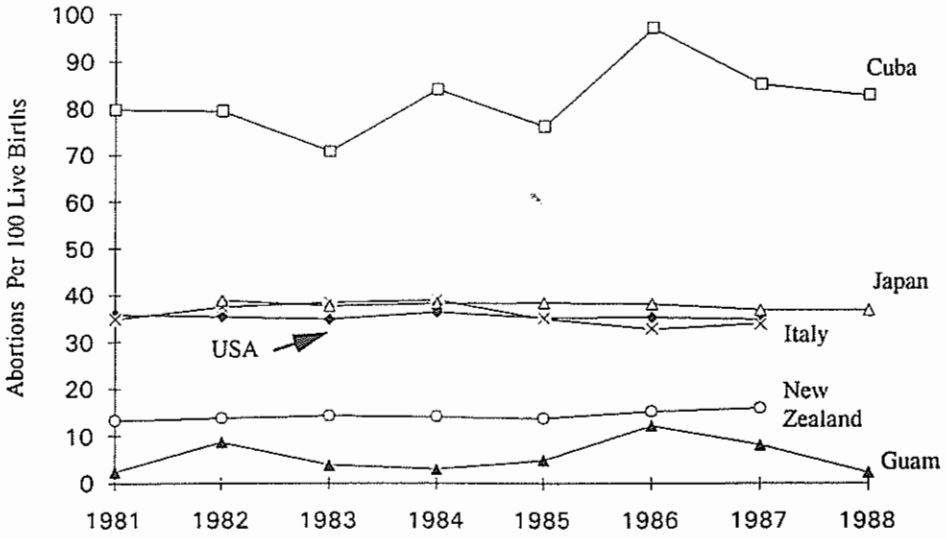

Figure 2. *Ratios of abortions per 100 live births for selected countries 1981 to 1988. Calculations based on data from* UN Demographic Yearbooks, *1982 through 1989. Some country data not available for some years.*

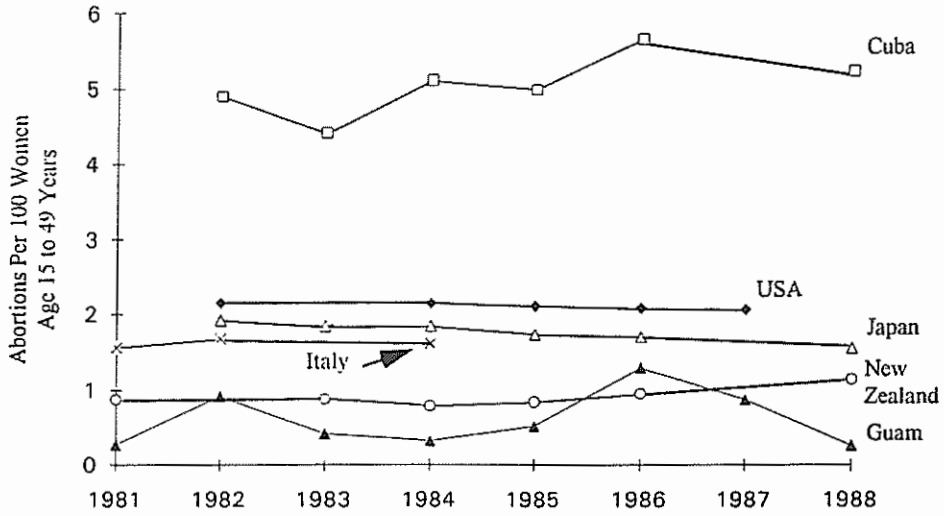

Figure 3. *Ratios of abortions per 100 women age 15–49 years for selected countries 1981 to 1988. Calculations based on data from* UN Demographic Yearbooks, *1982 through 1989. Some country data not available for some years.*

upward trend. Guam's ratio of abortions to women of childbearing age jumped above and below that of the more restrictive New Zealand, where the ratio was stable through 1985 but increased slightly at the end of the decade. For Guam, changes in definitions and increased social concern very likely affected its data. Because statistical data are not available prior to 1981, it is not known whether Guam's abortion rate has always been in this range or whether it was once lower and then fluctuated upward to stabilize at this relatively low level.

Perhaps the most important information to be gleaned from these data is that, except for 1986, Guam's abortion rates and ratios are comparable with Ireland's and lower than those of all the other countries examined. The contrast of abortion statistics on Guam with New Zealand's and Ireland's statistics is noteworthy because these two nations tightly restrict abortion to cases of rape or incest or genetic defects, or to save a woman's life (see Henshaw & Morrow, 1990, pp. 76–82).

Assuming Guam's data reflect the majority of actual medical abortions or miscarriages (or both) that occurred *on the island,* it is best to speculate only that abortions on Guam remained within a constant, low-level range over the decade. There is no evidence of any upward or downward trend.

THE ABORTION ISSUE VERSUS HEALTH POLICY PLANNING

Guam's people practice birth control to plan their families and to limit conception, especially among married couples. The favored birth control method for those seeking family planning services at public health clinics has been the Pill (DPH&SS, 1990). However, other methods are also used, such as condoms, IUD's, and "natural" family planning (i.e., the rhythm method). Consequently, Guam's birth rate and the average number of children per woman have been steadily declining.

The fertility decline began long before the start of government family planning programs. Just as these programs and policies did not change people's behavior—but simply accompanied ongoing demographic trends—we argue that Guam's abortion law, if upheld by the US Supreme Court, will not greatly change people's behavior. Nor will it stop any large number of abortions from occurring; abortion has always been a rare practice, and it was an infrequent choice even when it was legal.

The strongest evidence supporting this assertion is the finding that legal abortion rates and ratios on Guam have been low compared with international levels over the decade of the 1980s. Moreover, the rates and ratios have remained low in spite of the legality of abortion and a growing potential demand-pressure arising from rapidly increasing rates of teen pregnancy and illegitimacy since the 1970s.

Values for childbearing remain relatively more positive on Guam than in Western societies. It is unlikely that induced abortion ever played a major role as a birth control option. It is more likely that couples start families (whether married or not), give birth to the number of children they have decided upon, and then use birth control methods to prevent further pregnancies and to eliminate any need to consider abortion.

It is theoretically reasonable to suggest that Catholicism plays the major role as a determinant of the patterns found in Guam's abortion rates and ratios. Research in Hawaii has documented that the less frequent use of birth control by Catholic women was a contributing factor to their higher number of births (Leon & Steinhoff, 1975). Furthermore, these Catholic women were more likely than others to choose to proceed with their pregnancies than to terminate by abortion (Steinhoff & Diamond, 1977).

This is not to say that induced abortion will cease to occur if it is severely restricted on Guam. It may shift to unknown pre-1973 levels or it may become comparable with estimates for Ireland and New Zealand. Tra-

ditional methods to promote menstruation and induce abortion were practiced on Guam up to the mid-1980s, prior to and concurrent with the availability of legal abortion. The apparent underreporting of or erratic care given to (legal) abortion statistics reflects the social sensitivity about abortion as a taboo topic among Guamanians. Data do not exist for estimating pre-1973 abortion levels, and the quality of the data since 1981 prevents analyses to determine trends and differences in rates of miscarriages, induced abortions, and therapeutic abortions with no preceding complications (which could include abortions induced by traditional medicines). All that is known is that the traditional practice remains a potential option.

The 1990 Guam abortion law, if upheld, could reduce but may not eliminate abortion on Guam, and there would still be no accurate statistical records to assess women's health needs. Guam's abortion issue is a community values clash, not a policy discourse on how best to meet women's health needs.

In view of the political debate between the two active groups on Guam, People For Choice and the Guamanians United For Life, it is unlikely that the community will be able to address more generic reproductive health issues among women. Reversing the current abortion policy to restrict abortions could have widespread implications for women's health on Guam. Jacobson (1991) asserts that on a global scale illegal abortion results in relatively higher maternal mortality and that criminal laws may never eliminate abortion. Jacobson states: "Only by increasing access to family planning information and supplies, offering couples a wider and safer array of contraceptives, and placing abortion within an improved and comprehensive public health system can the number of abortions be reduced" (1991, p. 59).

To assess accurately what is actually happening on Guam regarding legally obtained voluntary abortions at the clinics and hospitals, it is necessary to implement a consistent program to monitor known pregnancies, births, miscarriages, and abortions. The information gathered should include the health statuses and social characteristics of women. It would then be possible to carry out statistical research analyses that would yield detailed insights for making informed policy decisions. Given the social sensitivity and secretive nature of abortion on Guam, it is unlikely that reporting will become more accurate unless it is protected with confidentiality and regarded as an essential data source for health policy planning.

The need for informed policy planning based on actual demographic patterns of childbirth and family planning is pressing. As these data reveal, the Guam law was not needed as a policy action to stop large numbers of abortions. To the extent that some abortions may very likely continue to be sought regardless of the law, a forgotten need is the improvement of Guam's health data resources for studying and addressing women's health issues.

Acknowledgments

We want to mention the interest and help of staff at Guam Memorial Hospital's Research and Planning Office. Their openness in discussing the data is greatly appreciated.

Note

1. The social mixing of ideologies took a unique form in the leadership of the polemic social groups that publicly confronted each other when Guam's law was passed. The senator who advocated and sponsored the bill is the mother of the indigenous woman lawyer who argued the court case against it.

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Review Essay: Wife Beating in Micronesia

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This review essay addresses wife beating in Micronesia as discussed by Carucci, Nero, Lewis, and Counts in a special issue of *Pacific Studies,* July 1990, on domestic violence. The incidence, dynamics, and explanations of wife beating in three societies—Palau, The Marshall Islands, and Tungaru—are compared cross-culturally with wife abuse as observed and explained in Western literature across several intersecting dimensions: violence and sex-role stereotypes, women's magic and "battered" husbands, colonial influences on violence in Palau, violence and class relations, violence and traditional family relations, and violence and social structure. Contextual analysis is proposed as a more appropriate explanation than psychological and medical frameworks for the distinctive and common features of wife beating cross-culturally. Recommendations for further research include fieldwork in which violence is the primary topic and victims are the key informants. Such research would compensate in part for the lag in worldwide analysis of this problem.

". . . It's society. . . . You say you're battered and 'Oh, my God, I'm gonna catch that disease! Stay *away* from me.' They have you stereotyped" (Hoff, 1990, p. 111). This statement during fieldwork with battered women and their families in a metropolitan setting in the United States revived my memory of all the "invisible" battered women I had worked with in a psychiatric ward years earlier. Of course the women were not really invisible, but they and the entire treatment team knew that bat-

ISLA: A Journal of Micronesian Studies, 1:2. Dry Season, 1992, 199–221

tering was a taboo topic. Accordingly, it was either ignored or reconstructed by mental health professionals into psychopathologies ascribed to the women.

Similarly in anthropology, as Dorothy Ayers Counts (1990, p. 247) so aptly notes, the topic of domestic violence has been either ignored or embedded in some other subject—essentially, rendered invisible. The papers by Nero, Carucci, Lewis, and Counts are notable exceptions to this pattern in anthropological discourse. These and other papers in *Pacific Studies,* 13(3), July 1990, are a most welcome addition to the growing body of interdisciplinary literature on domestic violence. Somewhat in tandem, human service professionals and social scientists are only recently lending their practice and analytic skills to the topic of abuse. However, the entire victimology field arose not so much out of scientific interest as from grass roots groups (especially women) concerned with women's equality and the professional neglect of victims (Hoff, 1991a; Martin, 1976; Pizzey, 1974; Schechter, 1982).

Because most published research on this poignant topic has focused on North American and western European settings, the contributions regarding Pacific societies in this volume are particularly noteworthy for their policy and practice implications. The general lack of cross-cultural research on wife beating combined with the seductive power of Western cultural hegemony present a hazard to the victimology field as a whole. Cultural groups with a limited research base of their own on the topic might be disadvantaged by the uncritical adoption of Western practices such as anonymous refuges[1] for victimized women and children.

This hazard was illustrated during the UN-sponsored FORUM '85 commemorating the Decade of Women and attended by 17,000 women from throughout the world. For example, during workshop discussions of wife beating, the earlier Western ascriptions of the victim's psychopathology as the underlying problem was revealed in some African women's requests for assistance in developing "counseling" programs for the wives (Hoff, 1985). The context of these requests suggested the women's acceptance of the common assumption that the woman's psyche is the source of the problem (Hilberman [Carmen], 1980). Also, Western women, eager to help, needed reminders that the shelter model does not necessarily fit in societies where extended kin networks are still valued (Hoff, 1985). Although such shelters are necessary and lifesaving for Western victimized women, once ethnocentric blinders are removed there is much that Western human service professionals can learn from the successful practices of societies such as the Papua

New Guinea Wape and Nagovisi, described by Mitchell and Nash in this special issue of *Pacific Studies,* and the Bang Chaners of Central Thailand, described by Levinson (1989) using Human Relations Area Files (HRAF).

For example, Counts (1990, pp. 226–227) notes that the Wape prefer gentleness, nonaggressiveness, and conciliation to confrontation in personal interactions; gender differences are not emphasized; women form bonds with other women; and alcohol is not available. Similarly, according to Counts, the matrilineal and uxorilocal Nagovisi "do not condone physical violence between spouses, and other forms of violence such as rape and corporal punishment of children are rare" (p. 227). In contrast, 25 percent of American college women experience an acquaintance rape or attempted rape (Warshaw, 1988), and most American adults believe in the necessity of corporal punishment despite reams of research to the contrary (Gil, 1987). Bang Chaner society, in which wife beating is infrequent or nonexistent,[2] is characterized by three psychosocial patterns: (a) a social goal of avoiding disputes, along with a range of nonviolent techniques to deal with aggressive feelings; (b) the belief that all people are entitled to respect regardless of role, status, or power; and (c) the virtual absence of the division of labor by sex in the household (Hoff, 1991a, p. 21; Levinson, 1989, p. 104).

This review essay addresses key themes (especially conclusions) in the four papers (Nero, Carucci, Lewis, Counts) concerning Micronesian societies which suggest cross-cultural patterns and differences with international implications. One of my major arguments is that abused wives worldwide have more in common than might be readily apparent (or conceded by Nero, Carucci, and Lewis) especially when considered in a feminist[3] framework. Central to my analysis is consideration of *context.* While this notion is familiar to anthropologists, it is often sacrificed on the altar of positivism, which increasingly dominates most scientific enterprises even as some are recognizing the contribution of ethnographic accounts to health policy debates. My framework is eclectic, though it most closely accords with critical theory and socialist-feminist analysis (Dobash & Dobash, 1979; Gergen, 1982; Segal, 1987). Critical theorists (e.g., Poster, 1978), including some feminists (e.g., Barrett & McIntosh, 1982; Oakley, 1981a; Yllo & Bograd, 1988), make no claims or pretense about value-free research. Rather, they acknowledge from the outset that research *is* intervention, and that the very methods and explanatory framework chosen—far from being objective and value-free—themselves reflect the ideology of the researcher (Harding & Hintikka, 1983; Hoff, 1988; Oakley, 1981a; Reinharz, 1979, 1992). Accordingly, values are made explicit from the outset, so that they can be

appropriately distinguished from and analyzed in relation to the data at hand (Hoff, 1990; Roberts, 1981).

Thus, the fact that both anthropologists and human service workers have ignored wife battering until recently itself reveals these professionals as products of their own cultural value system, which has treated wife beating as a "private" matter between the spouses (Hoff, 1991a). As Counts writes: "Clearly we anthropologists are not ahead of our time" (p. 248). On the other hand, while acknowledging such "selective inattention" (Dexter, 1958, p. 176) and "not-so-benign neglect" (Kurz & Stark, 1988, p. 249), even with the best of intentions by researchers and clinicians, the problem of "access" to the sensitive topic of violence between intimates, plus successful intervention, remains a thorny and challenging one (Cox, 1991; Hoff, in press).

KEY THEMES IN CARUCCI, NERO, AND LEWIS

The special issue on Domestic Violence in Oceania (*Pacific Studies,* July 1990) addresses a broad range of domestic violence: abuse of children, wives, and elders. In this essay the focus is on violence against women, the focal point of the three authors whose papers are reviewed: the Palauans[4] (Karen L. Nero, pp. 63–92); the Marshallese[5] (Laurence Marshall Carucci, pp. 93–113); and the Tungaru (David E. Lewis, pp. 115–126). The review includes discussion of the conclusion paper (pp. 225–254) by Dorothy Ayers Counts, Guest Editor of the Volume. Nero and Carucci address "wife beating" in terms similar to the common understanding of the term "wife battering"[6] in Western literature (i.e., pushing, shoving, slapping, or pounding with fists, often accompanied by the use of alcohol). Lewis discusses nosebiting as a form of sexual mutilation falling in the same category of violence as clitoridectomy and infibulation, the latter two being rites of passage still practiced despite World Health Organization (WHO) definitions of the customs as human rights violations[7] (Hosken, 1981; Ngugi, 1965; Saadawi, 1980/1982).

These three societies vary in their precolonial tradition regarding women, with the greatest similarity being between the Palauans and Marshallese. The patrilineal Tungaru have a strong tradition of controlling women's sexuality (Lewis, p. 119) and appear to have valued women most for their role in economic and political exchanges during warfare. In contrast, among the Palauans, the kin system is predominantly matrilineal, although clan relationships are traced through mother's and father's sides (Nero, p.

66). In traditional Palau, women were highly valued in themselves and older women have a strong voice, though males then and now dominate in public life (pp. 64–67). Similarly, the Marshallese tradition includes strong egalitarian ideals in which age and gender status are not very hierarchical and residence is ambilocal; although chieftainship has been inherited through males, clan identity is inherited through females. However, as in Palau, males dominate politically, and women—especially older women—are thought to dominate by magic (Carucci, p. 96). Marshallese believe that women's violence is rooted in thought, not action, and in the reproductive force that women control (pp. 108, 110). Although Marshallese men fear magical attack by women, the ethnographer has no evidence that such fear has an inhibitory role vis-à-vis their own violence (p. 112, n. 6).

PARALLELS WITH PATTERNS OF WESTERN VIOLENCE

Nero (p. 87) states that the major explanations of violence are easily refutable in reference to Palauans, and Carucci (p. 109) concludes that it would be "simplistic and naive" to draw parallels with family violence in the West. Starting with Carucci, I will argue that, in spite of cultural differences, there are more parallels with the Western experience of domestic violence than either he or Nero would concede.

Carucci states that "physically violent activities, while stereotypically male, typify role prototypes, not persons" (p. 109); that Marshallese "men and women use these role prototypes to legitimately engage in different types of violence within the domestic setting" (pp. 109–110); and that "the most dangerous violence, while not common, takes place between wives and husbands and between spouses and in-laws" (p. 110).

Violence and Sex-Role Stereotypes

Carucci's reluctance to draw parallels with family violence in the West is surprising when one examines the evidence of violence in the United States. First, it is not clear what Carucci is claiming when he states that "physically violent activities . . . typify role prototypes, not persons" (p. 109). Is this a new version of language distortion (or academic jargon) used to diffuse accountability for violence by the *person* who engages in it? It is individual *persons,* not "prototypes," who engage in violent activities.

Counts (pp. 227–228) notes the lack of cross-cultural consensus regarding "legitimate" or "illegitimate" violence and the place of social mores of particular societies—*not* outsiders' values—in defining what is illegitimate. But despite such arguments among deviance theorists (e.g., Becker, 1963; Gove, 1975; Lemert, 1951), another tradition within social theory argues that violence is social action enacted by moral beings normally held accountable for their behavior (Giddens, 1979, 1983; Hoff, 1990; Winch, 1958). When alcohol and psychiatric diagnoses are ascribed central roles in explaining violence, a behavioral/medical framework effectively transforms social action into a "private" event (Stark, Flitcraft, & Frazier, 1979).

Clearly, there are cross-cultural differences in values and the definitions of violence springing from them.[8] But an international women's rights perspective suggests a cautionary note and the dangers of cultural relativism. The experiences of abused women worldwide, as revealed in oral narratives at FORUM '85 (the UN-sponsored Decade for Women conference in Nairobi) support Counts' conclusion that "while we must not apply our own values and pass judgement on behavior that is not seen as deviant or abusive by the majority of the people of a community, many Pacific people do perceive domestic violence to be a problem" (p. 248).

Although Carucci's argument is not entirely clear to me, it does lend itself to an examination of sex-role stereotypes and violence from US-based research. In fact, in the United States, just as among Marshall Islanders, most violent behavior is carried out by young men against women, children, and other men (Russell, 1990; Wolfgang, 1986, pp. 10–11). However, even though the majority of violent assailants in the United States are heterosexual men, American women also engage in violence (Straus, Gelles, & Steinmetz, 1980). But this fact does not cancel out the stereotypically *female* status of passivity and victimhood in most cases of violence. As the Straus, Gelles, & Steinmetz national random survey of American families revealed, when merely *counting* violent acts (from pushing and slaps to lethal force), women's violence approximately equalled that of men. However, when these data were examined for *context*, it was found that women's violence typically *followed* the abuse meted out by their male partners and, in the vast majority of instances, women's violence did *not* result in physical injury. This pattern is remarkably similar to that noted by Counts in Papua New Guinea, where both wives and husbands cite self-defense as grounds for the wife's violence (p. 230). In the United States, spousal abuse is now ranked as the *most* common cause of female injury—more common than accidents, stranger rape, and muggings combined (AMA, 1992, p. 3185; Foreman, 1992, p. 1).

Although largely self-defensive in function, when women use the stereotypical male behavior of responding to violence with violence, I propose that one reason they do so is because violence in the United States is culturally approved in general. Also, the increased freedoms of women in Western society at some level may serve as a facade. That is, the majority of American women, apparently satisfied with freedoms such as equal access to education, are either uninvolved with or are at the fringes of social movements toward economic and political equality for women (Sidel, 1990). Instead of action around the social and economic inequality of women (Faludi, 1991; Waring, 1990), many American women use their new freedoms to emulate male aggression. One consequence is inattention to the traditionally cooperative approach to conflict resolution (Ruddick, 1989), approaches akin to those used by the Wape, Dani, and Nagovisi. As Counts states, in these societies "family disputes are settled nonviolently and intimate interpersonal relations are not marked by aggression or the forcible control of the weak by the more powerful" (p. 249). American women's dominant behavior patterns may change, however, in response to the current threat to abortion rights, and women's increasing encounter with the "glass ceiling" in corporate America—to name two of many backlashes against feminism (Faludi, 1991).

Women's Magic and "Battered" Husbands

Carucci's discussion of women's violence as rooted in thought and in the power of their magic suggests another cross-cultural parallel. In the United States, it is not uncommon when discussing wife battering in educational and other forums for participants to suggest that women's power lies in their verbal abuse of male partners, epitomized in the "nagging wife" allegation. One researcher (Steinmetz, 1977) has gone so far as to suggest that perhaps the "real" victims are "battered husbands,"[9] a proposition that contradicts most people's everyday experience and statistical evidence of domestic assault victims treated in emergency medical facilities (AMA, 1992; McLeer & Anwar, 1989; Stacey & Shupe, 1983).

The premise of this argument is that "battered" husbands' egos are so wounded from the experience of being struck by their wives that they are too ashamed to report it. It strains credulity to conceive of men experiencing the extent and degree of life-threatening injury commonly observed among wives, but refraining from medical treatment of similar injuries

out of purported "shame." It also belittles the meaning of "shame" felt by battered women who, like other women, are influenced by centuries of socialization to look to husbands for protection, not injury. Finally, the "battered husband" argument overlooks the fact that physical abuse of wives is almost invariably accompanied by psychological abuse, with serious implications for psychopathology as a result (Rieker & Carmen, 1986; Walker, 1989).

While acknowledging, then, that women can be violent, it is important to note that most nonlethal violence by women is noninjurious (Straus, Gelles, & Steinmetz, 1980); there is no more evidence in the United States for women's "battering" of husbands than there is in the Marshall Islands of women "beating their husbands to death" through the power of their magic (Carucci, p. 110). Homicide, however, is another matter: Among murders in the United States (more than in any other country in the world), 50 percent occur between intimates; of these, two thirds are husbands killing their wives, and one third are wives killing their husbands (Browne, 1987).

These data contrast with an American myth that reminds one of Marshallese men's fears of women killing men with their magic, a myth promulgated in popular culture through movies such as *Fatal Attraction.* In this myth, the American single career woman with whom the man has an affair is cast as the evil one who disrupts domestic bliss and ultimately pays with her life. Conversely, the film depicts the unfaithful husband as the tortured victim, while the angry, jealous wife finally kills the "other woman." The reality—according to crime statistics and everyday accounts of murders—is that in most instances of husbands murdering their wives, the dominant motive is often *his* jealousy; while wives silently tolerate infidelity, and when they kill their husbands usually do so out of despair and self-defense after years of physical and psychological abuse (Browne, 1987). Of course, this modern myth is in accord with a long tradition of the "dangerous" woman in the annals of human behavior (Douglas, 1966).

Colonial Influences on Violence in Palau

Carucci's line of argument concerning the Marshallese is consonant with Nero's use of Palauan data to refute explanations of violence based on the study of Western societies, primarily the United States and Britain. Considering colonial history in the Republic of Palau, it is noteworthy that the recent concern with violence is focused primarily among young elite hus-

bands who bash their wives after episodes of drinking. There were no indigenous alcoholic beverages in Palau; the Japanese administration introduced alcohol when it took over the islands in 1914, then prohibited its use, except for *elites.* Not unlike the legendary "drunken Indian" on American reservations, Palauans purportedly learned Japanese drunken comportment, as well as the custom of corporal punishment in the educational system introduced by the Japanese.

The emergence of a capitalist economy and modernist values builds on the colonial and missionary influences of promoting monogamy, nuclear family structure with male head of household, and the proscription of divorce. These processes coincide with the breakdown of traditional values and practices such as serial marriage and extended family support, which had been available to diffuse pressure and conflict among young Palauan spouses. Meanwhile, though lacking traditional supports, educated young couples nevertheless retain the obligation to contribute money to their families. In another contradiction, these elite young couples try to act on at least some egalitarian values absorbed from Western culture, while traditional male privilege in the public sector prevails—a pattern familiar in the United States as well.

Violence and Class Relations

One of the most fascinating features of Nero's account is that wife abuse seems most prevalent among "young elite couples." Initially, this appears to contrast sharply with data from most US-based research. In the United States there is general acknowledgment that wife battering cuts across class, race, and ethnic boundaries, although, in contrast to Palauan society, the most *visible* incidence is among the poor and ethnic minority groups. These seemingly opposite patterns raise some interesting questions, the answers to which one can only speculate about from data elicited from either society.

Though Nero does not specify, one wonders whether the greater prevalence of Palauan wife beating among young elites is a statistical artifact, or whether nonelite Palauan couples have low incidence rates because of less Western-style stress on couples combined with greater availability of traditional supports and controls on deviant behavior. Another question about Palauan incidence arises from the source of Nero's data, that is, not the couples themselves—regardless of class—but public health and social service workers (p. 81).[10]

The most probable explanation for US incidence patterns is embedded in the class and race relations that often characterize the research process itself (Roberts, 1981). Traditionally, the privileged—usually male and white—are not the "subjects" (in the quite literal sense of the term) of research who are observed or expected to answer questions; rather, they *do* the research. This superordinate/subordinate pattern in the research process (Oakley, 1981a, pp. 39–40) would seem to intersect with the fact that "elite" abused women in the United States presumably would have comparatively more material means by which to shield their plight from public view than would Palauan women, even of the elite class. Though Nero does not cite divorce laws in Palau, an additional factor that might account for the lesser visibility of "elite" American women in statistics on wife abuse is the relative ease of obtaining divorce. Rubenstein (1982), for example, reports that battering incidence is higher among American couples when the wife earns more than her husband, suggesting jealousy and patriarchal values supporting male dominance in the household, as symbolized by relative earning power. Rubenstein notes that many of these financially secure women choose divorce to resolve the problem of abusive marriages.

Though an earnings differential is not cited as such, Nero cites the "sexual jealousy" of abusive husbands arising from young educated wives' involvement in the "public worlds of school and employment" (p. 77). These data suggest that wife-abuse patterns in both Palau and the United States are linked *contextually* (not causally) to traditional patriarchal values about women's primary place in the domestic domain in spite of modern women's increasing presence in public arenas, especially the paid employment sector.

Violence and Traditional Family Relations

There are similarities and differences between the US and Palauan traditions regarding wife beating. Abused Palauan and American women—of whatever class—seem to have in common their sense of "shame" about the abuse. For example, an upper middle-class woman in Hoff's (1990, pp. 119–126) study was independently employed, earned more than her husband, and owned a second home. Nevertheless, she stayed in the abusive relationship for years, partly because she was too ashamed to acknowledge her plight to her family, and partly because she had completely absorbed the traditional value of her primary role as wife and mother. Nero writes that in Palau "wife-battering is shameful. . . . It is a matter for clan, not public, discussion

and settlement" (p. 81). In the United States, an 1874 court ruling stated: "If no permanent injury has been inflicted, nor malice nor dangerous violence shown by the husband, it is better to draw the curtain, shut out the public gaze, and leave the parties to forget and forgive" (Davidson, 1977, p. 2).

It is not difficult to conclude from these two data sets that abused Palauan women had recourse to their clan, whereas nineteenth century American women abused by their husbands were cut off even from their extended families, inasmuch as the ideal of the nuclear family and romantic wedded bliss had already taken hold. Also, Palauan language ("discussion, settlement") suggests a process of active conflict resolution among kin, whereas US court language suggests denial, concealment. Finally, although Palauan tradition specifies "clan" not "public" discussion, certainly clan relations in traditional societies (where public/domestic boundaries are less demarcated—see Gailey, 1988, p. 45) are more "public" than relations in the nuclear family structure. Thus, in American society, traditionally (and often today), an abused woman typically felt isolated even from her family; in Palauan society, an abused woman can still turn to her family for support, though this traditional pattern is considerably weakened as a result of Western influence; while in both societies, the topic has yet to be accepted as a national problem for widespread *public* concern.

The modern Palauan wife, therefore, seems strapped with a multifaceted burden: the loss of traditional extended family supports she could have had in the previously rare event of spousal abuse; the illusory Western-style freedom garnered from exposure to Western culture; the influence of alcohol and its abuse, which both assailants and victims interpret (and excuse) within the framework of a Western medical model; and unawareness that for all the apparent "freedoms" and rights of Westernized women, Western women themselves suffer from a legacy of patriarchal control, privilege, and values (Dobash & Dobash, 1979; Faludi, 1991).

Violence and the Social Structure

Unfortunately, the Western value of romantic love does not seem to bode well for the Palauan bride facing domestic conflict. As noted above in the section on sex-role stereotyping, Western women's "freedom" to engage in typically male behaviors (including, currently, combat duty) often obscures the fact that they may be less free or equal than they appear. If traveling Micronesians observe closely, they will notice that US women are far from

equal in the public arena.[11] Furthermore, American women are remarkably similar to Palauan women when it comes to the double standard of sexual freedom and its responsibilities, child care burdens, and public victim-blaming when battered by their husbands (Faludi, 1991; Hoff, 1990; Sidel, 1986).

EXPLANATIONS OF DOMESTIC VIOLENCE

In attempting to explain domestic violence among elite Palauan wives, Nero (p. 87) argues that three levels of explanation in the West can easily be refuted: (a) the feminist claim that domestic violence "is due to women's general and marital subservience in a patriarchal society" (assuming the devolution of Palauan society toward patriarchy under Western influence); (b) the economic power differential between men and women; (c) the social isolation of women that permits domestic violence. This argument seems to contradict Nero's later statements (p. 88) about the relation of violence to Palauan women's power and men's attempts to establish power over their wives through physical force. The apparent contradiction is clarified somewhat when contextual and causal analyses are carefully distinguished. Counts suggests the centrality of context in her interpretation of Nero:

> She argues that increased stress resulting from rapid change, the culturally perceived disinhibitory function of alcohol, plus sexual jealousy and the sexual double standard combine to create a *matrix* [emphasis added] in which wife-battering increases as men attempt to establish power over their wives through physical domination. (p. 244)

But Nero's language ("domestic violence is due to," p. 87) suggests a framework of causal analysis consistent with mainstream analysis of domestic violence, a perspective that is highly controversial in the field as a whole (Bograd, 1984; Breines & Gordon, 1983; Hoff, 1990; Schechter, 1982; Yllo & Bograd, 1988).

From a positivist perspective, I have little counterargument to each of Nero's points, primarily because there is no evidence to propose any *single cause* of wife abuse. But that is precisely the point: Causal decontextualized analysis is generally considered inadequate to explain domestic violence (Dobash & Dobash, 1979; Hoff, 1990). But within a socialist feminist framework, I dispute Nero's triple refutation on several counts. First, it seems to place "feminist" explanations of violence inappropriately within a causal framework. Sociologists Dobash and Dobash (1979) and nurse-anthropologist

Hoff (1990), for example, explicitly eschew a cause-and-effect relationship between domestic violence and patriarchy.

Nero also implies in her refutation that Western societies are not patriarchal. While I do not propose that the patriarchy today in the United States is an explicit replica of, say, Roman or colonial times, the legacy of patriarchal values, intertwined with class and racial issues, is abundantly evident (e.g., Gailey, 1988; Oakley, 1981b; Okin, 1979).[12] How else does one explain the continuing dominance of white males in the US economic, political, religious, and other institutions of power (Daly, 1978; Waring, 1990)? And how does one explain that women as a group still earn only $.70 to every $1.00 earned by men in spite of equal pay laws passed decades ago (Sidel, 1986, 1990)? Or the international trade of women (mostly poor, young women of color in developing countries) for the sexual pleasure and profit of primarily white Western males (Barry, 1979)? Consider also, for example, the question of Dolores Curran (1991, p. 4) who asks: "Why the Church silence [sic] on physical, sexual and verbal abuse of women by men?" In the following vignette Curran suggests an answer to this question; a linkage between abused "elite" Palauan women and privileged American women (i.e., the less visible among those abused); and a glimpse of how patriarchal values abide in contemporary middle-class America:

> I have a friend, a priest, who is director of family life in his diocese. He held workshops on family spirituality, communication, marriage enrichment and practically every aspect of family imaginable. He had modest success in drawing parents. Then, he initiated a diocesan-wide listening process, asking parents in a confidential survey, what they would name as their greatest needs. "I was stunned," he said. "The two that landed on the top were alcoholism and abuse. I didn't suspect we had much of either in our middle-class diocese. After all, we don't see either at Sunday Mass. But the rest of the week . . . [sic]. He changed his workshops and emphasis. He began by educating the priests in his diocese to the extent of the problem, encouraging them to preach on the sinfulness of alcoholism, abuse and incest and offering parish-based support groups for families with these realities. He developed and offered workshops for women on self-esteem, for couples on non-physical ways of dealing with conflict, and for families of alcoholics. Attendance exploded but he suffered. His priests reported that men were telling them to lay off, that these were not religious topics, and if they continued, they would withdraw financial support. (p. 4)

Nero states that US arguments regarding a male-female power differential also fail to explain domestic violence in Palau. This claim similarly

assumes a cause-and-effect relationship, rather than a contextual analysis, which helps to explain why even women of means remain in an abusive relationship. For example, because "wife battering is shameful in Palau" (p. 81), it seems reasonable to assume that an abused Palauan woman would feel shame inasmuch as the disempowerment implied by abuse contradicts the tradition of personal and corporate power Palauan women enjoy in this predominantly matrilineal society. Further, I propose that an abused Palauan woman wants a father for her children (as do most women); she respects the traditional obligation of elite young people to contribute money to the clan (p. 76);[13] most likely she hopes that her husband will change as he promises;[14] and she has absorbed sex-role conditioning of women to assume responsibility to keep a marriage intact (Dobash & Dobash, 1979; Gailey, 1992; Hoff, 1990). Nero also seems to ignore the fact that employment of individual young elite women in the public sector (similar to wage labor patterns in the United States) does not translate necessarily into the social and economic equality of women as a group, despite the Palauan tradition of women's high status: "... today males predominate in elected and appointed offices" (p. 74), just as they do in most Western societies.

Finally, Nero allows that the "*physical* [emphasis in original] isolation of the nuclear household in the Palauan case does support the possibility of domestic violence" (p. 87). But she seems to miss from the American situation that the isolation of battered women most often *follows,* rather than causes, the abuse (Hoff, 1990; Martin, 1976).

Alcohol: Explanation or Excuse?

Having thus attempted to refute major contextual explanations for domestic violence, Nero proposes a psychological interpretation: namely, that "the most useful approach to explaining domestic violence in Palau seems to relate to the interaction of increased stress on the marriage relationship of today's young and the removal of inhibitions through drinking and physical isolation" (p. 87). This argument obscures the fact that many distressed young men do not beat their wives. Additionally, it overlooks the commonly accepted interpretation of alcohol use *not* as a plausible *explanation* of violence, but rather, as a fashionable and medicalized "excuse" to avoid accountability for one's behavior (Gelles, 1974; Hoff, 1990).

In a similar psychological vein, Nero posits the relevance of the "battering cycle," a concept derived from Walker's (1979) study of American

women. While this concept is useful to describe the repetition of battering once begun, in-depth fieldwork with battered women in one US city suggests that it is not as universal an experience as has been supposed (Hoff, 1990). The concept also casts women's behavior into a simplistic stimulus/response framework (Breines & Gordon, 1983), and it has limited value in explaining how women eventually leave violent relationships (Hoff, 1990).

Nero's refutation of patriarchal values and male-female power differentials as part of the puzzle is not easily sustained within a contextual framework. Her decontextualized analysis sidesteps the critical question of why *women* (in Palau as in the United States) are the most frequent objects of violence when men feel stressed or uninhibited through alcohol use. It also overlooks the social acceptance of violence within a traditional value system that normalizes violence in marriage and defines it as the private business of the couple (Stark, Flitcraft, & Frazier, 1979; Straus, Gelles, & Steinmetz, 1980, pp. 31–50). In short, the *correlation* of alcohol use (or abuse) with wife abuse in Palau, in the Marshall Islands, and in the United States should not be posited as a *cause* of abuse. Nor, for that matter, should patriarchy and sexist values be construed as causes of wife abuse. Rather, in the United States and the Micronesian societies discussed here, the evidence strongly suggests that patriarchal values provide the climate, the *context* in which violence against wives functions to maintain control of women. And during times of social change, when traditional controls of women are threatened and communal constraints on men's behavior are weakened while fundamental values about women endure, it is not surprising that wife abuse is as prevalent as it is.[15]

Young Palauan couples appear caught in the dilemma of trying to maintain a balancing act between obligations to both old and new social orders. This dynamic and its reflection in the incidence of domestic violence parallels the findings of Yllo and Straus (1981), who examined structural and normative factors associated with rates of violence against wives in the United States. These researchers found that rates of wife abuse were lowest in those states in which indicators of women's status (e.g., passage of the Equal Rights Amendment, number of women in the legislature, and economic parity) were either highest or lowest (generally, the Northeast and West Coast regions); but in those states where the traditional status of women was in flux, the rates of wife abuse were highest.

Thus, as among the Palauans, during periods of social change, which often produce role ambiguity, couples typically experience increased stress in the marital relationship. Such change alone, however, is insufficient to

explain increased rates of wife abuse. But in a cultural milieu such as the United States where socially approved violence is widespread (e.g., physical discipline of children, the media depiction of women as acceptable objects of abuse, police brutality, war, capital punishment), it is not surprising that husbands under stress strike out at their wives in increasing numbers. It seems clear then, that across cultures, in spite of increasing worldwide attention to improving the status of women, deeply embedded patriarchal values are not easily shaken: Some men fear the loss of privilege, they resist change, and the ensuing conflict serves as the underlying *context* for the relative ease of using wives as appropriate objects of abuse when husbands feel upset or threatened in their assumed role (Dobash & Dobash, 1979; Hoff, 1990).

SEXUAL MUTILATION AS DOMESTIC VIOLENCE

Lewis (p. 116) cites Dworkin (1974) to argue that the feminist conceptualization of sexual mutilation is inadequate. To quote Dworkin (pp. 184–85): "They [sexual mutilations] define precisely the dimensions of her physical freedom" and enslave a woman. By defining such mutilation as a form of domestic violence, it is not clear how Lewis' argument differs in essence from that of feminists. That is, he links the now extinct custom of nosebiting to attitudes toward marriage, jealousy, and betrayal, which characterize family life in Kiribti (p. 116). What appears to be missing is whether the mutilation through nosebiting has a function of *enhancing* a woman's sexual attractiveness or *reducing* her attractiveness (the nose functioning as a sexual symbol, p. 123, n. 8). The most basic notion here seems to be the use and control of women for the larger male purpose of warfare, land control, and prestige.

Lewis' citation of the Tungaru choosing to control women through violence or the threat of violence resonates remarkably with the Western feminist theme of controlling women through violence or its threat. For example, a woman who is gang raped (violence with clear ritualistic elements)—whether in the West or elsewhere—most surely is traumatized at the moment. But afterwards as well, the "dimensions of her physical freedom" (Dworkin, 1974, p. 184) will be at least partially defined; to protect themselves, rape victims typically and more carefully plan when, where, and with whom they will move about in the future. "Enslavement" by rape or its threat is no less apt a metaphor than for the woman whose capacity for

sexual response is reduced or eliminated through clitoridectomy or infibulation, or nosebiting—in other words, male control of women through violence for their own purposes and pleasure.

Though nosebiting in Tungaru is extinct, other forms of female sexual mutilation thrive elsewhere (Saadawi, 1980/1982). From Ngugi's (1965) description of ritualistic violence against women in Kenya, not unlike other forms of abuse, we can construe that clitoridectomy will continue to function as a means of male control as long as women are denied equality through a socially approved value system that defines women as subordinate and that is manifested in economic, political, and religious institutions. As Counts notes regarding matrilineality among the Tolai of East New Britain in Papua New Guinea, though motherhood was respected, "women were nevertheless second-class citizens" (p. 241). In Ngugi's Kenya, for example, female circumcision is legally proscribed; nevertheless, it is practiced there and in other countries because of continued social inequalities of women (Saadawi, 1980/1982).

OPTIONS FOR ABUSED WOMEN

A hopeful theme, especially in the papers by Nero and Carucci, is that of social support options for abused wives. In spite of the pressures of modernization and the importation of Western nuclear family structures and the medicalization of alcohol abuse, traditional kin support networks appear to be available to abused women in Palau and the Marshall Islands in a way that abused American women generally do not experience. None of the papers cited export of the Western model of the shelter or refuge for abused women, an institution that distinctly reflects the lack of readily accessible kin network support in the West. It is possible that the Western shelter model will also be implemented in Micronesia. On the other hand, we can only hope that refuges for abused women everywhere will eventually be converted to holding centers for the abusers, settings where they can learn ways other than drinking and violence to deal with their stress.

The very existence of refuges for victimized women and their children symbolizes the typically American *reactive* stance to social and health problems: Rather than dealing with the roots of the problem (e.g., the unequal status of women), we apply a tertiary approach after enormous damage has been done. The American shelter system—while necessary and lifesaving as long as legal and community responses remain inadequate—is also an in-

dictment of Western society's repeated, but inappropriate, question: Why do battered women stay? After centuries of socializing women to think of the domestic domain as their proper place, it is more than ironic that we have asked why *she* does not leave when victimized. The failure to have asked why violent men are *allowed* to stay itself speaks to the collusion of researchers and clinicians in maintaining a value system and unequal power structure in which the abuser's position is secure in the marital dwelling (with alcohol as the overriding justification) while victimized women and children seek refuge elsewhere (Hoff, 1990).[16]

To conclude, the evidence suggests that abused women in Micronesia have more in common with women worldwide than is immediately obvious, in spite of characteristics unique to the societies cited. The papers reviewed drew primarily from a few case studies extrapolated from larger data sets and from sources other than the victims and perpetrators themselves. Although wife abuse did not appear to be the primary focus of these researchers' work, it is commendable that they nevertheless directed attention to this increasingly visible problem. Further clarification of the issues raised here would most likely emerge from fieldwork (plus surveys to establish prevalence) in which the focal questions concerned abuse, its dynamics, and manifestations in particular cultures. For example, why is violence against young elite Palauan wives more prominent than among nonelites? What is the extent of wives' violence against their husbands in Micronesia? What is the meaning of women's power and esteem in societies where women nevertheless are the predominant objects of abuse? How can the dominance of medical/psychological explanations of (and excuses for) violence be explained in developing societies? The more anthropologists and others continue to analyze the similarities and differences in women's experience of violence, the more grounds will be garnered for policy change and service programs that may reduce or remove the worldwide scourge of woman abuse.

Acknowledgment

My thanks to Suenje Matthiesen and anonymous reviewers for their suggestions on this paper.

Notes

1. Even in Western societies there is variation in the general pattern of anonymity of women's refuges. In some

instances (e.g., Alaska and Canada) treatment centers for male batterers are located in an adjoining building, with both men's and women's programs clearly visible to the community. Staff of such programs say that this arrangement seems to refocus the men's energy on treatment possibilities and thus defuses the determination of some to find the wives who have left them.

2. In another paper (Hoff, 1991a, pp. 21) I have elaborated on the question of validity and reliability of data from the HRAF, particularly ethnographies produced primarily by male researchers at a time when violence against women was not yet a topic of public or research concern.

3. The term "feminist" does not imply a monolithic viewpoint on gender issues. Feminist perspectives are broadly classified as liberal, socialist, radical, and psychoanalytic (Hoff, 1990, p. 256, n. 1).

4. Another spelling for Palau is Belau. I will use that used by Nero in the reviewed work, Palau.

5. Carucci's paper describes violence on the islands of Ujelang and Enewetak, the westernmost of the Marshall Islands. He notes that Enewetak people (exiled to Ujelang Atoll during US nuclear weapons tests) see themselves as different from other Marshall Islanders. In this paper I refer to the Enewetak and Ujelang people as Marshall Islanders or Marshallese.

6. The term "battering" is generally understood in the United States as repeated blows resulting in both physical and psychological trauma. Later discussion in this essay elaborates on the meaning of the term.

7. The WHO definition does not include nosebiting, most likely because the custom is extinct.

8. These differences exist not only between societies, but *within* societies. For example, in a multicultural society such as the United States, violence against African American women may be intertwined with race and class issues (Coley & Becket, 1988); or violence against women recently immigrated appears to be exacerbated by the social isolation often experienced by recent immigrants (Jang, Lee, & Morello-Frosch, 1991).

9. Among feminist advocates of battered women in the United States, "husband battering" is regarded as a myth, the function of which is to deflect attention from the real problem of injurious and life-threatening violence against wives (field notes for Hoff, 1990). This position supports Counts' point that "battering" and "abuse" are political, not scientific terms (p. 227).

10. Discussion of violence rates in these societies would be more complete but for the paucity of such data in both historical and contemporary records (Nero, p. 63). Because none of the papers reviewed included overall rates, I assume that this fact is linked with the "sensitive nature of the topic" (Nero, p. 63), making it very difficult for researchers to obtain and present such data on wife abuse. This accords with my own experience in Kenya (Hoff, 1985).

11. See Gailey (1988, esp. pp. 54–60) for an in-depth analysis of how, in state formation, women's authority is undercut, regardless of class.

12. As Gailey (1988, pp. 38–39) notes, gender subordination is revealed by the absence of women in control of institutions that determine policies affecting them, such as reproductive rights, and in the degree to which women are victimized by violence.

13. See Gailey (1992, pp. 61–63) for a discussion of migrant Tongan women as the most consistently reliable source of financial support of local kindreds.

14. This pattern is well-documented in the United States (e.g., Martin, 1976) and was observed repeatedly during

FORUM '85 in Nairobi at workshops in which women from around the world shared their experiences with abuse and their hope for change.

15. For an in-depth analysis of shifts in gender hierarchy and the influence of state formation and capitalist economies on women's status, see Gailey (1988). Though more research is needed, Gailey's evolutionary perspective suggests explanations for Palauan wife beating despite women's high status in this society.

16. In the United States, even when abused or threatened women obtain restraining orders, their safety is by no means assured, as revealed in early 1992 in Boston where an unprecedented number of women were murdered despite court-ordered restraints on the men who killed them (Locy, 1992). These facts document the limitations of legal remedies as long as the sociocultural milieu supporting male violence remains essentially unchanged. See also MacLeod (1989) for citation of similar dilemmas in Canada regarding the limits of police and crisis responses in the absence of *preventive* programs encompassing ecological perspectives, reshaping of values, and community development.

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Food, Health, and Development in the Pacific Islands: Policy Implications for Micronesia

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Rising incidences of noncommunicable diseases in Pacific island populations are linked to dietary change. Many factors are involved: urbanization, food aid, changing food preferences, economic modernization, the convenience of processed foods, the high price of traditional staples, problems of national food distribution and marketing, urban poverty, and changes in farming systems and land use. Some Pacific islands, notably the Federated States of Micronesia and the Republic of the Marshall Islands, have become dependent on imported food to the extent that there are negative implications for their trading balances and future economic development. The economic implications of food and nutrition problems have been given little prominence in the past, and governments have treated food and nutrition as a medical issue rather than a development problem. There is a need throughout the region, particularly in Micronesia, for household food security policy frameworks to be developed.

DISEASES OF AFFLUENCE, WITHOUT THE AFFLUENCE

Although the Pacific islands are undeniably part of the Third World of underdeveloped nations, they are usually thought of as relatively well-off countries where the people live not so much in poverty as in simplicity and primitive subsistence affluence. In the popular imagination the

ISLA: A Journal of Micronesian Studies, 1:2. Dry Season, 1992, 223–50

Pacific islands are places where food is plentiful; there are fish in the sea, yams in the garden, coconuts growing wild on the shore, and, in the words of the song from the musical *South Pacific*, "We got mangoes and bananas you can pick right off the tree." Sadly, the truth today is that increasing numbers of islanders cannot afford fish, yams, coconuts, or fruit and are living on cheap, imported, refined cereals and fatty offcuts of meat, such as turkey tails and mutton flaps, that are rejected by consumers in more affluent regions of the world. While there is no starvation in the Pacific islands, throughout the region there are significant rising incidences of dietary-related noncommunicable diseases linked to changes in diet, eating habits, child feeding practices, and a changing way of life. The Pacific islanders are acquiring all the "diseases of affluence" without the affluence.

In this paper I present a brief overview of the incidence of nutritionally-related noncommunicable diseases in the Pacific region, with emphasis on the Federated States of Micronesia (FSM), the Republic of the Marshall Islands (RMI), and the Republic of Kiribati. I review the factors that have contributed to dietary change with reference to the special problems of the FSM and the RMI.[1] I conclude by looking at regional trends in food, nutrition policy, and policy issues, which together suggest the need for household food security policy frameworks in Pacific island countries.

Common nutritionally-related noncommunicable diseases[2] (NCDs) in the region include diabetes mellitus, cardiovascular diseases, gout, alcohol-related diseases, tooth and gum disease, and certain types of cancer. The onset of diabetes occurs at an unusually early age in most Polynesian and Micronesian populations, and it is a disease that often leads to blindness, kidney disease, gangrene, and diseases of the heart and arteries. The expensive diagnostic procedures and treatment or surgery required to treat many NCDs or their side effects are placing a strain on the health service resources of most Pacific island countries, or are exceeding those resources so that there is increasing dependence on bilateral aid donors to provide treatment overseas. On a world scale the incidence of some NCDs is very high in the Pacific islands. For example in Nauru, the incidence of diabetes is among the highest in the world; the incidence in most Polynesian and Micronesian countries is also very high (Martin, Wyatt, Griew, Haurauelia, & Higginbotham, 1980; Ringrose & Zimmet, 1979; Taylor, 1983; Zimmet, 1976, 1982; Zimmet, Arblaster, & Thomas, 1978; Zimmet et al., 1981; Zimmet, Taft, Guinea, Guthrie, & Thomas, 1977). The prevalence of diabetes is higher in urban populations than in rural populations in most Pacific island countries (see Table 1).[3] The incidence of NCDs also appears to be

Table 1 *Diabetes Prevalence (Percent) for Various Pacific Populations, Age-Standardized to a World Standard Population*

Population/Place	Diabetes (%)		
	Females	Males	Total
MICRONESIANS			
Nauru	32.1	33.4	32.8
Kiribati			
rural	3.9	3.7	3.8
urban	11.1	11.7	11.5
POLYNESIANS			
Western Samoa			
rural	4.2	1.7	3.4
urban	8.5	8.2	8.5
Wallis			
rural	4.1	2.0	3.1
urban (in Noumea)	14.0	10.0	12.2
Cook Islands			
urban	8.5	5.5	7.0
Niue	8.9	5.6	7.5
Tuvalu	8.4	0.8	4.9
MELANESIANS			
Fiji			
rural	2.1	2.1	2.1
urban	10.3	5.9	8.1
Tolai (PNG)			
rural	0.0	1.8	0.8
urban	7.0	4.7	5.1
INDIANS (in Fiji)			
rural	13.6	15.1	14.7
urban	16.3	17.5	16.8
AUSTRALIAN ABORIGINES			
Bourke, NSW			
urban	19.2	20.5	20.2

Note. Adapted from McGrath, Collins, Zimmet, & Dowse, 1991, p. 38.

increasing; for example a recent survey in Western Samoa shows a dramatic increase in the incidence of diabetes and cardiovascular disease among the rural population over the past 10 years (P. Zimmet, personal communication, December 1991).[4]

In addition to the high incidence of NCDs, which is more usually associated with the health profiles of the urban populations of developed countries, most Pacific island countries have a significant incidence of malnutrition of the type more commonly associated with underdeveloped countries, particularly maternal and child malnutrition. According to Parkinson (1982, 1985) surveys of infant and child nutrition in some Pacific island countries reveal an increase in the severity of malnutrition compared with data collected in the 1950s. The general pattern revealed by nutrition surveys is for the proportion of underweight children to rise after 6 months of age with a peak at 12 to 24 months. Early weaning and bottle feeding are common contributing factors to infant malnutrition throughout the Pacific and are associated with a pattern of short birth intervals in most Pacific island countries (Saito, 1991). Infants are weaned when a subsequent pregnancy occurs and are then bottle-fed because in many Pacific island cultures it is believed that pregnant women should not breast-feed.

There are variations in the patterns of nutritional disorders among the ethnocultural subregions of Melanesia, Micronesia, and Polynesia and between atoll and high island countries. In the Melanesian countries of Papua New Guinea, the Solomon Islands, and Vanuatu, undernutrition in children, low birth weights, slow growth rates, and anemia resulting from iron deficiency and parasites are the most serious problems; these problems are also significant among children of ethnic Indian origin in Fiji (Heywood, Singleton, & Ross, 1988; Hong, 1983; Johnson & Lambert, 1982; Lund, Fred, Badcock, Bach, & Taylor, 1988; *Solomon Islands National Nutrition Survey, 1989*). Endemic malaria in these countries severely affects children's health and contributes to malnutrition when children are too ill to eat enough to meet their physical requirements. Malaria, the low status of women, and the hard, unceasing work required of women in most areas also affects maternal health and nutritional status and contributes to high rates of infant and maternal mortality and a high incidence of low birth weight babies. Maternal and child health services are the least comprehensive in the region.

In high island Polynesia and Micronesia—Tonga, the southern Cook Islands, Western Samoa, Fiji,[5] and in the high island areas of the FSM—child undernutrition is generally moderate to low and maternal and child health coverage is the best, as is access to clean water and sanitation. Cardiovascular

diseases, gout, and alcohol-related illnesses are common adult health problems. Dental and periodontal disease in children is an increasing problem. There is also a tendency for infant growth rates to slow between 3 to 6 months (Elymore, Elymore, Badcock, & Bach, 1989; James, 1987; Johnston & Lambert, 1982; Kony, 1987; Maclean, Badcock, & Bach, 1987; Sio, 1987; Wichiami, 1987). The FSM statistics for 1990 (provided by the FSM Department of Human Resources) for the number of hospital admissions of nutritional deficiencies cases showed that of a total of 97 cases, 73 were in Chuuk, 19 in Pohnpei, 5 in Yap, and 1 in Kosrae. These statistics indicated a high prevalence of malnutrition, especially of the degree of malnutrition classified as "stunting," among infants up to 59 months of age, with differences by state and zone in rates of malnutrition and dietary patterns. The incidence of severe protein-energy malnutrition (PEM) in infants appears to be increasing, and 14 deaths from PEM were recorded in 1988. Bottle feeding is a common practice in the FSM; however, although 95.5 percent of infants are breast-fed for their first 3 months, by age 3 to 5 months, 18.4 percent of infants are being bottle-fed.

In an FSM national nutrition survey completed in 1989 (Elymore et al.), a high prevalence of overweight and obesity and mild and moderate anemia among women was documented. There are health problems related to obesity, particularly diabetes and heart disease. Obesity is very common among Polynesians and Micronesians, and increasingly common among urban Melanesians. In most Pacific cultures, fatness (although not necessarily gross obesity) was and still is culturally valued as a hallmark of beauty and high status and it is also a sign of health and well-being. In Polynesia and some areas of Micronesia a large body, both in height and weight, was considered a desirable chiefly characteristic in both men and women, and, where Western values have not become influential, still is. The right to consume unrestricted amounts from a choice of many foods, including the scarcest and most sought-after foods, was a chiefly prerogative, as was a minimal obligation to do routine work.[6] Freedom from the need to carry out agricultural labor and perform other energetic chores, such as carrying water and fuel, enhances individual prestige. Thus, in many Pacific societies people are culturally strongly preoccupied with food and leisure and associate it with social status, rewards, and prestige.[7]

The atoll populations of Micronesia and Polynesia—the RMI, Kiribati, Tuvalu, Tokelau, the northern Cook Islands, and parts of the FSM—also face several serious child nutrition problems. While undernutrition occurs mainly at moderate levels, there is a tendency for infant growth rates to falter at

between 3 and 6 months, which indicates problems stemming from early weaning and inadequate weaning diets. Maternal health is better and the status of women is higher than in Melanesia, but on atolls access to clean water and sanitation is very poor because of the particular environmental conditions, which also make the food supply limited and insecure. Thus, infection, vitamin deficiency, and poor diets interact to place the nutritional status of children and mothers at risk (Deo, 1991a, 1991b; Elymore et al., 1989; Pargeter, Taylor, King, & Zimmet, 1984; Rody, 1987).

The incidence of vitamin A deficiency is extremely high in the FSM and in Kiribati,[8] and current studies may reveal that there are also serious problems of vitamin A deficiency in other atoll countries. In the FSM vitamin A deficiency and xerophthalmia in children is particularly high in Chuuk and prevalent in Pohnpei. According to health workers in Chuuk (personal communication, February 1991), there has been a rapid recent growth in vitamin A deficiency; they report that some years ago about seven cases of xerophthalmia were seen a year, but recently about four cases a week have been presenting. In 1989 an assessment of vitamin A deficiency carried out in six selected atolls in Kiribati revealed that 14.7 percent of the surveyed population had clinical symptoms of xerophthalmia.[9] The incidence was highest in urban south Tarawa. The levels in both countries considerably exceed the level recommended by the World Health Organization for considering vitamin A deficiency a public health problem.

In the RMI there is a very high incidence of diabetes mellitus, which was the third most common reason for admission to the Majuro hospital (476 cases were admitted in 1988 to 1989), and diabetes was the second most frequent reason for outpatient visits—it was the highest secondary and tertiary cause of death recorded in the years 1986 to 1989 *(Health and Vital Statistics Abstract, 1990)*. The incidence of cardiovascular disease is also very high and it is one of the leading causes of mortality. In Kiribati the incidence of diabetes, cardiovascular disease, and anemia is fairly low, but according to Deo (1991a), these diseases appear to be increasing. In the RMI there is a high incidence of malnutrition among children. It was the fifth most frequent cause of mortality recorded in the overall population in 1986, and the ninth most frequent in the 1987–1989 period. Between 1987 and 1989, health statistics record that 200 cases of malnutrition, 17 cases of kwashiorkor, and 10 cases of marasmus were admitted to the Majuro hospital. Malnutrition was the ninth most common cause of hospital admission (excluding normal deliveries and contraceptive management). Short birth intervals, poor maternal nutrition leading to the loss of the mother's

breast milk, and bottle feeding appear to be major contributing factors to infant malnutrition in the RMI.

DIETARY CHANGE

All the problems described above are linked to dietary change. The forces of dietary colonialism have been strong throughout the Pacific islands since the nineteenth century when the dietary preferences and beliefs of highly influential missionaries from England, Europe, and the United States began to shape new tastes and attitudes toward food. During the late colonial era in the South Pacific, most counties had "women's interest" (or similarly named) sections within departments of health or community or home affairs that offered home economics education to rural women. The content of these courses was inappropriately Western and contained food and nutrition messages that undermined the status of traditional Pacific island foods and dietary patterns. The training given to village women emphasized imported foods such as milk, sugar, eggs, meat, and rice and the baking of flour-based goods such as cakes, bread, biscuits, and so forth. Drum ovens for baking have been widely promoted around the Pacific islands as "appropriate technology" (Schoeffel, 1986).

The rapid pace of modernization since the 1950s has made imported food more accessible, it has accelerated dietary change, and it underlies the rise in NCDs in the Pacific islands. Prior to the 1950s most NCDs were rare in the region; although famines occurred occasionally as the result of hurricanes or other natural disasters, traditional Pacific island diets, as long as quantities of food were adequate, were conducive to good health. They were high in complex carbohydrates and fiber from root crops, bananas, and breadfruit, and they were well balanced and low in fat, salt, and sugar. Now Pacific islanders eat diets increasingly based on imported refined rice and flour and supplementary foods that are high in sugar, salt, and fat, and often low in fiber and some vitamins. Imported food such as flour, rice, and sugar are especially easy to prepare for small children, and these foods can actually be beneficial for infants under 5 years of age because refined carbohydrate food satisfies their energy requirements more easily than bulky and filling staples such as yam, taro, cassava, sweet potato, breadfruit, and banana. A common nutritional problem in the Pacific islands occurs when small children are unable to eat enough of the food they are given to meet their energy requirements, and the problem is greatest when the child is weaned. (It can

be overcome by feeding the child more frequently and cooking tubers with a little coconut cream.) But there can be costs, such as dental caries, from feeding children on imported food. The most insidious effect is that children develop a taste for imported foods and may also develop an aversion to many traditional foods.

Several studies have noted the rising incidences of NCDs in Polynesia and Micronesia since the 1970s and have pointed out the underlying social and economic changes that contribute to dietary change in the Pacific islands (e.g., Bindon, 1982; Coyne, Badcock, & Taylor, 1984; Hamnett, 1987; McKee, 1957; Parkinson, 1982; Pollock, 1974; Schoeffel, 1987; Thaman 1982, 1983, 1987). Other scholars have pointed to the effects of the cash economy on traditional food production systems (e.g., Danigellis, 1987; Howlett, 1973; Leung Wai, 1978; Thaman & Thomas, 1985; Yen, 1980). Many of these studies argue that cash cropping can have negative effects on traditional food production systems unless agricultural extension programs also address food production. For example, cash cropping may occupy land that was once used for food production, may absorb labor once devoted to food production, may decrease the diversity and extent of food crops planted, and may substantially increase the work load of women in countries where women are the primary food producers. In a more general study of food issues in the Third World, Goodman and Redclift draw attention to "the structural maladjustment between an internationalized export-oriented resource base and domestic food requirements which defines the food crisis" (1991, p.164).

The relationship among dietary change, urbanization, and food import dependency has also been described by many scholars (e. g., Fitzroy, 1981; Hau'ofa, 1979; Jeffries, 1979; McGee, 1975; Thaman, 1982). Urbanization is increasing rapidly in all Pacific island countries. In Papua New Guinea, for example, only 3 percent of the indigenous population lived in towns in 1960; by 1980, 28 percent had moved to town, and at the present rate of migration more that half of the population will be living in urban areas within the next 10 years.[10] In the RMI, 60 percent of the population now lives in the nation's two urban centers, and in most of the other countries of the Pacific islands region about 35 percent lives in urban areas. In some countries rural areas are becoming "urbanized" as the result of a remittance economy. For example, my research in Western Samoa[11] indicates that villages are changing their traditional character as communities of interdependent households and taking on suburban characteristics. In the early 1970s most villages were still nucleated settlements of traditional-style houses built around

a central meeting ground. Now most villages are becoming dispersed settlements of modern-style houses, each in its own compound, located along the edges of the main roads. There is a corresponding trend away from traditional extended family households to nuclear family households. Hezel (1989) has commented on similar trends in Micronesia. There has been a trend away from communal organization of work and production. Until the 1970s it was common for village youth groups to form working parties to help clear bush and to weed food plantations for all village households. That way even the smallest households were able to produce more than enough food for their requirements. Now the trend is for individual households to work independently of others and to concentrate their efforts toward earning cash by growing taro and other crops for export or for sale in the Apia market and then using the cash earned to buy more of their food.

There appears to be a correlation between dietary change and the extent to which people depend on cash for their livelihood. Although the extent of dependence on imported food in Kiribati is not as widespread as in the RMI and the FSM, food and beverages in Kiribati account for about 60 percent of imports (mainly rice, flour, sugar, and canned meat and fish). Dependence on imported food is confined to urban South Tarawa where there is insufficient land available to feed the migrant population from other islands. The gradual movement toward a cash economy in rural areas is also causing dietary change. Deo (1991a, p. 29), using estimates based on case studies, suggests that the percentage of energy in the diet from imported sources in urban areas is 66.9 and in rural areas (where a source of cash is available) it is 35.6. Copra and seaweed are grown for cash, and cash crop income along with remittances from relatives working in South Tarawa or from men working on ships are the main sources of income in the rural areas. Wage earners are expected to help support the extended family, which more often than not moves to town to share the excitements of urban life with the wage earner or, if close relatives remain in the outer islands, the wage earners are expected to send money home. People have a limited amount of money, and after church and community donations and buying clothing, they use money to buy rice, flour, and sugar. Over the past 10 years there has been a 30 percent decrease in the purchasing power of consumers because of increases in prices relative to wages. Food imports now account for close to 40 percent of total imports or 25 percent of Gross Domestic Product (Deo, 1991a).

The problems of urbanization and food distribution systems have been documented by a number of researchers (e.g., Baxter, 1980; Bourke, Carrad,

& Heywood, 1981; Fisk, 1977; Hau'ofa, 1979; McGee, Ward, & Drakakis-Smith,1980; Ward, Drakakis-Smith, & McGee, 1979). The scarcity of local produce on urban markets in most Pacific island countries is the result of impediments that make it difficult for village smallholders to supply town markets—such as lack of roads, transportation, storage facilities, and market outlets. Production and marketing of local food in most Pacific island countries is lagging because it is linked to "backward" subsistence production upon which little effort has been expended toward improving productivity or diversity. It has been assumed that subsistence production will take care of itself and continue to feed the majority in the future as it has done in the past. National development resources tend to be used to support production for export of the traditional commodity crops: coconuts, cocoa, and coffee, and more recently palm oil and spices in some countries.

Therefore, throughout the Pacific islands, almost all locally grown foods are more expensive to buy than imported foods such as rice, flour, sugar, and canned fish. For example, according to cost comparisons made in the FSM in 1987, rice cost $0.50 per kilo in comparison with $0.60 to $0.75 per kilo for breadfruit, taro, and tapioca. Canned fish cost $0.13 per gram in comparison with fresh fish at $0.21 per gram (James, 1987, pp. 227–235). In most countries the price of food is increasing sharply relative to wages. For example, the price of basic food items in Fiji increased from 30 percent to 200 percent between 1986 and 1990 while wages increased by only about 18 percent. In households earning the average unskilled worker's wage, food cost 75 percent of a Fijian's wage and 55 percent of an Indian's wage (Barr, 1990, p.113). In the RMI, rice and flour are the cheapest foods and when the money is short, households live on doughnuts, pancakes, and rice unaccompanied by anything except soy sauce until the next payday. Turkey tails, which are solid fat, are the cheapest meat at $0.40 to $0.50 per pound and they are a very popular food because they are cheap and because Marshallese people, like most Pacific islanders, enjoy eating fat. More nutritious foods such as fresh fish, fruit and vegetables, breadfruit, taro, and coconuts are scarce and expensive; breadfruit (when available) sells for $1.50 each in contrast to the cheaper calories of rice at $1.65 per pound.[12] There is anecdotal evidence from health workers in Fiji that in very low income households the foods most frequently consumed by children are boiled rice and sweetened tea.

The consumer appeal of imported staples such as rice, flour, and noodles is not merely that they are cheaper than most traditional staples. They are more convenient foods—easier to store, less perishable, quicker to prepare

and cook, and they use less fuel in the cooking process. In comparison, traditional staples such tubers, breadfruit, and bananas are bulky, perishable, and more time consuming to prepare and cook. These are important considerations for urban people who have limited space and who have to pay for cooking fuel. In some Pacific islands—much of Micronesia and Melanesia—there seems to be an actual preference for rice as a staple food. However, this is not the case in Tonga and Western Samoa. In Western Samoa taro remains the most favored food, and Samoans still prefer bananas and breadfruit to rice, while Tongans prefer yam and taro. In both countries rice is liked as a dessert, but for main meals it is eaten only if traditional staples are not available or cannot be afforded.

The diets of the atoll people of Kiribati and the RMI and parts of the FSM have been particularly vulnerable to change. Subsistence diets were based on a narrow range of foods: breadfruit, atoll taro, banana, coconut, pandanus fruit, and several kinds of fish and other seafoods. Pigs and chickens were eaten only at feasts, and atoll taro was also usually reserved for special meals. The least well endowed atolls supported only coconut, pandanus, and atoll taro. The taro was grown in pits (dug from the coral rock) that were filled with compost to create soil. It is understandable that people would quickly develop preferences for convenient, energy-dense foods; sweet or fatty food was rare and highly prized traditionally, and starchy foods were sometimes scarce. Atoll diets were probably always marginal in vitamin and mineral content, but a variety of vitamin-rich supplementary foods was eaten occasionally such as pandanus fruit, a type of wild fig called *te bero* by I-Kiribati (*ficus tincoria*), and several other wild species of plants with green leaves or shoots, all rich in vitamin A. Sweet foods rich in vitamin A were laboriously manufactured in small quantities for feasts by boiling down palm toddy (termed *kamaimai* in Kiribati) or by pounding dried pandanus fruit. Because of the scarcity or seasonal scarcity of the source materials and the labor intensity of production, these foods were not eaten very frequently. The availability of new foods that are dense in calories—sugar, cooking fat, and refined cereals—has tipped the balance toward vitamin A deficiency by reducing the need of islanders to eat supplementary foods such as te bero and wild greens, which are high in vitamin A and iron, but which have acquired a low status as "famine" food. Sugary tea has replaced vitamin-rich toddy. In urban South Tarawa, pandanus fruit is scarce, and traditional greens are no longer easily obtainable; introduced foods rich in vitamin A are generally disdained by I-Kiribati. As in the FSM and the RMI, green leaves and papaya are often thought of as pig food or famine food, and

pumpkin and vegetables introduced by various home gardening projects are commonly not valued foods. Children's diets also tend to be low in the oils and fats necessary for absorption of vitamin A.

Food-based aid programs in the nonUS-administered Pacific islands have been confined mainly to disaster relief, but there have been various programs to feed supplementary food to Pacific islanders supposedly in need through the World Food Program and other smaller schemes, such as the New Zealand project that in the 1970s dispensed sugary tablets of compressed fruit-flavoured milk powder to Western Samoan children. The negative effects of food assistance programs are now well known and have been discontinued in most of the region, but they have influenced current food and health problems. The FSM and the RMI share a range of development and public health problems with their South Pacific island neighbors, but they differ in the extent of their dependence on the outside world for their food supply, a dependence that is among the most severe in the region. Food aid appears to have been the most significant factor in dietary change in the FSM and the RMI, a situation that has been documented in the Commonwealth of the Northern Mariana Islands by Denman and Dewey (1987). In the early 1970s the people of the Trust Territory of the Pacific Islands became eligible for US Department of Agriculture (USDA) supplementary feeding programs. The general political-economic background of food aid is suggested by Goodman and Redclift (1991, pp. 116–119) who argue that New Deal policies of the 1930s in the United States led to large-scale, highly productive forms of agriculture that were adopted, postwar, by Europe and other industrialized countries, leading to an overproduction of food. This led to pressure from producer lobbies on governments both to allow the dumping of subsidized produce on overseas markets and to purchase and dispose of farm produce as aid. It is also possible that the encouragement of food import dependency was favored in the past by advisers to the US government, to whom the islands were of great strategic importance during the Cold War. Kwajalein Atoll in the RMI is still leased by the United States for military research. Recognition of the problems of economic dependency associated with food aid by US policy makers probably led to the recent discontinuation of the US food assistance programs under the Compacts of Free Association.

The food assistance programs in Micronesia included school lunches and breakfasts, preschool meals, hospital food supplies, food for families in need, meals for the elderly, and short-term disaster relief food supplies. Rody (1987) observed that:

> The expansion of these programs has been spectacular; over five million pounds of rice was shipped to one island district, Truk [now Chuuk State], in a single year. This was an average daily ration of one half pound of uncooked rice for every man, woman and child in Truk. The rice was accompanied by an array of sixteen other food items. (p. 187)

She noted that statistics showed that about half of the population of Micronesia participated in the programs; however, because some families participated in a number of different programs, the figure may overestimate the extent of participation. With the exception of disaster relief, the programs were conceived in the United States to assist the inner-city poor and other disadvantaged groups. The programs were not designed for the needs of Pacific islanders, but Micronesians qualified for the programs because of their relatively low incomes. Success criteria were based on the number of people taking part in the various programs rather than using nutritional and biometric criteria based on "before" and "after" measurements. Rody cites one study by a USDA nutritionist that showed that 10 years after the program began, growth stunting among children in the RMI was greatest in areas where food program participation was highest. The significance of this finding is difficult to evaluate scientifically because there were no measurements of children prior to the commencement of the program. However, Rody (1987, p. 188) says some nutritionists have interpreted this fact as evidence of the inferiority of a diet of rice, flour, and other processed food compared with the traditional diet.

In the RMI now, most rural islanders eat mainly imported food, unlike Kiribati where imported food is still a luxury for many rural people. In the RMI over the past 20 years, people have turned from a diet based on fish, coconut, and breadfruit to one based on rice, flour, and meat. According to several Peace Corps Volunteers residing with rural Marshallese families, the food most frequently cooked and consumed at home is doughnuts made of flour mixed with sugar and water and fried in fat (personal communication, February 1991). Urban residents eat and drink considerable quantities of packaged snack foods and sweet soda drinks. Accordingly, diets are excessively high in fat, salt, refined starch and sugar and extremely low in vitamins and minerals. RMI official statistics for 1988–89 indicate that the value of food imports in the RMI increased from $2.9 million (39 percent of total imports) in 1976 to $11.5 million (34 percent of total imports) in 1988 (*Marshall Islands Statistical Abstract,* p. 140, 1988–89, p. 31). This indicates an overall increase in import dependency, although the proportion of food imports declined slightly.

In the FSM a similar situation prevails. The country has a variety of environments ranging from small atolls to large, high islands with good conditions for food production. Yet even on the high islands the most commonly consumed staple in most areas appears to be imported rice, followed by imported ramen and flour. Yap is the exception—there is still a high level of consumption of locally grown staples (such as cassava, taro, breadfruit, and bananas).[13] Fresh fish is plentiful in some areas, mainly smaller outer islands, but scarce in the main population centers. The FSM national nutrition survey (Elymore et al., 1989) showed that most diets are typically based on carbohydrates, fats, and protein, with extremely low levels of consumption of fruits and vegetables. The produce market in Pohnpei has a restricted variety of fresh food available, and produce is expensive. There is widespread distaste for vegetables and fresh fruit, particularly green vegetables, which are considered to be pig food, as is ripe papaya. Food service workers reported that canned vegetables supplied at various times as part of a supplementary feeding program for people affected by natural disasters are usually fed to the pigs.

The situation on Pohnpei is instructive because although it offers an excellent environment for food production, there is a high dependence on imported food. Pohnpei is among the largest mountainous islands of volcanic origin in Micronesia. It is fertile, rainfall is high, and the island is lushly vegetated. Pohnpeians are the majority of the population, but there are Polynesian and other Micronesian minority groups on Pohnpei who were resettled after natural disasters from atolls during the colonial period and who have very limited access to land. Rural Pohnpeians are an agriculturally-oriented people. Pepper is widely grown as a cash crop, and, reputedly, many farmers also make money from growing marijuana illegally. Yams, kava (*sakau*), and pigs are essential for the maintenance of social status and are exchanged at funerals and other ceremonial occasions. Pigs, being highly valued and expensive, are very well cared for, and many households raise and hand feed their pigs entirely in pens instead of allowing them to roam freely. Breadfruit, coconuts, bananas, and swamp taro (Cyrtosperma) grow in abundance but nowadays these crops are harvested mainly for pig food, and not much local food is eaten if money is available to buy rice and other imported foods. According to Pohnpeian informants, people grow yams as important traditional gifts to be given on ceremonial occasions, but those receiving the yams often replant them rather than eating them if they have money for other preferred foods. In 1991, I carried out two small surveys based on 24-hour food recalls in two communities.[14] One was in a native

Pohnpeian community with plenty of land, the other was a community of people resettled from an atoll. The data showed little dietary difference between the two communities; both were eating mainly imported food.

POLICY ISSUES

Apart from the nutritional consequences of dietary change, Pacific island countries face high economic costs from increasing dependency on imported food. Food and beverages account for between 17 and 28 percent of the value of total imports in most Pacific island countries. The percentage of food imports in most Pacific island countries has been rising steadily over time. In an increasingly global economy, dependence on imported food need not be a problem in itself as long as the supply of food from abroad is secure and people eat enough of the right foods. But in the Pacific island region generally, the more economically "independent" the food-importing country is, the greater the extent to which food import dependency presents an economic problem. Politically speaking, there are three Pacific island subregions. The first is made up of island countries that remain connected to a metropolitan power: the American territories of eastern Samoa, the Northern Marianas, and Guam; the French territories of New Caledonia, Wallis and Futuna, and French Polynesia; and the New Zealand territory of Tokelau. These countries are economically integrated with their metropolitan powers. The second subregion comprises the countries that are semiautonomous, such as the Cook Islands and Niue, Palau, the Federated States of Micronesia, and the Republic of the Marshall Islands. The third subregion comprises the fully independent countries: Papua New Guinea, the Solomon Islands, Vanuatu, Fiji, Western Samoa, Tonga, Tuvalu, and Kiribati.

In the political dependencies there is no requirement to balance the books in terms of trade; therefore, food import dependency, given that internal food distribution systems operate accessibly, is a problem only in terms of the loss of the cultural identity and systems that it symbolizes. Preferences among Tahitians for French bread, or among Guamanians for rice and instant noodles need not necessarily have negative consequences for national health status any more than such food preferences do among low income groups in France or the United States. Given that people have an affordable range of nutritious foods to choose from, and that they make an informed choice of foods, it need not matter from where the food comes. But leaving nutrition and health aside, there are increasing grounds for

concern about the effect of large import bills for food on the economies of the more independent Pacific island countries, especially those that are small, underdeveloped, and lacking in wealth-producing natural resources.

Foy's illuminating studies (1990, 1991) of rice imports and food security in Vanuatu illustrate the problem. Foy's findings point out that between 1979 and 1990 the value of rice imports represented on the average an amount equivalent to 4.3 percent of total imports, 21.7 percent of all food imports, and 16 percent of domestic export earnings. Foy estimates that, nationally, the average expenditure on rice accounts for 21.8 percent of total annual household expenditure. In the past, rice consumption in Vanuatu was mainly in rural areas by those who had other sources of food but who had the money to buy rice. Now urbanization is growing at about 7.5 percent per year, and there are increasing numbers of people who depend on rice because its is one of the cheapest available foods; accordingly rice imports will soar in the years to come and place an increasing burden of demand on limited foreign exchange earnings. A solution that has occurred to many policy makers in the past has been to try to encourage domestic rice production. But rice has not been a successful crop in the Pacific, except perhaps under the Japanese administration of Micronesia, because (a) rice grown on a large scale in the Pacific islands has been more expensive than imported rice,[15] and (b) attempts to get smallholders to grow rice as a subsistence crop have failed. Small-scale rice cultivation involves a farming system that is alien to Pacific islanders; the exceptions are small-scale rice growers in Fiji whose ancestors brought their traditional farming systems from India.

The cost of food import dependency will increasingly be a key issue for the Federated States of Micronesia and the Marshall Islands. Since the new political arrangements under the Compacts of Free Association with the United States were made, the FSM can no longer afford to maintain its food assistance programs and is phasing them out; the RMI has opted to continue the programs and to pay for them out of its Compact funds. In the urban areas and the rural outer islands alike, preschoolers, school children, and the elderly continue to be served free two- or three-course lunches at various feeding centers. The food programs have been very popular, which makes it politically very difficult to discontinue them; furthermore, the dependency on imported food and a lack of alternative locally grown foods is such that withdrawal of the feeding programs would cause great hardship. Even with the discontinuation of school breakfasts, the government spends close to $3 million a year on the school feeding program alone. Food is no longer provided by the US Department of Agriculture according to their nutritional specifications, but food is purchased from local importers. The

politically powerful business community therefore has an interest in the continuation of the food assistance programs, as do the poor. Although some political leaders have expressed concern about the cost of feeding programs, there appears to be little awareness of the relationship between diet and health at the political, decision-making level. At the local government level in the RMI, some local leaders have reacted negatively to projects intended to increase family food production while campaigning for the reintroduction of government-funded school breakfasts.[16] The political will to transform the feeding programs to incorporate locally produced foods has been lacking because, understandably, people prefer the free imported foods.

One problem is that the main source of funding for nutrition education is tied into the old imported food dependency framework. In 1979 the US Department of Agriculture made its nutrition education program, Nutrition Education and Training (NET), available to Micronesia, but for much of NET's history the focus was on management of food service programs rather than on food and health. The Expanded Food and Nutrition Education Program (EFNEP) is offered in the FSM and the Marshall Islands through the College of Micronesia's Land Grant program. In Pohnpei, the program is carried out through community-based training organized through community leaders and community groups. EFNEP is based on four training components—cooking, consumer education, meal planning and preparation, and nutrition awareness—and was designed primarily for low-income inner-city residents in the United States.

Under EFNEP, nutrition education in the American trust territories and former trust territories does not address the problem of the causes of malnutrition in the region.[17] Research by Thomas (1987), and my own research in 1991, indicated that most educational messages are US-oriented. For example ENFEP uses a four food-group approach for teaching the concept of a balanced diet and meal planning. The four food groups are (1) dairy foods, (2) meat, fish, and eggs, (3) vegetables and fruits, and (4) breads and cereals. This has recently been modified so that the food groups are presented in a pyramid that indicates the desirable quantities to be eaten from the component food groups. This is also culturally inappropriate for Pacific islanders, however, because the pyramid does not include tubers, breadfruit, and bananas within the major staple carbohydrate food group. By implication these fall into the smaller "fruits and vegetables" food group. Foods shown in most posters consist, with the exception of fresh fish, entirely of imported foods. Some are culturally inappropriate (such as the ubiquitous poster illustrating a human figure made out of exotic fruits and vegetables), although there have been some attempts to produce posters locally that

show local foods. The three food-group concept of (1) energy, (2) protective, and (3) body-building foods (which is used in most south Pacific countries) is less prescriptive and culture-bound and lends itself to the promotion of local foods along with imported foods. The South Pacific Commission has produced relevant nutrition education materials and posters, but these appeared to be of limited use in the FSM and the RMI during my visit in 1991.

Although increasing numbers of health and community workers in the region advocate a greater degree of relevance and emphasis on local food in nutrition education, they say that the funding available to the College of Micronesia for nutrition education is tied to implementation of the curriculum. Many of those working in health and nutrition areas outside EFNEP are using the three food-group approach; thus, nutrition messages are inconsistent. Before the new political and financial arrangements under the Compacts were made, the USDA feeding programs were applied throughout Micronesia according to federal regulations that did not accommodate proposals to transform the food assistance programs using local, rather than imported, foods. In some cases, modest attempts to modify food programs to include local foods as well as imported food were resisted by some officials on the grounds of the "four food-group" concept.

For example, one Micronesian food service worker said that a few years ago she attempted to introduce coconuts (as a beverage) into a school menu in a rural area. She thought that this would help local villagers, who could make money from the sale of their coconuts, and she knew that the local children liked green coconut juice at least as much as imported orange juice and milk. However, she was told to desist by her US-educated superior. She was instructed that a nutritious meal must include milk to meet the "dairy food" requirement and orange juice to meet the "fruit" requirement. Coconuts, she was told, were not healthy food. She assumed this was because of the saturated fat content of coconut, but wondered why milk and other dairy food, which also contain saturated fat, were encouraged. She thought that suggestions to introduce local starchy staples like yam, taro, or breadfruit into feeding program menus were rejected because the program specifies "breads and cereals." More recently, proposals to use Compact funds to purchase locally grown foods for school lunches have not become reality because it is argued that there are few if any local growers producing food crops on a commercial basis.

Nutrition problems in the Pacific islands received little attention until the 1980s. Although community-based nutrition programs have been en-

couraged by the South Pacific Commission since the 1950s, limited or no resources have been given to such programs in most countries until recently. Dietitians were employed by hospitals to supervise the meals of in-patients, but nutrition was given little emphasis in public health programs. There was inadequate emphasis on nutrition by institutions involved in training doctors, nurses, and paramedical personnel for the region. Since then a number of positive developments have occurred with the support of Pacific island governments and nongovernmental organizations working at regional and national levels. Many agencies established programs that increased awareness in the health departments of the need to train and employ nutritionists to contribute to national public health programs. Nutrition messages in most independent South Pacific countries now emphasize locally grown foods. The South Pacific Commission has revised the curriculum for its Community Education Training Centre and has introduced family food production to the curriculum, which emphasizes nutrition, sustainable horticulture, and the use of fresh homegrown or locally grown foods. National food and nutrition committees have been established in most countries, and national nutrition surveys have been conducted.

These developments have laid the foundations for national food and nutrition policies. But in general, while increased attention and resources have been given to nutrition, food production remains an area of neglect. A far greater rate of progress has been achieved in institutionalizing nutrition within governmental and nongovernmental organizations than has been the case in the area of food production. This is because of several factors, the foremost of which is the *orientation* of nutrition policy in the Pacific island region. Nutrition tends to be viewed mainly as a health issue. Nutrition survey work has emphasized anthropometric measurement and food recall, with little or no attention paid to the *availability* of food. Most countries have located nutritionists in health departments, and most of the national personnel described as "nutritionists" have a background in nursing, dietetics, or home economics. Food and nutrition committees are dominated by and often institutionally linked to health ministries. In educational settings, nutrition is thought of as belonging to the health and home economics curricula, while at the community level nutrition is taught within a home economics framework and directed only to women. Nutrition is rarely linked to the productive sectors or to the issue of food availability, production, and distribution. Departments of agriculture and fisheries focus mainly on commercial export (and in some countries import replacement) agriculture. Of necessity, the development plans of most countries give high priority to

increasing production of exportable agricultural commodities such as copra, cocoa, coffee, palm oil, and spices. The main producers of these commodities are rural smallholders who augment their subsistence livelihood with small plantations of cash crops. Agricultural extension services, if they cover food crops, are directed only to commercial growers.

Intersectoral collaboration between productive sectors and the welfare sectors of health and education and national planning agencies was encouraged during the 1980s by the United Nations Food and Agriculture program (FAO) and UNICEF through the establishment of National Food and Nutrition Committees (NFNCs). It was hoped that NFNCs would formulate food and nutrition policies to address the underlying causes of malnutrition in each country. However, throughout the Pacific region, most NFNCs have been less successful in the policy arena than was hoped. A common problem has been that of attracting sufficiently high-level representation on the committees to influence policy, particularly from the national planning and decision-making ministries of finance. There has also been a tendency for governments to see the committees' role narrowly, as advisers to the health sector with a program of activities directed toward public education and data collection. Where projects designed to improve, increase, and diversify household food production have been attempted through NFNCs, they have been carried out on a finite "project" basis, in isolation from mainstream agricultural programs.

In the Marshall Islands the recommendations of food and nutrition advisers to establish a NFNC have so far not been accepted by the RMI government. The FSM has established state food and nutrition committees; the national Department of Human Resources employs a qualified nutritionist who plays a coordinating and policy development role. But although the Pohnpei State Foods and Nutrition Committee has high-level agricultural representation, the Department of Agriculture still did not give as high a priority to a Pohnpei State family food production project as it did to a pepper production project, even though the latter could hardly be described as economically successful. Attempts by the family food production coordinator to integrate pepper production with improved household food production activities were resisted by the department. This situation is typical of food production projects around the region, many of which are not even implemented through agriculture departments. Pressured by international agencies to improve national export performance, "Agricultural sectors are mortgaged to earn foreign exchange and service external debt accumulated in part to pay for imports of basic foods" (Goodman & Redclift, 1991, p. 165).

Several aid and development agencies have recognized the structural causes of food and nutrition problems in the Pacific islands and have therefore assisted various household food production and home-gardening projects over the past 20 years. But these projects have tended to be marginal to mainstream agriculture programs and dependent on short-term project funding. Some have been successful, particularly in Melanesia where most women are keen horticulturalists and where green vegetables are an important and valued traditional food. But more often than not, food production activities encouraged by home-gardening projects dwindle and disappear after a few years when the funding runs out and the volunteer leaves. One of the problems is that many home-gardening projects have been designed with insufficient analytical rigor. They have lacked measurable objectives such as increased home food production in urban areas, or increased diversification of food production in rural areas, or specific planting targets. Some have overemphasized exotic annuals (e.g., tomato, cabbage, cucumber, capsicum, etc.) and insufficiently emphasized traditional food crops, perhaps because vegetable seeds were more accessible than other planting materials and because of the novelty of exotic vegetables. Home-gardening projects have also tended to give insufficient consideration to cultural matters such as local dietary habits and food preferences, the status of various foods, and cooking practices.

Many home-gardening projects have not given sufficient consideration to what nutritional problems they are addressing or what nutritional changes they are trying to achieve. Some have been overly ambitious and have relied on expensive technology, fertilizers, and pesticides subsidized by the aid donor. Others have been too technically complex for rural people, such as elaborate hydroponic schemes, or have demanded more effort from villagers than they were willing to expend, such as intricate permaculture schemes. While there are definitely major needs for financial and technical support for subsistence improvement and for urban home-gardening projects to be continued, careful prior research is needed on the problems to be overcome so that the projects are better designed and better executed.

CONCLUSION

The two issues highlighted in this paper are, first, that dietary-related disease has become a major public health problem throughout the Pacific islands and is related to dietary change. Second, growing food-import dependency

is an increasing economic problem in politically independent or semi-independent Pacific island countries. The prospects in most Pacific island countries for a major increase in exports or other sources of revenue do not look good in terms of current products and world markets. Unless food imports are to continue to absorb an ever-increasing share of the national purse, and unless the human and economic costs of rising incidences of NCDs are to continue, Pacific island nations will have to address means of improving the internal production, distribution, and marketing of food. Slapping tariffs on all food imports will only increase food costs for the poor and does not address the structural underpinnings of the problem. The key problem throughout the region, particularly in Micronesia, is the lack of policy frameworks that locate household food production projects within a long-term, high priority national food strategy that addresses food and nutrition issues at all levels. The Federated States of Micronesia and the Republic of the Marshall Islands face tremendous problems because of their dependence on imported food, and Kiribati has a similar dependence in the urban area, which is beginning to spread to rural areas. In the RMI the rate of population growth is so high that the country may have already exceeded its capability to feed itself. Import statistics suggest that every step taken in self-governing Micronesia toward economic modernization is accompanied by increased demand for imported food, which undermines national goals of self-reliance, trade balances, and public health. The problem is exacerbated on atolls because of the limited potential for increasing and diversifying food production as populations grow.

The way ahead for policy makers may be to develop national household food security policies that ensure that urban and rural households have access at all times to enough food for an active, healthy life. High levels of dependence on imported food will undermine this objective because the food supply is at risk during periods of economic recession or international instability and because of the poor nutritional quality of much imported food. If food security were to become a major national development objective, governments would strongly encourage smallholder production of food crops aimed at the national market, as well as cash crops for export. They would give high priority (a) to research into food production, focusing on the development of acceptable, nutritionally sound food crops; (b) to improved small-scale agricultural, fisheries, and livestock production practices; (c) to effective extension methods; and (d) to strategies for promoting and marketing smallholder produce. They would encourage the establishment of a network of food plant multiplication centers. In atoll countries, enterprises that pro-

cess and add value to imported grains would be encouraged. In the RMI, contracts to supply food for school meals would be gradually phased toward local producers to replace imported food in school feeding programs. Strategies would be developed and implemented to promote food crop replanting after natural disasters. Governments would also foster national programs to discourage bottle feeding and to promote consumer awareness and the consumption of local foods. They might tax non-nutritious snack foods and beverages to discourage consumption and consider banning the advertising and promotion of such products. They would implement national nutrition education programs, targeting clearly identified national food and health problems and using carefully researched and tested culturally meaningful education methods.

To encourage such policy development in countries of the region, particularly in food production, the South Pacific Commission has recently commenced a Household Food Security Project, with encouragement and assistance from UNICEF and UNDP. As the project's director Silinga Kofe (1990) notes, the household food security problem in the Pacific islands is not simply a supply problem or even simply a demand problem resulting from low incomes. Nor is it merely a public health problem or a matter of human nutritional requirements; it comprises other disparate elements such as modern aspirations, economic factors, constraints posed by environment and geographical location, characteristics of internal production and distribution of food, and international relations and trade. Household food security can only be tackled in the context of overall national development planning.

Acknowledgment

I wish to acknowledge with appreciation the assistance provided by the UNICEF Pacific Regional Office, Suva, Fiji, in researching this paper; however, the views and conclusions expressed are my own and do not necessarily represent those of UNICEF.

Notes

1. I have excluded Palau from this analysis because of a lack of data.

2. I have used this term because it is widely used and understood in the Pacific islands region, but I believe that the term, like the term "life-style diseases," is misleading. It tends to diminish the significance of environmental and economic conditions that contribute to the disease patterns and unfairly connotes blame on the victims of this group of diseases.

3. It is also theorized that the indigenous inhabitants of the Pacific

islands, particularly Polynesians and Micronesians, may be genetically predisposed to diabetes when their diet and life-style change from traditional patterns. See for example McGrath, Collins, Zimmet, & Dowse, 1991, pp. 11–12.

4. Professor Paul Zimmet is the Director of the International Diabetes Institute and the WHO collaborating Centre for the Epidemiology of Diabetes Mellitus and Health Promotion for NCD Control Research.

5. Fijians are ethnically Melanesian with some Polynesian admixture, particularly in eastern Fiji; however, the contemporary culture and development situation of Fiji is more similar to the Polynesian than the Melanesian region.

6. A sedentary life-style is considered dignified and appropriate for persons of high social status, as illustrated by the criticism in parliament in 1989 of one of Western Samoa's paramount chiefs—because he was jogging on public roads to keep fit.

7. For a further discussion of food and culture in the Pacific islands, see Pollock (1992).

8. Data provided by UNICEF Pacific Regional Office, Suva, Fiji, 1991.

9. Data provided by UNICEF Pacific Regional Office, Suva, Fiji, March 1991.

10. Fifty-eight percent of the population will be living in towns by the year 2000 according to the ESCAP estimate in *Urbanisation in Papua New Guinea, Economic and Social Commission for Asia and the Pacific* (n.d.).

11. From my unpublished research data on social change in Western Samoa, 1975 to 1992.

12. From data I collected in the Marshall Islands, February 1991.

13. In Yap State, child malnutrition prevalence is higher than in other states (Elymore et al., 1989), indicating that although food security in terms of the amount of local food crops grown is higher than in other states, there are problems with child feeding.

14. Unpublished data in the author's possession.

15. Prices for locally grown rice would be higher if prices reflected true costs. Rice production in Fiji, the Solomon Islands, and Papua New Guinea has been subsidized by aid or development loans.

16. I interviewed two mayors of local government councils in the Marshall Islands who informed me that they did not see the point of the home-gardening projects, because people did not like to eat vegetables, preferring imported food. They wished for an increase in feeding programs because these were popular with their electorate. An initially successful home-gardening project on one rural island was not sustained because the local government council refused to pay extension workers. The problem may have been that food production projects on other islands had been heavily subsidized by aid, including giving monetary encouragement to villagers to plant crops and paying community extension workers. This has had the effect of further undermining self-reliance because many rural people now expect to be paid to improve their own welfare.

17. This is not to say that EFNEP has been uninvolved in promoting local foods. The cookbook by the nutritionist Nancy Rody, which features island foods, is used extensively for teaching nutrition and home economics in the region. However, it appears that women prepare these recipes mainly for special occasions because the recipes require more ingredients than the women usually have in their homes and more time than they usually devote to cooking.

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Research Needs for Improving the Health of Micronesian Children

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This paper addresses four major causes of childhood morbidity in Micronesia and research needs for designing environmentally appropriate and culturally acceptable disease prevention measures. Dengue fever, cholera, amoebiasis, and leptospirosis occur in endemic and epidemic forms throughout Micronesia; all four diseases, directly or indirectly, involve water in the transmission process. Prevention measures can be effective only if the context of disease is better understood. Public health research is needed to identify the problems and needs of Micronesian communities. Specific areas that should be studied are the epidemiological distribution of disease, maternal and child health care, and interisland travel.

As the developed world moves away from the problems of infectious and parasitic diseases, the people of Micronesia still suffer from endemic and epidemic forms of dengue fever, leptospirosis, cholera, and amoebiasis. Between 1988 and 1990, a dengue fever epidemic spread through the island of Majuro, where it was confirmed in October 1989, to Kosrae and eventually to Pohnpei (*Pacific Morbidity and Mortality Monthly*, 1989). Such island-hopping epidemics exemplify how human behavior (via air and sea travel) acts as a major means of transmission. On the other hand, diseases such as amoebiasis appear to have an endemic status throughout the Republic of the Marshall Islands (RMI), the Federated States of Micronesia (FSM), and the Commonwealth of the Northern Mariana Islands

ISLA: A Journal of Micronesian Studies, 1:2. Dry Season, 1992, 251–60

(CNMI). While endemic diseases pose continuous health problems, periodic epidemics can intensify the health care needs of island residents. The 1988 dengue fever outbreak in Palau, which affected up to 60 percent of the population, is an example of such a disaster ("South Pacific Environment," 1988, p. 12). Thus, infectious diseases place a continuous demand on health care services.

WATER-TRANSMITTED AND WATER-BORNE DISEASES IN MICRONESIA

Because of rainfall patterns, year-round warm temperatures, suitable breeding sites for vectors, and a continuous availability of hosts (animal reservoirs), water-associated disease organisms thrive in the tropics. In addition, diseases such as amoebiasis go undetected because the human reservoir is usually in a chronic condition and asymptomatic (Gordon, 1965). All of these factors contribute to the persistent, endemic nature of water-borne diseases. Endemic diseases are most likely to interfere with or inhibit the natural growth processes of children: "The most vulnerable stages of growth are . . . from birth to about six years when the child is experiencing major biological, psychological, and social changes" (Haas, 1990, p. 223). Infantile diarrhea, often the result of parasitic infections, remains one of the major causes of morbidity among Micronesian children (*Selected Reportable Diseases Summary,* 1991).

Unlike the immunities associated with many viral diseases (such as dengue fever), natural or artificially induced immunity to reinfection from parasitic diseases appears to be of short duration; moreover, susceptibility to reinfection is influenced by the individual's nutritional status (Gordon, 1965). Reinfection is one of the reasons infectious diseases remain the major cause of infant morbidity and mortality in the world (Svanborg-Eden & Levin, 1990). Along with reintroduction via air and water, chronically ill individuals (human reservoirs) are themselves sources of reinfection. Asymptomatic infections may be the most persistent because there is little or no perceived threat from exposure to and contact with noninfected individuals. Thus, a human reservoir may continue as an unnoticed source of reinfection. In the case of zoonotic diseases, the prevalence of infection may best be measured by examining the animal reservoirs, as demonstrated by Ryu and Haddock (1974). Of the four known diseases that directly or indirectly involve water in the transmission process, dengue fever is the only disease that is vector

transmitted (dependent on mosquitoes as intermediate hosts); cholera, amoebiasis, and leptospirosis are directly transmitted to humans. The following section addresses each of these four diseases.

Dengue Fever

The two primary vectors of dengue fever throughout Micronesia are *Aedes albopictus* and *Ae. aegypti. Ae. aegypti,* once thought to be eradicated from Guam,[1] still thrives on Kosrae and Pohnpei (Bohart, 1956). Both of these mosquitoes breed in fresh, stagnant water collected in natural and artificial water containers. Members of the *Ae. scutellaris* complex, the primary vectors of filariasis in the islands of Fiji (Prasad, 1989), are also implicated as potential vectors of dengue fever in Micronesia (Reisen, Burns, & Basio, 1972). In addition to dengue fever, the threats of malaria, filariasis, and yellow fever remain in Micronesia because of the varieties of *Aedes, Anopheles,* and *Culex* mosquitoes that are found throughout the islands.

Water-Borne Diseases

Water-borne diseases such as cholera, amoebiasis, and leptospirosis have a more direct route of transmission. Humans serve as the reservoir for cholera and amoebiasis, whereas leptospirosis is a zoonosis for which various feral and domesticated animals serve as reservoirs. Although contaminated water is a major source of contact and transmission for all three diseases, cholera and amoebiasis can also be transmitted via contaminated food and hand-to-mouth contact. Recent studies of cholera in Chuuk (Holmberg et al., 1984), Tarawa Atoll (McIntyre, Tira, Flood, & Blake, 1979), and Guam (Haddock, 1987) show that food-borne transmission of cholera, particularly via the consumption of uncooked fish, is the primary cause of infection. (Although these studies do not provide age-specific data on the infected populations, ethnographic observation indicates that adults are the primary handlers and consumers of uncooked fish.) In general, the inadequacy or absence of sanitary measures are the primary obstacles to controlling these diseases in the tropics (Wilcocks & Manson-Bahr, 1978). Although local environmental conditions significantly influence the endemic occurrence of these diseases, periodic epidemics occur throughout Micronesia, primarily as a result of infections being introduced by interisland travelers.

To reduce the high rates of morbidity and mortality resulting from infectious and parasitic diseases in Micronesian children, prevention and control measures are urgently needed. Environmentally appropriate and culturally acceptable prevention and control measures can be designed, but this can be achieved only through a better understanding of the ecological context of disease.

PUBLIC HEALTH RESEARCH: THE POINT OF DEPARTURE

While it is theoretically foreseeable that, because of the isolated nature of small islands, disease agents can be biologically controlled (Toohey, Goettel, & Pillai, 1981), this can be achieved only if human behavior is altered or controlled in ways that help to eliminate the disease hazards (Dunn, 1984). Bringing about behavioral changes is a difficult task, particularly in a limited environment where social and economic needs will continuously bring human and parasite into contact. Meanwhile, until proper detection and treatment methods are developed throughout Micronesia, geographical isolation also leaves island populations vulnerable to newly introduced epidemics.

A starting point for public health officials, educators, and academics should be the support and encouragement of research that helps to identify the existing problems and needs of Micronesian communities. Individuals and organizations that could undertake such research exist at regional, state, and community levels. At the regional level, the University of Guam's research units (the Micronesian Area Research Center, the Water and Energy Research Unit, and the Micronesian Language Institute) have facilities and staff capable of conducting health-related research. Some of these units already gather data (both directly and indirectly) that can be used toward developing preventive measures. The South Pacific Commission, the World Health Organization, and the federally funded Region IX Program are also concerned with health-related research in the Micronesian region.

State-level public health agencies that can participate in research efforts are the Department of Human Resources in the FSM, the Guam Department of Public Health, the Palau Ministry of Health Services, the Ministry of Health in the RMI, and the Health and Human Services agency in the CNMI. These agencies currently maintain health data for their respective island groups. At the community level, the island, district, and village health unit

staff members are the most knowledgeable about the health needs in their respective communities. Resident health care providers are usually the most familiar with the local environmental and cultural context.

Research needs range from identifying the incidence and prevalence of water-borne and water-associated diseases to developing community-specific prevention and control measures. Researchers should design new projects and review existing information to identify: (a) the distribution of water-borne and water-associated diseases in the islands; (b) the transmission routes (i.e., whether vector or animal transmitted, or via direct water contamination, or via human-to-human contact); (c) human behaviors that are directly and indirectly involved in the transmission process (i.e., social and economic activities); (d) changing environmental conditions that increase or reduce the risk of infection (i.e., population growth and drought-related impacts on water availability); and (e) cultural beliefs and practices that are associated with health-seeking behavior. In addition to the collection of data, research activities should include addressing the means by which to disseminate research findings, assisting public health officials in implementing effective prevention measures, and conducting program evaluations to identify ways to improve programs.

Beyond the goals of identifying problems and needs, research goals should also aim to offer environmentally appropriate and culturally acceptable solutions for disease prevention. Such contributions can enable policy and decision makers to develop more effective health measures and can also help to revise public health measures that are no longer applicable or to reinforce those that have been neglected. Research can also help to: (a) establish methods and techniques for systematic data collecting; (b) initiate collaborative efforts between islands; (c) design disease monitoring measures; (d) develop health education materials; and (e) evaluate existing programs and conduct follow-up studies on new programs. Specific areas in need of attention by public health officials, researchers, and academics are identified in the following section.

AREAS IN NEED OF STUDY

Island-specific and age-specific data on the incidence and prevalence of water-associated diseases in Micronesia are currently not available. The regional health offices compile annual morbidity and mortality statistics on specific diseases; however, these statistics do not include specific epidemiological

data as indicated by the 5-year health plans developed during the 1970s (see References: *Kusaie District* and *Ponape District 5-Year Comprehensive Health Plans).* These statistics are also unlikely to include disease data that are not *routinely* reported to medical authorities. For example, during the 1990 dengue fever outbreak in Kosrae, the actual number of cases observed and informally reported was much higher than what outpatient figures indicated (*Hospital Monthly Statistics Report,* 1990). A comprehensive study of disease distribution in Micronesia is needed.

The use and effectiveness of public health measures (i.e., sanitation programs and health education materials) also need to be evaluated. Environmental management programs, initiated under the former Trust Territory government (Keagy & Coddington, 1970), should be evaluated to determine whether they are meeting the changing needs of the islands. An increase in waste matter may be one way in which sanitation measures have been compromised; incomplete knowledge of the disease risks posed by improper sanitation may be another impediment. With the introduction of metals and plastics, the number of artificial breeding sites for several species of mosquitoes and fecal coliform bacteria has increased. The proliferation of artificial breeding sites has had the effect of redirecting prevention strategies to focus more on the immediate living environment (*Dengue Fever—Prevention and Control,* 1990). Human density has also increased, placing greater demands on natural resources such as fresh water. There is a need to identify suitable and culturally acceptable methods of waste disposal and other sanitation measures.

According to J. Benjamin (personal communication, 1990), education and prevention strategies for controlling infantile and childhood diarrhea in the FSM should be given the highest research priority. In October 1991, the number of infantile diarrhea cases was nearly half of the combined total of child-adult cases (*Selected Reportable Diseases Summary,* 1991, p. 1). Children's awareness of disease-causing organisms in their environment is probably very limited, but their continued exposure to such organisms contributes to reinfection. Ethnographic observations in Saipan, Pohnpei, and Kosrae indicate that children's activities often involve daily visits to the water sources closest to their homes and villages. Education measures are needed to help children and their caretakers learn about health hazards in their environment.

Another area that needs to be addressed by public health services is maternal and child health education. The *Marshalls Islands Women's Health*

Survey (Levy et al., 1989) serves as an example of how organizations such as the South Pacific Commission can become involved in targeting the health education needs of women and children. Women's organizations throughout Micronesia have been an active force in the health education needs of their communities. In Chuuk, women's groups provide an example of how women became active forces in the prohibition of alcohol in their islands (Marshall & Marshall, 1990). In the South Pacific island of Rotuma, village women's groups became the principal force in overseeing the prevention of trachoma among Rotuman children.[2] Because women are often the most stable members of a household and the primary providers of child care, they can play a very important role in disease prevention.

A final, critical need is the monitoring of potential disease transfers at the ports of entry. Although such monitoring is not a guaranteed control measure, it can help health officials prepare necessary precautions while allowing them to isolate and treat the source of infection. Proper detection and monitoring—and subsequent quarantine in the instance of dengue fever—may have prevented its introduction by a Taiwanese ship's crew to Palau in 1988 (S. Tsuda, personal communication, 1992). Kosrae has an active public health program that not only identifies individuals entering from cholera-infected areas, but also provides them with health care and monitoring during their stay on the island. This is a responsibility of the public health services on all of the individual islands. A health questionnaire administered at the ports of entry can identify individuals who are traveling from epidemic and endemic areas. Through cooperation with interisland health services (which can provide updates on disease occurrence), and by obtaining assistance from port officials and transportation agents, public health services can and should implement monitoring programs at all ports of entry. Guam, the busiest port of entry in all of Micronesia, currently does not require such information from travelers.

Along with the threat of actual disease occurrence, the potential spread of disease via the introduction of mosquito vectors by means of modern-day air and water transportation creates an additional problem in the islands (Prasad, 1986). *Ae. albopictus* is an example of a very successful migrant that was not found on Pohnpei and Majuro until the 1980s (Pillai & Ramalingan, 1984). Because of the reappearance of *Ae. aegypti*, Guam maintains an active dengue fever prevention program (see Haddock, Mackie, & Cruz, 1979).

CONCLUSION

Through a combination of improved sanitation, medical treatment, surveillance, and education measures, infectious and parasitic diseases have been nearly eliminated in most developed countries; similar efforts need to be made in Micronesia. Although this paper addressed only those diseases that involve water in the disease transmission process, public health measures are needed in Micronesia for the more general category of "communicable and infectious diseases." Among other communicable diseases affecting Micronesian children are whooping cough, diphtheria, influenza, infantile diarrhea, measles, and scabies. Recently, nine cases of newborn conjunctivitis were reported in the FSM (*Pacific Morbidity and Mortality Monthly*, 1989, p. 3). Diseases such as AIDS, gonorrhea, syphilis, and hepatitis B, all of which can be passed from mother to child at birth or during infancy, should also be addressed. A health survey of Marshallese women (Levy et al., 1989) revealed a high percentage of women who tested positive for both syphilis (an epidemic occurred in 1984) and gonorrhea. Health measures can be designed through a better understanding of human behavior and environmental awareness.

Acknowledgments

I wish to thank the several anonymous reviewers of this paper for their helpful comments and suggestions. An additional thank you is extended to Mr. Hibson Palik for compiling the inpatient/outpatient data on dengue fever and leptospirosis at Kosrae Hospital, and to Sally Tsuda of the University of Guam for providing resources and sharing her experiences as a health care provider in Micronesia.

Notes

1. An *Ae. aegypti* eradication campaign in 1948 was believed to have successfully eradicated this vector from Guam; however, mosquito collections between 1956 and 1970 revealed the presence of this vector throughout the island (Reisen, Burns, & Basio, 1972).

2. Trachoma is a highly infectious disease passed through intimate contact. It is important to note that globally there is a higher prevalence of trachoma among females than males. This is attributed to environmental and behavioral factors such as female infants receiving less care and young girls often being the caretakers of their younger siblings, thereby having greater exposure to the infection (Wilcocks & Manson-Bahr, 1978).

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On Education in Chuuk: Address by Petrus Mailo to the Students, Chuuk High School, October 1964[1]

Translator's Introduction. The following text has been transcribed and translated by Ward H. Goodenough with the collaboration of the late Boutau K. Efot. We present the text as actually spoken by Petrus Mailo. Thus some words appear in the form they take in Mwáán dialect rather than in the more widely accepted forms (e.g., *árámás* rather than *aramas* 'people, humans' and *kkapás* 'talk, speech'. Petrus also varied his pronunciation. We have edited the text only in the few places where apparent slips of the tongue or grammatical lapses (or our errors of transcription) obscured the obvious message being communicated. Such editing is shown in brackets in the Chuukese text that follows immediately after the Notes appended to the English text. We have kept the translation very close to the Chuukese to preserve as much as possible in English the flavor of Mr. Mailo's rhetorical style.

Good day to you all. I am glad to be with you today. First of all because you are called boys and girls. You belong to the fourth age rank in Chuuk. Below it are infants—"understand-nots."[2] That is what you used to be: understand-nots. This is the first reason I am glad to be with you. For that is the extent of what I shall be able to talk to you about: the meaning of the age rank called understand-nots.

The second reason I am glad is that I see you represent all of the people of the Chuuk lagoon. As the whole lagoon we are met together in this place: this island named Wééné [Moen], in this place name Wunuunganata.[3] There are also our comrades among you who have come from islands in Micronesia outside of Chuuk. We are very much united as brothers and

ISLA: A Journal of Micronesian Studies, 1:2. Dry Season, 1992, 261–75

as friends, united in our common desire to assemble here to do justice to the purposes that brought us here. That is why I am glad.

I meet with you today because I was invited to meet with you. I am not a suitable person. I have no understanding, I have no wisdom, and furthermore I don't perform well. I am just happy to meet with you on however many subjects I may be able to help you with through talk.

I also liked that song you selected [sung at the opening of the assembly], because the theme of its first verse was "Know what is truly said." That is the theme of the song's first verse: Know what is truly said. For what is truly said will gratify you. To explain: There is not a single kind of undertaking—whether it involves another person or something one intends to do—without talk first. Something is said first in discourse [to indicate] the undertaking, explain its purpose, and make known the means. Afterwards there is knowledge of writing, or there is knowledge of language, or there is knowledge of how to do all these things [that we must know how to do]. That is the title of the song's verse. It tells us that we should hold on to what they [who teach us] say. We should also give thought to how to marry it to what the American government has brought to our land.

I say just this bit about the song because I am glad to meet with you in regard to it. But in my inadequacy I am unable to speak to you on all kinds of things, for the extent of my ability is limited to what I learned from my father. And that is just what I want to talk to you about.

The second reason for speaking to you on the subject of this thing called understanding is because it is the task of that first age rank called understand-nots. The first thing we do with this first age rank is to make it understand. After it enters into the second age rank our tutelage diminishes. After it has reached the third age rank it is no longer under our tutelage. It is no longer under the rule of fathers and mothers. Proceed to the fourth age rank, and people do on their own according to their desires.

These are the named age ranks. One is understand-nots. Another is teenaged boys and teenaged girls. Third is young men [and young women]. Fourth is men [and women] in their physical prime. Fifth is senior men [and women].

It is to members of this age rank called understand-nots that we begin to give their first instruction in understanding. It is not possible for an understand-not to be born only today and have understanding [from the outset]. You will remember and you will have seen how at the time when an understand-not is born it just lies helpless when it is this size.

On, on, on, on, on, on until it is several months[4] old and it is able to move its limbs. We are not able to make it understand because its ears do not respond to talk.

On, on, on, it crawls, stands up a bit, and knows how to talk a little. That is the time when we teach it to understand, we fathers and mothers. We can indicate to it "Come here!" and it comes. We are able to tell it to go away, and it goes. We can call it to come and eat, and it comes to eat. That is the beginning of instruction in understanding among us humans, the beginning of it. That is enough to look for at that age rank.

On, on, and we are in the age rank of teenaged boys and girls. We have now grasped what we were taught [by our parents]. They can charge us, "Bring it here," and we do just that. Also, "Take it away," and we take it away. "Go fetch hither that food," and we do it. "You will cook the food," and we cook it because we are able to. Our fathers and mothers tell us and indicate to us, "You will this, you will that, you will this, you will that," and that is just how our understanding progresses.

On, on, until they are young men and women, and their fathers and mothers stop instructing them, stop exerting their authority over them; for they have their own ideas and have their own strength. They alone now rule their own persons. They discard a bit of that instruction in understanding. By the time half of it has been whittled away, they have become men and women in their physical prime. That is when their fathers discontinue correcting them, because they are afraid of them. For if they admonish them, they fight. They are able to beat their fathers and mothers. That is why, from the beginning of the peopling of our land long ago, it has been our custom that we instruct our children only when they are young. As soon as they have reached the third age rank, there is an end to their fathers' and mothers' talk.

So that is what I want to talk to you about: the time when we acquire this thing called understanding. We get this thing called understanding only in our childhood. Ascend to the time between young man and boy, young woman and girl—that is the time we have grasped understanding.

There has been instruction on how things are between me and my brothers. There has been instruction on how things are between me and my clan. There has been instruction on how things are between me and my island chief or district chief. Those are what they [my parents] gave instruction about. There has also been instruction about my locality; there has also been instruction about my trees; and also shown to me have been the tasks relating to food that I am to perform. Thus, when we are teenaged girls

and teenaged boys, that is just the time of our learning all these things that we are going to know how to do.

There are two divisions among us here in the islands of Chuuk. It has been that way from old. There are two divisions. There is a side of understanding and there is a side of not understanding. Those on the side of not understanding are able to learn in the direction of understanding. People do not learn the side of not understanding; there is no studying it. But the side of understanding is studied; we study it. The side of not understanding is not studied because that lack of understanding is there in our very core. The people of old marked well that your flesh, your blood, your mental processes, and your talk do not understand. You must learn understanding because it does not reside in your core. It does not reside in your flesh, you do not have it in your blood, you do not have it to say. Understanding we study; lack of understanding we do not study, for each [does] according to the nature of his whim. His whim just does its own thing and destroys his understanding. So I want to give you guidance so that you will learn the side of understanding while you are in school.

The realm of understanding contains several branches that comprise its contents. The first is sympathy. The second is agreeing together. The third is attentiveness. The fourth is effort. The fifth is care. The sixth ends off on understanding.

Understanding, understand it. The expression "understand it" contains several things within it. The first of its contents the people of old said is to understand your own person.[5] Now there are several things contained within our persons. First let us look at ourselves as humans. We should understand about our human person that there are two divisions in it. There are two divisions in our human selves.

The men of old used to say "Know your own person. Later you will know who people are, know the persons of your kinsmen, know the persons of your chiefs, know the person of your island chief." That is how things go that are contained in that expression "Know your own person."

What is it that we should know about our persons? There are two divisions to our persons. One we take delight in; the other we are ashamed of. That is something for you to understand. Understand your own person. Divide yourself from here and take the upper half: We wash our face, we pommade and comb, and we compose our facial expression so that people will admire it. We are pleased with the upper half, eh? But divide yourself downward, go downwards: We conceal it with clothing for we are ashamed

of it. Am I wrong? That is the first item: "Know your own person. Know your own person and the two parts therein."

Am I the only one to have two parts to myself? How about you? Eh? You, too, eh? So then we all have two parts to ourselves. How is it with me? Shall I laugh at you in connection with the one part [the lower part] and you not laugh at me? You will laugh at me, eh? That is something for us to "tie off" and not do. We should "tie it off" and not laugh at one's [lower] half, for it is established of old as a source of shame.

It is established of old that dividing upwards from here we take pleasure in it. Even though I am ugly, full of gaps in my teeth, and so on, yet I still compose my face, for I still have hopes, or isn't it so? But you? I have some companions in ugliness among you, too, and yet you comb and . . . , eh? Yes! This is why the original ancestors of humankind jointly examined their [children's] education; that man and that woman, they jointly investigated what they would tell their children:

> This is the first thing there is to be known: Know your own person. For about this we are just going to decide for ourselves: If we like to have another laugh at us when are naked or bare before him, then we shall do the same thing to another, or isn't it so? But if we dislike it, we won't do it.

That was what they decided.

As for these things I am going to talk to you about—I intended preparing as much as twenty points to give you, but I don't think I shall be able to cover them.

In this understanding things, there is a first thing to be understood: our own persons. Think first: "Know my own person first."

The second thing is: "Know my land." Where was it I was born? What is the name of my island?[6] What is the nature of its soil? What direction does the island face. East or west or south or north? I must early know my land. Even though I travel in all the islands, my own island will just remain in my head. No one can make me forget it. No one can induce me to let my island slip away from my head, by reason of that injunction: "Know your land." So how is it with you, you people from all those outer islands who have come to reside here? Is your island forgotten? Are you unmindful of it? You haven't forgotten it, for it just stays in your head. That is number two: "Know your land."

Number three: "Know your kin—your brothers, your fathers, your mothers, your clan." That is number three.

Long, long, long ago the names of the clans were established. Long ago they were established in two divisions. Two divisions! Those first people who lived in Wéénè [Moen] and had children, had twelve children, six female and six male. They made those two divisions; one division would be under the authority of the father, [and] the other division would be under the authority of the mother. In giving names to their children they would use indicators so that there would be an indicator of [a child's] father [or] an indicator of its mother. These two divisions have existed from old down to today. They would indicate a descendant of the woman in his [or her] name, and they would indicate a descendant of the man in the name they made. That is the source of the present rankings; they originated from the rankings they made.

The [injunction] to know all our kith and kin, know all our clans, and know all the people of our island is because there was that dual division that gave rise to the word "clan." It gave rise to the word "clan." The descendants of the man are the clans of that father; the descendants of the woman are the clans of that woman.[7] They made two divisions among them. One they declared to be descendants of chiefs or chiefly lineages. The other they declared to be descendants of wild hibiscus, or wild-hibiscus lineages.[8] You haven't heard this word "wild hibiscus" or "bush dweller"?[9] Eh? That's the division they made. A descendant of chiefs goes with that father. A descendant of bush dwellers goes with that woman. That is where this word [clan] began. There are children of chiefs and there are the children of wild hibiscus, children of bush dwellers. We in Chuuk are in two divisions originating from those ancestors of humans.

The names the father gave [his descendants] were to be made from the sources of the names of those clans, they were to stem from names of their clans.[10] That's how it was with the descendants of that man. The clans that were to be descended from that woman were to take [their names] from various things in the place called Wunuunganata:[11] names of wild plants, or names of stones, or names of whatever might be planted there. That is the origin of the several names that I shall enumerate. The [first] man's clan is Sópwunupi. The branches that branched out from it are Sowuyáney, Sowuwefeng, Sowuyéét, Sowusáát, Sowunuuk, Sowusatawan, Sowumwóóch, those that have *sowu-* at the [front] end.[12] These are the descendants of the man. But the several clans that descended from the woman took their names from the various leaves of wild plants or from various objects. That is the reason there is Méngúnúfach ['Pandanus Leaf'], which means: She gave birth under a pandanus. There is Pwereka ['Wild Yam'], which means: Spread

a mat with wild yam leaves [for the baby]. There is Asawa or Achaw ['Basalt'] because she gave birth among the rocks.[13] There is Wiisuusu ['Excoecaria Tree'], because she gave birth among the Excoecaria, among the smarting trees.[14] There is Fitaw ['Merremia Vine'] because she gave birth among the leaves of this wild plant, amidst this wild plant named Merremia vine. These are the divisions that divided off as clans of the woman. The *Ssow [sowu-]* divisions went forth as clans of the father. That is why we in Chuuk should know what happened from old down to the present; we should not get it mixed up.

Those two [ancestors of humans] agreed together how to lecture to their children, correct their children, and show them how to work. They kept their instruction the same. Their histories and lore were also the same, their histories and lore.

I have just told you these things in this way so they will be the same as they were from where I got them. I just got from my father what my father gave me. I couldn't make something up that he didn't give me. I couldn't tell lies.

So that is why that topic of understanding is number one [among the things to be] taught to us people. We should know our own persons; we should know our brothers, our clans, our chiefs, and all the people of our island; and we should know our land. That makes three of the contents [of what is to be understood].

Fourth is to understand the contents of the land, its soil, what the soil is; understand also the things in the soil, what the contents of the soil are, the trees that we plant; understand from what among the things in the soil we get the strength of our bodies, the fruits of the trees we should cultivate. The reason for understanding is this: That understanding knows all the things the hand performs and works at. Whatever it is we understand, whatever it is we understand, we do it, we work at it, because our body derives its capacity from it. But if we only understand it but do not work at it, we get no benefit from it.

The end of this speech is entitled "Understand what there is for you to do, for you to work at, for you to undertake." Don't reach beyond your grasp! That expression "Don't reach beyond your grasp," do you use it? What are its motions? Someone go through its motions. Like this, eh? If we don't get to it we have reached short. Or isn't it so? And stumbling goes with it. If I stumble, if my foot slips and I fall down, what has happened? I have gotten hurt. But do I get to it? I haven't gotten to it, eh? That's what

that [expression] means. That's what it means, and there are many things mixed up together in it.

The first thing is: Whatever there is capability from, whatever there is in our land, whatever comes to fruition on our land, whatever we are able to obtain from our land, these things we should undertake first. We should undertake them first. But what our land lacks, what does not come to fruition from our land [what we know] only the names, motions, or appearances of, in vain we shall reach short for them, reach short for them, reach short for them, and not achieving them, we shall fall sprawling in our attempt.

To explain: Coconuts there are; there are breadfruit, Cyrtosperma, Colocasia, all the varieties of food that we have, eh? There are also rice, bread, biscuits; there are all those things, too. Or isn't it so? What gets to the latter things? Eh? Money gets to them, eh? But what gets to Cyrtosperma, Colocasia, and so on?[15] Eh? Hands! Or isn't it so? Hands get to Cyrtosperma, Colocasia, breadfruit, and coconuts—hands alone. But what gets to bread, biscuits, all the kinds of food [that come] from the land of the white men?[16] Dollars! Dollars get to them. So, if today someone should think "I am going to eat Colocasia," he need only go plant it and in just the next month he eats. But if someone just thinks "I am going to eat bread," yet he doesn't work for dollars, can he get it? He doesn't get it. That's how it is: He slips and falls down in between [his desire and his goal]. For night and day he just thinks about reaching for what is beyond him—"I will eat it, I will eat it"; but he doesn't work with breadfruit and Colocasia. So, if he just thinks about how he will eat bread for dollars, [but] he doesn't earn dollars [and] he doesn't grow food, what will happen to him then? He falls down between them, eh? He's in a bad way. The right thing to do is to think, attend to, and understand: "Don't reach beyond your grasp." To explain this to you: Don't reach beyond your grasp for what you don't have, for what is far away from you, for what isn't very good for you. Rather, set in motion, work at, do what is available to you.

This was the termination of their [our ancestors'] education of their children. They had instructed them in the nature of work, instructed them in the nature of food, instructed them in the ways of producing food, instructed them in the ways to get fish, shown them how to make fishing gear; everything had been finished. But the termination of their words was "You shall do these things [we have taught you], and don't reach beyond your personal grasp lest you be in a bad way." That is how you are to think about this expression "Don't reach beyond your grasp." Reaching beyond your grasp is bad.

There are several other words that attach to this word "reaching beyond your grasp." Reaching beyond your grasp goes with covetousness; it goes with pushing above your station; it goes with . . . uh . . . let us say that this pushing above one's station contains a combination of disrespect for others and outright arrogance, eh? These things go with the expression "reaching beyond your grasp." For if we don't have something and push above our station, we will just take from someone else what we don't already have. It is much better for us to take what belongs to us than to take what belongs to another.

I cut off at this point. I am [now] going to talk to you about your school subjects.

Those first people held school [until] the time when their children had grown to be young men [and young women], until they made them strangers to one another so that they could marry one another and so have children and bring the clans into being. They continued to hold school until their children's children were chiefs in all the islands. Then they summoned their chiefly grandchildren and gave them instruction.

They gave instruction in the subject of people, the subject of soil, the subject of things in the soil, the subject of the sea, the subject of things in the sea, the subject of voyaging on the sea, the subject of island history, and the subject of strategy and tactics in war. In all these subjects they gave them instruction. The subjects of carpentry, house building, canoe making—in all these they gave them instruction. That's why you should be aware that they held school.

But what was it that they taught, that they taught of old? What was theirs! They didn't teach what was not theirs. They taught of old how to erect a house, how to plant it in the soil of their land; canoe building, how to make the various shapes of canoes; how to plant the trees of their lands, plant the food of their lands. These were the things they taught. That is why their chiefly children and their commoner children met together in school without any distinction. Commoners also entered their school. Therefore you will observe some titles that derive from the school held by that ancestor of humankind. He devised several titles, saying: master canoe-builder *(sowufanafan)*, master fisherman *(sowusèt)*, master house-builder *(sowowimw)*, master gardener *(sowutáánnipi)*, master of knot divination *(sowupwe)*, master of land lore *(sowufénú)*, master of spells *(sowurong)*. All of those that have the title *ssow (sowu-)* [are] from the ancestor of humans. Thus he gave them their mastery in their title *ssow*.

This is something that you are going to know more about, because all those titles are something you are going to inquire about a lot. I think that he who is experienced among you will know well that it is so, because that bunch of titles with *ssow* in them applies only to persons who are accomplished in performing those jobs. That is the series of specialities that derive from their school of old. From that time to the present we just keep using them.

Now I am going to clarify how this fits together with your schoolwork. It is well that you should study first the things that are already ours. I want [you] to take whatever of it will make your heads and your eyes capable, make your eyes observant, and mobilize your bodies to be successful in the white man's subjects. You must put them [the old and new schooling] together. You must put them together so that the schooling will be good. Because if you have just reached beyond your grasp for the white man's knowledge but let go of your own knowledge, you will have fallen in between. If it should be that you reach beyond your grasp only to make money, you will get it; but if from the beginning you let go of how to get your food, the money will not last. You will have managed to reach beyond your grasp. If you reach beyond your grasp in order to be in a high office among the offices of these white men here, but from the outset you have no land in these islands of ours, you will not survive. You cannot possibly prosper. For in the government a job assignment just hops from one person to another, whereas an assignment of soil cannot hop away.

I have put things together in this way so that you will seek back again what was in that school of old on these islands of ours. Add to it the things from America that should be joined and it makes two, eh? Together it makes two. In the subject of multiplication, two times two is what? Is it going to change? It will what? One times one? See! According to the people of old, they said, "One dies at the hands of two." Have you heard this saying? "One dies at the hands of two." For that reason, the Chuukese pattern of things, the Chuukese customs, the Chuukese ways, the Chuukese orientation, hold on to them! Take such American things as are suitable for us and put the two together. The result will be strong because one dies at the hands of two.

Do you comprehend what I am saying? You won't understand it very well because it is lisped and there is the path of an airplane in it.[17] That's why you are going to reinterpret what I have said for yourselves; for I shall not get in the way of what you are to study, as my object is only to explain your persons. For as persons we take life from the soil of our land. So do these Americans as persons take life each from his own locality. They come

here, but won't they also return to their own homes? Isn't this how their lives are realized? But we, we shall study [these American subjects] and, each returning to his home, attach them to what? We shall attach them to those [Chuukese things] there [at home]. That is the favor that I ask of you.

Twenty points I wanted to have ready [for this talk]. But as of now I haven't taken up one, for I am still just talking about my explanation. But it may be getting dark, and I am weary, for I am not well, and now, if you will permit me, I am all in a sweat from stage fright. For if I just stand for any length of time, I perish.

I am just going to beg of you that you let humility, mutual sympathy, mutual understanding, and mutual attentiveness into your school; for if they are present, your studies will stick. If there is love, if there is humility, if there is attentiveness, if there is understanding, your school subjects can stick. But one who does not store up [these virtues] because he stores up pushing-above-his-station and arrogance, eh?—what is in his breast? It is meanness and bad behavior that he stores up in his heart. He cannot acquire any school subjects because he will only do what he feels like doing in school and won't take care how he writes his lessons, his school work. Am I lying? That's how it is. Leaning an ear to it, that's what paying attention is. That's how you will really learn [your lessons]; for if humility, agreeableness, attentiveness, and understanding have entered, then you will study. You will study, because that is how it has been from old. That is how it has been with us from old. Study these four things I have enumerated as coming from the ancestors of humans.

I shall now go back again and take up the third theme from my talk.

The ancestors of humans undertook to instruct their sons and daughters in the subject of deference to superiors, in the subject of proper conduct to older men, in the subject of proper conduct to older women, in the subject of humility. They taught their children that younger men should not call older men by their actual names, they should not call to them by their names—their actual names. If someone calls to me . . . . It will be who among you who will have me as your chief? You, sir? Oops, no! You, indeed! If you would call out to me, you wouldn't call "Petrus!" at me. You wouldn't call me that. That is bad, insolent talk, arrogant talk in a superior way to our chief. We are not allowed to call by his actual name to one who is our superior. And the same holds for those immediately below, even if we are fifth or fourth in rank we should not call to those above by their names. We are not in a position to call them by name. One thing to say is "*Ee ko!*"[18] The same with [someone from whom we hold] our land. We announce ourselves to him

in the same way, so that he will just turn toward us. He will know what we are up to with him. That is one thing to say, one polite thing to say. Use it to rouse him so that he will turn his body and look at us. Use it for deferential reply when he calls to us, if he calls to us *"Meen!"*[19] But for one who is inferior or junior, whether woman or man, it is not permissible [to reply] "What?" One should just say *"Ee ko!"* That is the answer that is really polite, for they [the ancestors] did not want us to push above our stations even in talk. They did not want that talk should be insolent to persons of higher rank.

To go on to the subject of women. They did not like women to come to the outskirts of this building if men were inside this assembly hall. They didn't want them to approach or enter. But if they do approach, then they should just call hither from the road—if coming over there, they should call in "Are there men there?" And if they say that there are men there, then [the women should call] "We are now approaching and will they [the men] stand up." When they stand up, then they [the women] proceed.[20] That is what the people of old did. As to its meaning: They didn't want sisters to "trample their brothers under their feet," and they didn't want them to "dirty their brothers' faces." That is how to behave with humility and fellow feeling.

They [the ancestral man and woman] told the women that they were not allowed to prepare their brothers' food. It is forbidden of old. Only their aunts or mothers, only these could prepare their food. Later, once their sisters had had children, then these children were allowed to prepare the sisters' brothers' food. They did not want their sisters to handle their food. It was a violation of taboo with them—a sacrilege we should say, a sacrilege. So now that is how to behave deferentially.

Youths are not allowed to sit in this place over here [the stage or speaker's dais] if older men are seated beneath it. They are not allowed to take a higher position. If right now I were to stand up and Anúpich,[21] or whoever, was over there, I wouldn't get up. I wouldn't stand up and speak down on them. In times past that kind of thing was forbidden.

I want it to be your way of dealing with one another. For you are familiar with the topic word "human"—the topic word "human"—well, this is all wrapped up in it. This lecture [about] sympathy, mutual agreement, joint striving, mutual helping, let it remain with us! The topic word "human"—all of us now here dwell here in just that name as humans. Thus we discern that the name for him is "human," then we cherish him, look out for him, and give thought to how things are with him.

Hold on to those things. A person has bad thoughts in his heart or soils his heart if he knows that another is a human being, perceives from his appearance that he is human, and yet harbors evil thoughts toward him. If you see that another is human in his appearance and know that the topic word "human" applies to him, then it is good if you also know "Oh, a human being that, so I shall treat him as a human." In a meaningful saying are the words of the people of old: "Take care of people, help people prosper, [and] people will help you prosper, people will take care of you."

After all, only people work, only people sail, only people garden, only people fish, only people hold school. If there were no people, would there be school? Eh? See! Because there are people there is school. And if there weren't, there wouldn't be any school. That's the reason why "human" is a topic word. Think about it: "human." The entirety of all things owes its existence to humans [is what] you will think.

So I just ask of you that this be the end of my talk to you. For the twenty things I have prepared to present to you won't all come out, as there is no payment for them. For this food I am eating,[22] though actually my food from my father, is nonetheless bought, bought.[23] And that's no lie, eh? For these words are not something you have heard from your fathers. Aren't you hearing it for the first time today. That's the reason.

[We can] separate off there whoever has eaten it and separate off here whoever has not been fed by his father, because of the two divisions: one the children of chiefs and the other the children of bush dwellers. Isn't it so? Didn't you understand [me] earlier? Well, I am not a chiefly person; I am only in [this group of people who know these things] because I am a chief's son; but I am a bush dweller. I am a bush dweller. But I am in the [chiefly] ranks only because of being a chief's son.[24] Yet I am not a chiefly person, for I have sprouted from bush dwellers. So that is why I only heard these few words.

I want to be of help to you in what was the purpose these teachers had in asking me to meet with you. I am delighted to meet with you in order to give you common purpose and show you how it has been among us from old times and ever thereafter. Give thought to what you are to select from my talk that is fitting. But let what is unfitting fall out. Give thought also to what is suitable for addition to your studies. Also let fall out what is not suitable for attachment to your studies. That is what I ask of you.

Thank you very much. Perhaps this is enough, for night has come upon us. You have been sitting for a long time at your studies. Your heads are burdened; but may they not continue to be overly burdened because of me [so that] tomorrow you are poor scholars. That's all.

Notes

1. The traditional chiefly arts of Chuuk comprised the body of knowledge called *itang*. They included rhetoric, history, war, diplomacy, and divination. One of those highly skilled in these arts was the late Petrus Mailo, the high chief of Wééné (Moen) Island and also its first elected magistrate (or mayor), an office he held until his death in 1972. On the opening of Chuuk's first intermediate school's assembly hall in the early 1950s, he gave a memorable dedicatory address, described by Thomas Gladwin in a biographical sketch of Mr. Mailo (Gladwin, T. 1960. Petrus Mailo, Chief of Moen. In J. B. Casagrande, *In the Company of Man*, pp. 40–62. New York: Harper & Brothers). In October 1964, Mr. Mailo again addressed the students in the same place, at what had become Truk (Chuuk) High School, then the only public high school serving all of Chuuk and the atolls outside of Chuuk, in what was then the Truk District of the Trust Territory of the Pacific Islands (now Chuuk State in the Federated States of Micronesia). Mr. Peter Hill, then Chuuk's Director of Education, asked the translator to transcribe a tape recording of Mr. Mailo's speech and translate it for the benefit of the Americans on the school teaching staff. It is a fine example of public speaking, as then practiced in Chuuk, in organization, style, humor, moral concern, and occasional indirect political allusion.

2. A standard Chuukese word for infant is *semiriit* 'understand-not', and much of what follows is about *miriit* 'understanding' in the sense of knowledge of why things are as they are and, from this, knowledge of what is good or suitable as against what is not good or is unsuitable. *Miriit* implies moral enlightenment or social understanding as well as understanding of things and how they work.

3. The site of the lineage cooking place (*fanang*) of Sowuwóóniiras, highest ranking chiefly title in the Sópwunupi school of *itang* lore. According to this school, Sowuwóóniiras was the ancestor of Chuuk's chiefly clans. In this talk, much time is devoted to the original ancestors in Chuuk, of whom Sowuwóóniiras was one, and to the kind of schooling they gave to their children. That the Trust Territory government and the high school were located on the site where Sowuwóóniiras maintained his *fanang* was a coincindence of whose symbolic value Petrus was obviously aware. Hence his calling attention to the place.

4. "Years" in the original text, evidently a slip of the tongue.

5. *Miriitiiy inisumw* 'understand your person' can also mean 'understand your body'. In Petrus Mailo's talk it seems to refer to both person and body simultaneously.

6. *Fénúwey* means both 'my land' that I inhabit and cultivate and 'my home island'. The reader should understand that what is sometimes rendered in English as 'land' and sometimes as 'island' is one and the same word in Chuukese.

7. *Mwirimwirin*, here is translated as 'one's descendant', also means 'one's follower', literally 'one who comes after'. The clans, whether derived from the original man or from the original woman were and continue to be matrilineal in their membership.

8. *Sinifféénúwén* 'wild hibiscus' ordinarily means a person of very low social degree.

9. *Kichinúwén* or *Kichiniwén* 'frequenter of the bush' is a term of genuine opprobrium, even more forcefully so than *sinifféénúwén*. This reference to bush dwellers relates to the clan names.

10. Reference is made here to places of origin, or places where the clan had rights of chiefship.

11. Again reference is made to the place where Sowuwóóniiras maintained his lineage hearth *(fanang)* and where his clan mates worked to prepare food for festival occasions, the place that had become the site of the high school.

12. *Sowu-* may be translated as 'master of' or 'proprietor of'. All these names involve places or regions of which the clan is presumably master or proprietor. Thus the Sowupwonowót clan, not mentioned here, is a chiefly clan in Puluwat Atoll, and its name means 'master (proprietor) of Puluwat', an island in that atoll. This pattern of clan names is characteristic of the atolls around Chuuk, but it is not presently characteristic of Chuuk itself, where the *sowu-* clans are sparsely represented, if at all, or drop the *sowu-* prefix (e.g., Mwóóch), and where they have no relation locally to chiefly rank.

13. Its members claim to be the descendants of people who came from Achaw (or Kachaw), a placed in the sky world that is prominent in Chuukese and Pohnpeian lore, erroneously associated with Kosrae Island shortly after European contact. (See Goodenough, W. H. 1986. Sky World and This Wrold: The Place of Kachaw in Micronesian Cosmology. *American Anthropologist, 88,* 551–568.)

14. *Owusuus* 'causing to smart' is also a name of this tree because of its irritating sap.

15. Cyrtosperma (*pwuna*) is the giant swamp taro, and Colocasia (*woot*) is the smaller true taro.

16. The term *Wóón,* here translated as 'white men' in such expressions as *fénúwen Wóón* 'lands of *Wóón'* and *ree-Wóón* 'people of *Wóón'* derives originally from a name for Guam (*Guahan* or *Guahon)* in Chamorro. The people of *Wóón* were not only the Chamorros but, more importantly, the Spaniards, with whom the Central Carolinian people traded. The term was subsequently extended to all people who came in from the outside, at first bringing guns and other trade goods, and then colonial rule: Europeans, Japanese, and Americans.

17. Reference here is to the gaps in his teeth.

18. *Ko* is a polite particle used in addressing men, equivalent to the English 'sir'.

19. *Meen* in other contexts means 'thing'. It serves as a permissible substitute for the personal name in addressing someone to whom one is not obliged to show deference.

20. In traditional behavior, adult sisters were not allowed to stand above or be physically higher than their adult brothers, nor were fathers allowed to stand above their adult daughters; hence the request for the men to stand so that the women could pass by.

21. Petrus's older brother Albert.

22. Stock metaphor for the lore that is being revealed.

23. Petrus's knowledge of *itang* lore was purchased from his father, a famous *itang.*

24. Chiefship follows matrilineal clan and lineage lines—from older brother to younger brother to oldest sister's oldest son—and does not ordinarily pass from father to son, except when the matrilineal line is unable to supply a suitable person.

Ámmiriit Nóón Chuuk:[1] Áán Petrus Mailo we Afanafan Wóón Ekkewe Chóón Sukuun, Chuuk High School, October 1964[2]

Ráán annim áámi meyinisin. Wúwa fóókkun pwaapwa chuurikemi nóón eey ráán ikenáy. Eewin, pwún itemi áát, nengngin, o nómw nóón érúwáánúún tettenin iit nóón Chuuk. Faan semiriit. Ina itemii-we: semiriit. Ina eewin ááy pwaapwa chuurikemi; pwún epwe ina wúkúúkiy ááy wúpwe toongeni kkapás ngenikemi wóón wúkúúkun ewe tetten itan semiriit.

Oruuwuwen ááy pwaapwa pwokiten wúwa nnengenikemi aa wunusen aramasen nóón Nómwun Chuuk. Wunus siya chuffengen nóón neeniyach eey: eey fénú itan Wééné, nóón eey neeni itan Wunuunganata.[3] Aa pwayi wor chiyenach kkana meyi feyitto mé wóón fénúwen núkún Chuuk nóón Nómwun Mayikroniisiya. Siya fóókkun epwiipwi ffengen ika ttong fengen, tipeyeew ffengen aach sipwe nónnómw ffengen nóón aach eey neeni reen fééri pwúngún meet pwopwun aach feyitto nóón eey neeni. Ina pwopwun ááy pwaapwa.

Iwe, wúwa chuurikemi ikenáy pwokiten meyi wor tingor ngeniyey wúpwe chuurikemi. Ngaang emén árámásángngaw. Esoor ááy miriit, esoor ááy tipachchem, ese pwan wor ááy angaangééch. Wúwa chék pwaapwa mwochen chuurikemi nóón fituuw peekin ááy mwmwar ánisikich reen kkapás.

Wúwa pwan meefi ewe kkéén owa finnáátá, pwún itenapen ewe eew wuwokisin kkéén "Sineey Kkapasennet." Ina itenapen ewe eew wuwokisin kkéén: "Sineey Kkapasennet." Pwún kkapasennet epwe angasaakemiinó Áweewe: ese mwoo wor óóch angaang—ika emén árámás ika óóch féfféér

ISLA: A Journal of Micronesian Studies, 1:2. Dry Season, 1992, 277–88

emén epwe fééri—ika ese ókkoomw kkapás. Kkapás ókkoomw neeyafanafan ayit ngeni, emiriit ngeni, áweeweengeni. Mwirin epwapw wor sineey makkeey, ika epwapw wor sineey kkapás, ika epwapw wor sineey fééri ekkeey angaang meyinisin. Ina itenapen ewe wuwokisin kkéén. Aa apasaangenikich pwe sipwe émwéchú minne raa árá. Sipwe pwan ekiyekiiy wo épwúpwpwúnúú-ffengeniiy me ewe mwuun Merika aa toorikich nóón fénúwach.

Ina wú chék ekis kkapasanó wóón ewe kkéén. Ina minne wúwa mmén pwaapwa chuurikemi reen; ngé nóón ááy wúkúngngaw wúse toongeni wúpwe afanafanaakemi wóón sóókkun mettóóch meyinisin, pwún meet chék wúkúúkún ááy toongeni seni ááy kkayééseni semey. Inaa chék wúwa mwochen wúpwe kkapas ngenikemi wóón.

Oruuwuwen ááy wúpwe kkapasanó wóómi nóón kkapásin ewe mettóóch itan miriit pwún ina wiisen ewe eewin tetten itan semiriit. Eewin tetten nóómw si emiriiti. Toonong nóón oruuwuwen tetten, aa kisikiis aach ámmiriit. Aa éwúnúngátin tetten, ese chchiwen nómw fáán aach ámmiriit. Ese chchiwen nómw fáán nemenemen saam me iin. Toori aa érúwáánúún tetten, raa pwisin fééri meet aar mwochen.

Ina kkewe tettenin iit. Eew, semiriit. Eew, énúwén-áát, féépwúnnengngin. Éwúnúngátan, énúwén. Érúwáánúún, énúmaaw. Enimuuwan, mwáán.

Iwe, nóón eey tetten itan semiriit, ina si pwopwutá ngeniir nóómw kkapásin miriit. Ese toongeni wor emén semiriit epwe toongeni wupwutiw chék ikenáy aa miriit. Opwe chechchemeni pwan nnengeni nóón eey faansowun emén semiriit aa wupwutiw e chék ikkitinó nupwen aan iyeen nénnéén.

Feyinnó, feyinnó, feyinnó, feyinnó, feyinnó, feyinnó toori aa fituuw maram[4] aa tongeni mwékútúkút. Sisaa mwo toogeni emiriiti pwú seningan esaa mwo rong kkapas.

Feyinnó, feyinnó, feyinnó, aa ténnaw, ekis wúútá, aa sineey ekis kkapás. Ina ótun siya emiriiti, saam me iin. Siya toongeni ayit ngeni, "Feyitto!" Iwe aa feyitto. Siya toongeni éreni pwé "Feyinnó!" Aa feyinnó. Siya toongeni kkééri pwé "Etto mwéngé!" Aa etto mwéngé. Aa ina pwopwutáán emmiriit reen kiich aramas, neepwopwutáán. Ina opwene chék kúna me ikena.

Feyinnó, feyinnó, siya nómw nóón ewe iten énúwén-áát, féépwúnnengngin. Iwe, siya kkémwéch ewe emmiriit. Raa toongeni ékkúnééngenikich "Waato!" Inaa chék. Pwan "Wóónó!" Siya wóónó. "Kepwee nó waato enaan mwéngé!" Siya fééri. "Kepwe ómmoota mwéngé!" Siya ammoota pwún siya pwáák. Ngé ewe saam me iin raa chék kkapás ngenikich me ayit ngenikich "Kepwe iyeen, kepwe iyeen, kepwe iyeen, kepwe iyeen." Aa ina feyinnóón ewe miriit.

Feyinnó, feyinnó toori énúwén mé féépwún, e sópw saam me iin raa emiriit ngeniir, e sópw raa pwisin nemeniir, pwún aa wor aar-we ekiyek, aa wor aar péchékkún. Raa pwisin nemenii chék inisiir-we. Raa ekis kiniiyenó ewe emmiriit. Aa ina faansowun aa pékúnó esópw toori raa énúmaaw, finemaaw. Iwe aa ina kkoturunóón áán saam ffénéngeniir pwú raa niweyitiir, pwú re fénéér raa fiyuuw. Raa toongeni nniiy semeer me ineer. Ina pwopwun, pwopwutáán aramásin fénúwach seni nóómw nóómw, aach éreni si chék emiriiti néwúch nupwen aar kisikiis. Feyittá re chék toori éwúnúngátin tetten, aa wees áán saam me iin kkapás.

Iwe, ina minne iyeey wúwa mwochen ayit ngenikemi faansowun aach angeey eey mettóóch itan miriit. Siya angeey eey mettóóch itan miriit senii chék neekúkkúnúch. Feyittá nóón ewe neefiinen énúwén áát, féépwún nengngin, iwe ina ótun siya kkémwéch ewe miriit.

Aa wor emmiriitin neefiinen ngaang me pwiiy. Aa wor emmiriitin neefiinen ngaang me eyinangey. Aa wor emmiriitin ngaang me sómwoonun ááy eyinang. Aa pwan wor ayit ngenney ngaang me sómwoonun fénúwey ika sómwoonun sópwiy. Ikkana raa ááni emmiriit. Aa pwan wor emmiriitin neeniyey; aa pwan wor emmiriitin ááy irá; aa pwan wor ayitingeniyey ewe angaangen mwéngé wúpwe fééri. Iwe, seni ewe féépwún-nengngin me énúwénáát inaa chék faansowun aach kkayé kkewe meyinisin sipwene sineey.

Aa wor ruuwu kinikin neefiinach wóón nómwun nóón Chuuk. Seni nóómw meyi fféér. Ruuwu kinikin meyi wor. Meyi wor eew peekin miriit, meyi wor eew peekin ese miriit. Iwe, ewe peekin ese miriit iir meyi toongeni kkayé ngeni ewe peekin miriit. Ewe peekin ese miriit rese kkayé; esoor osukuunan. Ewe peekin meyi miriit meyi wor osukuunan; si osukuuna. Peekin ese miriit ese sukuun, pwopwun meyi chék nómw neewutuch ewe mettóóch ese miriit. Chóón nóómw meyi makkeey pwe futukumw, chchaamw, ekiyekumw, óómw kkapás rese miriit. Kepwe kkayé miriit, pwún ina ese nómw neewutumw. Ese nómw nóón futukumw, kese chchaani, kese ááni kkapás. Ewe miriit si osukuuna, ewe ese miriit sise osukuuuna, pwún emén me emén nóón fowutan nóón aan ekiyek. Aan ekiyek e chék pwisin fééri inisin-we, ataayenó aan miriit. Iwe wúwa mwochen emmwen ngenikemi pwú opwene kkayé ewe peekin miriit nóón faansowun áámi nónnómw nóón sukuun.

Ewe peekin miriit aa nónnómw nóón fituuw kkeyang meyi ómmósow nóón. Eewin ttongoffengen. Oruuwuwan tipeyeew ffengen. Éwúnúngátin áneyachoochis. Érúwáánúún óchoocho. Enimuuwan túmwúnú. Owonuuwan wúkúnó wóón miriit.

Miriit, miriitiiy. Ena kkapás "miritiiy" aa ómmósow fáán fituuw. Eewin ómmósow, chóón nóómw raa apasa pwé "miriitiiy inisumw." Iwe, nóón óm-

mósowen inisich-we meyi wor fituuw nóón. Eewin sipwe nnengenikich aramas; sipwe miriitiiy inisich aramas pwe meyi wor ruuwu kinikin nóón. Meyi wor ruuwu kinikin nóón inisich árámás.

Ree-nóómw re árá pwé, "Miritiiy inisumw." Mwirin kepwapw miriitiy inisin aramas, miriitiiy inisin futukomw, miriitiiy inisin óómw sómwoon, miriitiiy inisin sómwoonun fénúwomw. Ina ómmósowunó nóón na "miriitiiy inisumw."

Meet ewe sipwe miriitiiy me wóón inisich? Inisich meyi wor ruuwu kinikin nóón. Eew si ááni amwaaraar; eew si ssááw reen. Ina opwene miriitiiy. Miriitiiy inisumw. Kiniiy me ikaan, ásápáátá, si woresi mesach, epiti, koomweey, fééri menimenich pwún aramas repwe ingeyiti. Siya pwaapwa reen, áá? Ngé kiniiyetiw, feyittiw, si pwénúúw ngeni mangaaku pwú si ssááw reen. Meyi mwmwáán? Ina nampa eew ómmósow "miritiiy inisumw." Miriitiiy inisumw, ruuwu kinikin nóón.

Ngaang chék epwe ruuwu kinikin nóón inisiy? Ngé áámi, áá? Pwan áámi, áá? Iwe, kiich meyinisin meyi wor ewe ruuwu kinikin nóón. Ifa wusu ngaang? Wúpwe takiriikemi reen ewe eew kinikin, ngé áámi osapw takiriiyey? Opwe takiriiyey, ee? Ina sipwe féétóónó sisapw fééri. Sipwe féétóónó sisapw takiriiy esópw emén, pwún meyi fféér seni nóómw meyi ássááw. Meyi fféér seni nóómw pwé kinikinitá seni ikaan sipwe ááni amwaaraar. Mesengngaw mwo ngaang, túttúnúkkis ngiiy, meet akkaan, ngé pwan fééri menimeniy pwú pwan itá, ika sapw ina? Ngé áámi? Meyi pwan wor chiyeney mesengngaw neeyiimi, ngé pwan koomweey ngé....áá? Wúú! Ina pwopwun ekkewe pwopwun árámás iir meyi osukuuna-ffengeniiy aar kkayé; ewe mwáán ewe feefin iir meyi osukuuna-ffengeniiy meet repwene wúreni néwúúr kkewe:

> "Iyeey nampa eew miriitiiy meet meyi wor: miriitiiy inisumw. Pwún ikana sipwenee chék éwúkúúk me reech. Ika si efich emén epwe takiriikich aach sipwe seneenó ika fanang seneeng fáán masan, iwe sipwe pwan féér ngeni emén, ika sapw ina? Ngé si opwut, sisapw fééri."

Ina raa fééri.

Ekkeey kkapas wúpwe ngenikemi—itá wú ómónnaatá nóón wúkúúkún rúwe tetten wúpwe ngenikemi, ngé wú ekiyekiiy wúsapw nnaaf ngeni.

Nóón eey miriitiiy aa wor eew eewin ómmósow: inisich. Ekiyekiiy nóómw, "miriitiiy nóómw inisiy."

Oruuwuwan, "miriitiiy fénúwey." Iyaa-we wu wupwutiw me iye? Ifa iten fénúwey? Ifa napanapen pwpwúnún? Ifa kukkunnun ewe fénú? Meseeráán ika epiinen ika éér ika ennefen? Wúpwe miriitiiy nóómw fénúwey. Wúpwee mwo feyin-fátán wóón fénú meyinisin ngé fénúwey-we epwe chék nómw neemék-

úrey. Emén esapw toongeni epwe orukóónó. Emén ese toongeni epwe orukóónó fénúwey-we me neemékúrey pwún ewe kkapás "miriitiiy fénúwomw." Iwe, ifa wusun áámi, áámi chóón fénúwach-kkewe núkún meyinisin owa etto nómw ikeey? Meyi namanó fénúwemi? Áámi meyi ménnúúki? Ose ménnúúki, pwún meyi chék nómw neemékúremi. Ina nampa ruuwu: "miriitiiy fénuwomw."

Nampa wúnúngát: "miriitiiy futukomw—pwiimw, somwomw, inomw, eyinangomw." Ina nampa wúnúngát.

Seni nóómw, nóómw, nóómw, nóómw meyi ffeér iten ewe eyinang. Seni nóómw aa fféér nóón ruuwu kinikin. Ruuwu kinikin! Ekkewe pwopwun árámás re nómw nóón Wééné, raa néwúnéw, néwúni néwún kkewe engoon me rúwémén, wonomen feefin wonomen mwáán. Iwe, raa fééri ekkewe ruuwu kinikin: eew kinikin epwee nómw fáán nemenemen ewe saam, eew kinikin epwee nómw fáán nemenemen ewe iin. Aar repwe fééri iten néwúúr-kkewe repwe ááni esissin, pwe epwe esissin seni saman esissin seni inan. Ekkewe ruuwu kinikin aa fis seni nóómw toori ikenáy. Mwirimwirin ewe feefin repwe eti nóón itan; mwirimwin ewe mwáán repwe eti nóón ewe iit raa fééraatá. Ina pwopwun ekkeey etetten raa pwopwuseni ekkewe etetten raa fééri.

Ewe miriitiiy attongach meyinisin, pwan miriitiiy eyinangach meyinisin, miriitiiy chóón fénúwach meyinisin, pwún aa wor ekkewe ruuwu kinikin aa fééri ewe kkapás itan eyinang. Aa fééri ewe kkapás itan eyinang. Mwirimwirin ewe mwáán eyinangen ewe saam, mwirimwirin ewe feefin eyinangen ewe feefin. Raa fééri nóón ruuwu kinikin. Eew raa apasa pwé mwirimwirin sómwoon ika tettenin sómwoon. Eew raa apasa pwé mwirimwirin sinifféénúwén ika tettenin sinifféénúwén. Ose rong eey kkapás? Sinifféénúwén ika kichinúwén? Áá? Ina re fééri nóón. Mwirimwirin sómwoon epwe eti ewe saam; mwirimwirin kichinúwén epwe eti ewe feefin. Ikena aa fis me iye eey kkapás. Meyi wor néwún sómwoon, meyi wor néwún sinifféénúwén, néwún kichinúwén. Kiich wóón Chuuk meyi ruuwu kinikin pwopwuseni ekkewe pwopwun árámás.

Ekkewe iit ewe saam aa fééri epwe fféér seni pwopwun iten ekkewe eyinang; epwe pwopwuseni iten aar eyinang. Iwe, ina mwirimwirin ewe mwáán. Ekkewe eyinang epwe mwirimwirin ewe feefin epwe angeey seni iten ekkóóch mettóóch nóón eey neeni Wununganata: iten pétéwén ika iten faaw ika iten meet epwe fótukaatiw wóón. Ina pwopwun aa wor ekkóóch iit wúpwe chék ánneyáání. Ewe mwáán aan eyinang Sópwunupi. Ekkewe kkeyang epwe kkeyang seni: Sowuyáney, Sowuwefeng, Sowuyéét, Sowusáát, Sowunuuk, Sowusatawan, Sowumwóóch, ekkewe sóókkun meyi "sowu-" neesópwónóón. Ina mwirimwirin ewe mwáán. Ngé ekkewe ekkóóch eyinang

mwirimwirin ewe feefin aa féér seni ekkóóch chéén pétéwén ika ekóóch mettóóch. Ina pwopwun aa wor Méngúnúfach; áweeweengeni: e néwúnéw fáán faach. Aa wor ewe Pwereka; áweeweengeni: ekiyekiyaangeni ewe chéén Pwereka. Aa wor ewe Asawa ika Achaw pwokiten e néwúnéw neeyin ewe faaw.[5] Aa wor Wiisuusu pwokiten e néwúnéw neeyin ewe wiisuusu, neeyin ewe owusuus irá. Aa wor ewe Fitaw pwokiten e néwúnéw neechéén eey pétéwén, neeyin eey pétéwén itan fitaw. Ina ekkana kinikin aa kinikininó eyinangen ewe feefin. Ekkewe kinikin Ssow aa feyinnó eyinangen ewe mwáán. Ina pwopwun kiich nóón Chuuk sipwe chék miriitiiy meet aa fis seni nóómw toori iyeey; sisapw efitikookoow.

Iir me rúwémén meyi tipeyeew ffengen afanafana néwúúr, fénééw néwúúr, ayitiir angaang. Eew chék aar kkayit. Aar-we pwan wuruwo pwan eew chék, aar wuruwo.

Ina wúwa chék ngenikemi ekkeey, pwún epwene weeweeseni iya eey wúwa angeey me iye. Wú chék angeey seni semey meet semey aa ngeniyey. Wúse toongeni wúpwe efisaatá óóch ese ngeniyey; wúse toongeni wúpwe mwakenetá.

Iwe, ina pwopwun ewe kkapás miriitiiy nampa eew ffén ngenikich árámás. Sipwe miriitiiy inisich; miriitiiy pwiich, eyinangach, néwúch sómwoon ika chóón fénúwach meyinisin; miriitiiy fénúwach. Aa wúnúngát ewe ómmósow.

Érúwáánúún, miriitiiy mósowen fénú, pwpwúnún fénú, meet ewe pwpwún; pwan miriitiiy mósowen pwpwún, meet ewe mósowen pwpwún, irá sipwe fótuki; miriitiiy tuufichin inisumw seni meet seni mósowen pwpwún, wúwáán irá sipwe fééri. Ina pwopwun ewe miriitiiy: aa sineey ewe miriitiiy mettóóch kkewe meyinisin ewe paaw aa fééri, aa angaang ngeni. Minne siya miriitiiy, minne siya miriitiiy siya fééri, siya angaang ngeni, pwún epwe tuufich inisich reen. Ngé ikaa pwé siya chék miriitiiy ngé sise angaang ngeni, sise tuufich reen.

Sópwónóón eey afanafan itan "miriitiiy meet meyi wor reemw kepwe fééri, kepwe angaang ngeni, kepwe ááni." Kete éessong! Ena kkapás "kete éessong" meyi wor reemi? Ifa pwomwan? Emén epwe pwomweni. Iyeen, ee? Sise toori siya pwaan éessongeey. Ika sapw ina? Iwe, e nómw ikenaan éwúnnang. Éwúnnang ngaang, mit pecheey, turutiw, aa feet? Wúwa feyiyengngaw. Ngé wú toori? Wúse toori, áá? Ina ena áweewe. Ina ena áweewee, aa efitiyaar chóómmóng ómmósow nóón.

Eewin ómmósow: meet epwe pwáák reen. Meet meyi nómw nóón fénúwach, meet i fisitá me nóón fénúwach, meet si tuufich seni me nóón fénúwach, sipwe fééri nóómw. Sipwe nóómw fééri. Ngé meet esoor me nóón

fénúwach, meet ese fisitá me nóón fénúwach, itan chék ika pwomwan me napanapan, sipwe wetin ééssonga, ééssonga, ééssonga, sise toori sipwe turunó nóón.

Áweewe: nuú meyi wor, maay meyi wor, pwuna, woot, sóókkun mwéngé meyinisin meyi nómw reech, ee? Rayis aa pwan wor, pinawa, pisiket, ekkana meyinisin aa pwan wor. Ika sapw ina? Meet e toori ekkewe, áá? Mwooni e toori, ee? Ngé meet e toori pwuna me woot me? Áá? Paaw! Ika sapw ina? Paaw e toori pwuna, woot, maay, núú—paaw chék. Ngé minne e toori pinawa, pisiket, ekkewe sóókkun mwéngéén fénúwen Wóón meyinisin? Maak! Maak e toori. Iwe, ikenáy emén epwe ekiyekiiy pwe "Ngaang wúpwe mwéngé woot," epwe nóó chék fótukaatiw, nóón chék een maram aa mwéngé. Ngé emén epwe chék pwan ekiyekiiy pwé "Wúpwe mwéngé pinawa," ngé ese angaang ngeni maak, epwe angeey? Ese angeey. Ina, aa mititiw aa turutiw neefinan. Pwún aa chék ekiyekin ééssongeey neepwin neeraan "wúpwe mwéngé, wúpwe mwéngé," ngé ese angaang ngeni ewe maay mé woot. Iwe, ekiyekiiy chék pwé epwe mwéngé pinawa mesen maak, ese toori ewe maak, ese fééri ewe mwéngé, iwe meet epwe chchiwen féér? Aa turutiw neefinan, ee! Aa wosupwpwang. Ina angaangéech: ekiyekiiy, túmwúnúúw, miriitiiy "ote ééssongeey." Áweeweengenikemi eey: ote ééssongeey meet esoor reemi, meet meyi toowaaw senikemi, meet ese nniyen mwirinné ngenikemi; ngé opwe émwékútú, angaanga, fééri meet meyi nómw reemi.

Iyeey sópwónóón aar emiriit ngeni néwúúr kkewe. Raa fénééw ngeniir kkóótun angaang, fénééw ngeniir kkóótun féérún mwéngé, ayit ngeniir kkóótun attaw, ayit ngeniir kkóótun angaangen pisekin attaw; meyinisin aa wees. Ngé sópwónóón eey kkapás "kepwene feeri ekkena ngé kete ééssong wóón inisumw pwún kete wosupwpwang." Ina opwene ekiyekiiy eey kkapás itan "kete ééssong." Ééssong meyi ngngaw.

Ena kkapás "ééssong" aa wor fituuw kkapás aa kkapach ngeni. Ééssong aa fiti mwocheniya, aa fiti namanam tekiya, aa fiti...éé...sipwe érá eey namanam tekiya meyi chék chuffengen mwááneyas me mwááneson nóón, ee? Ikkena aa fiti ewe kkapás itan ééssong. Pwún minne esoor reech ngé siya namanam tekiya, sipwe angeey pisekin emén ngé ese fen wor reech. E fen ééch sipwe angeey pisekich nap seni aach sipwe angeey pisekin emén.

Wúwa pékúúw me ikeey. Wúpwene ngenikemi nóón pisekin áámi sukuun.

Ekkewe árámásin nóómw iir meyi fééri sukuun [toori] faansowun néwúúr-kkewe raa énuwén, [féépwún,] toori oruka-ffengeniir pwe repwene pwúpwpwúnú-ffengen pwú repwe néwúnéw pwú epwe fis eyinang. Iwe, raa

fééri ewe sukuun toori néwún néwúúr-kkewe raa sómwoon nóón fénú meyinisin. Iwe, raa kkéériir newúúr-kkewe sómwoon raa osukuuneer.

Aa wor aar osukuunen peekin árámás, peekin pwpwún, peekin mósowen pwpwún, peekin neemataw, peekin mósowen neemataw, peekin fátánin neemataw, peekin wuruwoon neefénú, peekin wiimóówun. Peekin ekkena meyinisin aa wor aar osukuuna ngeniir. Peekin angaang kaamwété, kkéwú iimw, fanawa, ekkena meyinisin aa wor aar osukuuna ngeniir. Ina pwopwun epwe miriitiiy pwé meyi wor aar sukuun.

Ngé meetaa-we re osukuuna, re osukuuna nóómw? Minne e wor reer! Rese osukuuna meet esoor reer. Re osukuuna nóómw kkéwú iimw, kkéwúútiw neepwpwúnún fénúweer; fanawa, fana sóókkun napanapen waa; fótuki iráán fénúweer, fótuki mwéngéén fénúweer. Ina raa osukuuna. Ina pwopwun meyi wor aar osukuun emwiicha-ffengeniiy néwúúr sómwoon pwan néwúúr árámás ese nifinifin. Árámás meyi pwan toonong nóón aar sukuun. Ina minne opwe kúna ekkóóch iit iteyit seni ewe sukuun áán ewe pwopwun árámás. Aa fééri ekkóóch iit aa apasa: sowufanafan, sowuset, sowuwimw, sowutáánnipi, sowupwe, sowufénú, sowurong. Ekkena meyinisin aa itan pwé ssow seni ewe pwopwun árámás; iwe aa ngeniir aar péchékkún nóón iteer-we "ssow."

Ina áámi opwene chék weeweenó pwe ina opwenee chék eyiis fátán ekkewe iit meyinisin. Wúwa ekiyekiiy ekka i miriit me neeyiimi ina epwe sineeyéchchúúw pwé meyi pwúng, pwún enaan peneen iit inaan itan "ssow" meyi chék nómw wóón ekkewe meyi angééchchún fééri ekkewe angaang. Ina tettenin wiis meyi toowu seni aar-we sukuun. Iwe, iyeey feffeyitto toori iyeey kiich meyi chék ááyá.

Iwe, wúpwene affata-ffengeniiy me áámi angaang sukuun. Meyi ééch opwe osukuuna nóómw meet meyi wor reech. Iwe wúwa mwochen [opwe] angeey meet ewe epwe chék otuufichi mékúremi, mesemi, ánennenóóy mesemi, émwékútú inisimi nóón aan epwe tuufich nóón peekin ree-Wóón. Opwe apachaangeni. Opwe apachaangeni pwokiten aan epwe ééch ewe sukuun. Pwún ika owa chék ééssongeey tipachchemen ree-Wóón ngé péwútóónó tipachchemach-we, owa ttur nóón. Ikaa pwé owa ééssongeey chék angaangen mwooni, opwene angeey; ngé péwútóónó angaangen anach mwéngé me neepwopwutáán, esapw manaw ewe mwooni. Áámi opwe toongeni ééssonga. Ika owa ééssonga wiisemi pwe opwene wiis tekiya nóón wiisen ree-Wóón eey ngé esoor pwopwutáán fénúwemi nóón aach-kkeey neeni, osam manaw. Ese toongeni opwe tuufich. Pwún wiis meyi chék mwochen mwmwetefátán, nóón mwuu. Iwee ngé wiis seni pwpwún ese toongeni epwe mwmwet.

Ina wúwa ekis apachaangeni áámi opwene kúttaa-sefáániiy mósowen meet ewe sukuunen nóómw wóón fénúwach-kkeey. Apachaangeni minen

Merika epwe chuffengen, aa ruuwu, ee? Chuffengen, aa ruuwu. Noon peekin ánneya, ruuwu fáán ruuwu ika meet? Epwe wininó? Epwe feet? Eew fáán eew? Nnengeni! Ónoon ree-nóómw re érá, "E pe eet reen érúúw." Áámi meyi rorrong eey kkapás? E pe ewe eet reen ewe érúúw. Ina minne napanapen Chuuk, éreniyen Chuuk, sóókkun Chuuk, tamatamen Chuuk, émwéchú! Angeey minen Merika minne meyi tuufich ngenikich. Pacheengeni ruuwu, iwe aa péchékkún, pwún aa pe eet reen ewe ruuwu.

Áámi meyi sineeyéchchúúw ááy kkapás? Osapw nniyen weeweeyééch pwún aa kusukus, pwún aa wor anen sepeniin nóón. Iwe, ina opwenee pwan ótuufichi ááy kkapás pwún wúsapw eppeti minne opwe osukuuna, pwe wú chék áweeweey inisimi. Pwún inisich e manaw seni pwpwúnún fénúwach. Iwe, inisin ekkeey chóón Merika e manaw seni een me neeniyan. Re etto ikeey, ngé resapw pwan niwiniiti neeniyan? Niwiniiti pwan manaw seni manawen chék neeniyeer. Sapw iyeey pwénútáán manaweer? Ngé kiich sipwe osukuuna, een me niwiniiti neeniyan, apachaangeni meet? Sipwe apachaangeni ekkena. Ina minne wúwa tingor ngenikemi.

Tetten rúwe wú mwochen ómónnáátá, ngé iyeey ngaang wúsaa mwo angeey eew, pwe wú chchiwen chék ókkópwóraawusa ááy áweewe. Ngé eni aa pwin, wúwa pwan peekkus pwún ngaang meyi semwmwen, ngé iyeey, máá, wú pwichipwichitá pwún wú sááw. Pwún wú wúttam chék, iwe wúwaa pe.

Wúpwene chék tingor ngenikemi pwé opwe ótoononga mósónósón, ttongoffengen, miriit ffengen, ánneyachoochis ffengen nóón áámi sukuun; pwún ika e wor ekkewe, epwe mwéch mósowen áámi sukuun. Ika e wor ttong, e wor mósónósón, e wor ánneyachoochis, e wor ewe miriit, e toongeni mwéch mósowen áámi sukuun. Ngé emén ese isóni pwe e isóni namanam tekiya ika mwááneson—ee?—meet neenuukan? Meyi kirikiringngaw ika angaangangngaw i isóni neetipan. Ese toongeni epwe angeey óóch mósowen sukuun pwú epwe chék fééri aan-kkewe mwochen nóón sukuun, ngé ese túmwúnúúw aan epwe makkeey mósowen nesen, mósowen sukuun. Mwakeney, eey? Ina. Ewe éwúúngeni sening, ina ewe ánneyachoochis. Iwe opwe toongeni fóókkun sineey; pwe aa toonong ewe mósónósón, tipeyeew, ánneyachoochis, miriit, opwe kkayé. Opwe kkayé, pwún ina napanapach me nóómw. Ina napanapach seni nóómw. Kkayé ekkeey rúwáánú wú ánneyááni seni ekkewe pwopwun árámás.

Wúpwe pwan niwin-sefáán, wúpwene angeey tettenin wúnúngát seni ááy kkapás.

Ekkewe pwopwun árámás raa angeey osukuuna néwúúr-kkewe mwáán me feefin nóón ewe peekin ósómwoonu, nóón peekin ámwáánééch, nóón ewe

peekin efeefinéech, nóón ewe peekin mósónósón. Raa osukuuna néwúúr-kkewe: ekkewe mwáán meyi kúkkún resapw kkééri iten ekkewe mwáán meyi watte, resapw kkéér ngeniir iteer—wesetáán iteer. Ika emén e kkéériyey... Epwe iyéén epwe áániyey sómwoon neeyiimi? Een o? Ék, aapw! Een, mwa! Kepwe kkéériyey, kesapw kkéér ngenney pwé "Peeterus!" Kesapw kkéér ngenney ena. Ena e ngngaw, kkapás namanam tekiya, kkapás mwááneson wóón aach sómwoon. Sise toongeni aach sipwe kkéér ngeni wesetáán iten ewe e nap mwmwach; pwan ekkewe feyittiwan ngé ika kiich nampa nimuuw ika nampa rúwáánú sisapw kkéér ngeni iten ekkewe wóón. Sisapw toongeni kkéér ngeni iteer. Eew kkapás á ápasa, "Ee ko!" Weewee chék fénúwach. Pwan esineengeni pwe epwe chék kunnuungenikich. Epwe sineey meet sipwe féér ngeni. Ina eew kkapás, eew kkapás pwoteete. Ááyá reen émwékút ngeni, pwún epwe nnifech inisin, aa nnengenikich. Ááyá reen pénuwen ósómwoonu aan kkéérikich ika aa kkéérikich "Meen!" Ngé ewe meyi kisikiis faan, feefin ika mwáán, ese toongeni "Meet?" Epwe chek árá "Ee ko!" Ina pénúwan meyi chék pwoteete, pwé rese mwochen epwe tekiyaa mwo ngé kkapás. Rese mwochen epwe tekiya kkapás wóón ekkewe meyi tekiya wóór.

Feyinnó reen peekin feefin, rese mwochen ekkewe feefin repwe feyitto núkún eey iimw ika ekkewe mwáán meyi nnómw nóón eey wuut. Rese mwochen repwe feyittó repwe toonong. Ikaa pwé re feyitto, ina repwe chék kkééto me nóón enaan aan—ika feyitto ikaan, ina repwe chék kkéénong, "Ekkewe mwáán re nómw ikena?" Ngé raa érá pwé iir meyi nómw, iwe "Áám iyeey éwú feyitto repwe wúútá." Wúútá, repwapw fátán. Ina angaangen chóón nóómw. Weeween: ewe mwomwmwongeyang rese mwochen repwe ipweri fáán pecheer ika rese mwochen repwe épwpwúnú wóón meseer. Ina angaangen mósónósón ffengen mé ttong.

Raa ayit ngeniir ekkewe feefin resè toongeni repwe fééri enen mwongeyeer mwéngé. Meyi pin mé nóómw. Ineer chék ika inenapeer, iir chék eey re féffééri eneer mwéngé. Feyinnó feyinnó, ika raa fen néwúnéw feefineer-kkewe, iwe néwúúr-kkewe iir meyi tongeni fééri enen mwongeyeer-kkewe. Rese mwochen feefineer-kkewe angéngeni eneer mwéngé. Meyi efeningngaw reer—epiningngaw eey sipwe árá, epiningngaw. Iwe, ina angaangen ósómwoonéech.

Ekkewe énúwén kúkkún rese toongeni repwe móót wóón een neeni ika ekkewe átemmong re móót fáán. Resapw toongeni repwe téétá wóón. Ika iyeey ngaang wú wúútá pwé wúpwe afananfan ngé Anúpich mé iyé e nómw ikaan, wúsapw wúútá.[6] Wúsapw wúútá wú pwe afanafan wóór. Nóón ewe mwuu ina wusun pinin.

Iwe, wúwa mwochen pwé epwe ina wusumi ffengen. Pwokiten áámi o sineey ewe itenap "árámás"—itenap "árámás"—iwe, ina aa ppúnúk nóon. Eey afanafan ttong, tipeyeew ffengen, achoochooffengen, ánisiffengen, epwe nómw reech. Itenap "árámás"—kiich meyinisin iyeey si nómw ikeey nóón chék ewe itenap árámás. Ina sipwe chék kúnaa pwé itan árámás, siya tongeey, siya túmwúnúúw, siya ekiyekiiy epwe ifa wusun.

Ekkewe mettóóch opwe émwéchú. Emén árámás meyi ekiyekingngaw neetipan ika angngawa neetipan, ika i sineey emén pwé iiy árámás, kúna napanapan pwé iiy árámás, ngé meyi angngawa aan ekiyek ngeni. Meyi éech opwe kúna emén pwé napanapen árámás, owa sineey itenapan pwé árámás, iwe owa pwan sineey pwé "Oo, árámás enaan, wúpwe fééri árámás." Nóón eew kkapás ppúnúk ónoon ree-nóómw, "Túmwúnúúw árámás, ótuufichi árámás, kepwe tuufich reen árámás, kepwe ttúmwún reen árámás."

Sópwónóón, árámás chék angaang, árámás chék sáay, árámás chék wotoot, árámás chék attaw, árámás chék sukuun. Ika esoor árámás, epwe fis sukuun? Áá? Nnengen! Pwokiten e wor árámás aa wor sukuun. Ngé ika esoor, ese toongeni wor sukuun. Ina minne itenap "árámás." Ekiyekiiy: árámás. Wunusen mettóóch meyinisin aa fis reen árámás opwene ekiyekiiy.

Ina wúwa chék tingor ngenikemi pwe epwene iyeey áweesinóón ááy kkapás ngenikemi. Ngé ewe rúwe wúkúúkún wúwa ómónnáátá wúpwe ngenikemi esapw toowu meyinisin pwún esoor niwinin. Pwe eey mwéngé wú áni ngé wesetáán eney seni semey ngé meyi kkamé, meyi kkamé. Esapw fen mwaken eey kkapás, áá? Pwé sam minne o rong ekkeey kkapás seni sememi. Sapw o pwáráán rong ikenáy? Ina pwopwun.

Imwuunóó chék ekka e áni ngé imwuunó eey ese mwéngé mé wóón saman, pwún ewe ruuwu kinikin: eew néwún sómwoon, eew néwún kichinúwén. Esapw ina? Ose miriit mé mwmwan? Iwe esapw ngaang árámásin sómwoon. Wúwaa chék nómw nóón pwokiten néwún sómwoon; ngé ngaang kichinúwén, ngaang kichinúwén. Ngé wúwa chék nómw nóón tetten pwokiten ewe néwún sómwoon. Ngé sapw ngaang árámás sómwoon, pwé ngaang pwúkún kichinúwén. Iwe, ina pwopwun wú chék rong ekkeew ekkóóch kkapás.

Wúwa mwochen wúpwe ánis ngenikemi meet pwopwun áán ekkeey sensey mwochen árá wúpwe chuurikemi. Wú pwaapwa mwochen chuurikemi pwún wúpwe etipeyeewikemi, ayit ngenikemi ifa wusuch neefiinach seni nóómw toori feffeyitto. Meet opwene fini meyi éech mé ááy kkapás opwe ekiyekiiy. Ngé meet meyi ngngaw oturaawu. Meet meyi éech opwe kkapach ngeni áámi sukuun opwe pwan ekiyekiiy. Meet meyi ngngaw opwe apachaangeni áámi sukuun, iwe opwe oturaawu. Ina ááy tingor ngenikemi.

Kinissow chaapwúúr. Eni aa iyeey chék, pwún aa pwiniitikich. Aa faansowun nangattam áámi móót nóón áámi kkayé. Aa weyires mékúremi; ngé ete pwan koon weyiresinó reey neesor owa tiparoch. Inaa chék.

Notes

1. Eey afanafan meyi mmak seni teeprekooto reen Ward H. Goodenough me Boutau K. Efot nóón ewe iyer 1964. Iir raa pwan afféwú nóón fóósun Ingenes. Ewe meyinap nóón Department of Education itan Peter Hill aa tingor pwé epwe kkafféw áán Petrus afanafan pwé ekkewe sensey re-Merika repwe miriitiiy. Ewe afanafan meyi mmak ikeey ngeni itechikin mmak nénnéén ekkewe meyi mmak nóón ewe "Pwpwuken Tettenin Fóós: Chuuk-Ingenes" ("Trukese-English Dictionary") aa fféér reen Ward H. Goodenough me Hiroshi Sugita. Itá ena wusun mmak epwe affata meet chék Petrus Mailo aa apasa. Meyi mmak fóós weewee chék me áán Petrus-we newenew wusun ngiingiin Mwáán. Ina ese apasa "aramasen Chuuk" ngé fáán chómmóng aa apasaa mwo "árámásin Chuuk;" pwan ese apasa "kkapasen Chuuk" ngé aa apasaa mwo "kkapásin Chuuk." Wusun aan newenew ena wusun meyi mmak.

2. Petrus Mailo aa wiisen sómwoonun Wééné arap ngeni ruwe iyer toori faansowun aan-we máánó nóón ewe iyer 1972. Iiy aa sineey itang, wuruwoon Chuuk me nóómw. Aa ááyá ewe sineeyan ne efisáátá eey afanafan.

3. Wunuunganata ika Wunuungenota iten ewe neeni wóón Wééné e nómw Chuuk High School wóón. Ekkewe itang re apasa pwé ewe neeni neeniyen áán Sowuwóóniiras-we fanang. Seni ewe neeni si toongeni wootá woori wunuungen Tonaachaw, neeniyen ewe énúúyaramas, pwopwun ewe eyinangen sómwoon itan Sópwunupi pwan pwopwun ewe tettenin sómwoon itan Sowuwóóniiras. Meyi esissin pwé óófesin mwúún Chuuk pwan imwen Chuuk High School meyi nnómw wóón ewe neeni.

4. Petrus aa apasa "iyer" ngé aa minen aan epwe apasa "maram."

5. Chóón ena eyinang re apasa pwé iir meyi etto Chuuk nóómw seni eew neeni wóón nááng itan Achaw ika Kachaw. Ekkewe pwopwun aramas raa pwan etto Chuuk seni Achaw, pwan ewe eyinang itan Sópwunupi chuffengen me ekkewe eyinang aa kkeyang seni Sópwunupi. Achaw pwan iten eew sóókkun faaw pwú féwún Achaw ika féwún nááng.

6. Iir Anúpich (Albert) me Petrus pwiipwii chék, ngé Anúpich mwáániichi neeyiir.

Literacy in Micronesia[1]

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This article raises questions regarding the relationship of education and literacy to economic development in Micronesia and briefly reviews contemporary thought on how this relationship operates in other developing countries. As a preface to examining census-based estimates of literacy in Micronesia and a new database on achieved English literacy in Micronesia, various international definitions and types of evidence for literacy are considered. Illustrative data on indigenous literacy in several Micronesian languages are also provided. Three different literacy environments in Micronesia are described, as well as the formal school literacy policies and curriculums. The implications of all of these factors for appropriate literacy education and educational resources investment strategies in Micronesia for economic development are discussed.

"I am fully aware that the long-term success of the Republic of the Marshall Islands will depend upon the quality of our education system. A well-educated public will be essential to our political and economic development. An effective education system would greatly relieve many of the social problems that we have identified and begun to rectify. We would hope to establish a comprehensive educational system that would create opportunities for personal advancement and thereby lead to the general advancement of our society."

President Amata Kabua, Republic of the Marshall Islands, March 3, 1988. Letter to the US Department of Interior requesting financial support for an educational evaluation.

ISLA: A Journal of Micronesian Studies, 1:2. Dry Season, 1992, 289–327

Like the people and policy makers of developing countries all over the world, the people and policy makers of Micronesia hold high hopes for the economic value of education—and for literacy, one of the assumed results of education. In this discussion of literacy in Micronesia, I will first familiarize the reader with contemporary thought on the relationship of literacy and education to economic benefits in developing countries. The various types of evidence for literacy will be explained and evaluated for their relative usefulness to an understanding of the education-economy relationship and to the design of education and economic policy in Micronesia. Following a review of existing census-based estimates of literacy in specific parts of the region, an empirical database will be presented on the achieved literacy of Micronesian youth. Then the literacy curriculum in various parts of the Micronesian region will be outlined. Against this backdrop it is possible to reflect on questions regarding choice of languages for literacy and education, resource investment strategies, and to speculate about what might constitute appropriate literacy education in Micronesia.

RELATIONSHIP OF LITERACY AND EDUCATION TO ECONOMIC DEVELOPMENT

At one time, international economic planners embraced the notion of *human capital* as a truism: Added years of schooling lead to achieved literacy, and achieved literacy leads to added economic value for individuals and for society. When a society invests heavily in education, the expectation is that the society is creating human capital—that is, educated, literate individuals who will directly contribute to the economic growth of that society (e.g., Anderson & Bowman, 1965; Inkeles & Smith, 1974; Lerner, 1964; McClelland, 1961; Psacharopoulos, 1985; Psacharopoulos & Woodhall, 1985; Shultz, 1981). Within this expectation, literacy is the active ingredient, credited with bringing changed attitudes to the newly literate peoples, and giving them access to information of which they had previously been deprived. UNESCO (1976, 1988) and other community support groups (e.g., Voices Rising, 1990) have formed the argument differently, calling literacy a basic right that should be guaranteed by the state, an indicator of the quality of life. One of the major themes of the evaluation of public education in the Federated States of Micronesia (FSM) (Grossman, Drier, & Staff, 1990) was similar. The majority of the 1,500 leaders, teachers, parents, and students interviewed during the evaluation process indicated that the primary

purpose of education is to create good citizens and happy, satisfied people. The more instrumental educational goals of preparing for jobs and enabling educated people to earn a good living were identified by only about one fourth of the respondents.

Seeking more quantitative descriptions of this relationship, Anderson and Bowman (1965) estimated that it is *necessary* for 40 percent of a society's population to be literate for economic growth to occur, and that 70 percent to 80 percent literacy is necessary for rapid economic expansion, although other factors must also exist for economic growth to occur. Some scholars consider Anderson and Bowman's projections speculative. Taking a different quantitative tack, Fuller, Edwards, and Gorman (1987) examined the relationship between literacy and economic growth in various sectors of twentieth century Mexico. They found that the economic impact of rising literacy in urban centers in 1940 was comparable in magnitude with the contribution made by physical capital and labor force size. They found that in rural areas rising literacy had little impact.

Challenging the Link

Wagner (1987, 1988) has synthesized the literature articulating the education, literacy, economy link, and updated it with arguments challenging the link (e.g., Carnoy, 1974; Fagerlind & Saha, 1983; Simmons, 1980). There is also a body of historical scholarship exploring the literacy-economic development link in ancient societies as well as those of more recent centuries (e.g., Goody, 1968; Graff, 1979). For many social scientists the link is problematic because it implies causation from the mere correlation between literacy and economic development (usually gross national product). In disputing the human capital concept, Blaug (1985) reminds us that many literacy skills are learned during on-the-job training and from experience; thus, the counter argument that economic development causes literacy gains persuasive power. Moreover, literacy achieved is not necessarily literacy retained. Fagerlind and Saha speak of a threshold number of years needed for more or less permanent literacy to be acquired. A version of this threshold concept is the claim that 4 to 5 years of primary school for children are required for reading to be sustained (Gray, 1956). Tsang's (1988) extensive review of findings and methodologies in the cost-benefit and cost-effectiveness analyses of the education and economy relationship also reflects the controversy now swirling around the human capital hypothesis.

As acceptance of a causal link between literacy and economic growth weakens, the quality of life argument for literacy is accentuated. The perceived association of literacy, numeracy, and education with health, nutrition, employability, and other social goods is too strong to collapse because social scientists have not produced quantitative evidence acceptable to all. Nevertheless, perceptions are growing on an international level that something is amiss with investments that have been made in education and literacy, and that adjustments must be sought.

Wagner (1988) refers to this perception as a malaise, a *crisis* in Third World education and economic planning. The nature of the problem is simple. Enormous proportions of the small economies of developing countries are being invested in education, but the yield from these investments is not as satisfactory as expected. Observers of all types complain about educational inefficiencies, waste, corruption, and favored treatment of some groups at the expense of others. But perhaps most important from the economic investment standpoint, is that the schools do not turn out a sufficient proportion of literate graduates—that is, the education-literacy link is weak. Neither do the schools produce people with the types of skills and attributes that best fit the economic niches the investing society needs filled if economic expansion is to occur. More liberally educated university graduates are produced than the society needs. Too few individuals are produced who have the technological skills needed to undertake such essential tasks as operating a power plant, carrying out the resource management tasks of the society's government agencies, conducting the financial, procurement, and planning tasks of commercial ventures, or designing and building the electrical and structural systems of the physical infrastructure of the expanding society. In spite of the past educational investments made, societal leaders are dismayed that they must continue to import foreign technical labor to perform these tasks. Too many graduating youths are filled with ideas of material acquisition and foreign life-styles, but they find themselves unemployable and dissatisfied with traditional village life.

Concern in Micronesia

The malaise Wagner described is also present in Micronesia. Educational planning discussions have been presented regularly by regional educators and social scientists (e.g., Ballendorf, 1981; Hezel, 1977, 1981a, 1981b, 1989; Ramarui, 1981). *Education for What?* debates have been prominent

features of regional conferences in Micronesia for many years; however, the tone of these remained rhetorical during the Trust Territory of the Pacific Islands (TTPI) period, perhaps because the prospect of building educational systems that are modern by US standards seemed possible as long as the money for continual expansion was still available from US federal funding sources. In 1986 the expansion ended for the FSM (Yap, Chuuk, Kosrae, and Pohnpei) and for the Republic of the Marshall Islands (RMI) when their respective Compacts of Free Association with the United States were signed. Only Palau remains a Trust Territory with full access to US federal education funding, an arrangement perpetuated only because Palau and the United States have not agreed on the terms of a compact. Guam and the Commonwealth of the Northern Mariana Islands (CNMI) remain eligible for funds because Guam is a territory and the CNMI negotiated commonwealth status with the United States.

In January 1989, the RMI issued a document requesting bids on a nationwide assessment of education. It is a remarkable document in that it describes in detail an imbalance in skyrocketing population growth, downward spiraling funding for education, educational outputs that do not reflect the extensive investment made over the years, and an educational philosophy that takes little account of the challenges faced by a nation of 34 coral atolls and a limited employment, natural resource, and technological base. It called for practical—not rhetorical—answers to the question of Education for What? In May 1989, the FSM also requested bids on an evaluation contract to examine the condition of the nation's education. Both of these efforts reflect the first major self-examinations of the education investment in Micronesia since the termination of the Trust Territory relationship.

DEFINITIONS AND INDEXES OF LITERACY

The Topography of Literacy

Literacy is a complex concept. To understand literacy in Micronesia, one must be familiar with the range of the conceptual meanings of the term and the more common ways of measuring them. Each particular meaning and measure of *literacy* that might be chosen for either policy or practical reasons will yield significantly different estimates and recommended action plans. So complex is the literacy concept that scholars have repeatedly returned

to the task of defining it (e.g., Bessemer & Spencer, 1975; Bormuth 1973; Nafziger, Thompson, Hiscox, & Owen, 1975; UNESCO, 1951; Venezky, Wagner, & Ciliberti, 1990; Wagner, 1987). One such plunge was occasioned by the competency-based educational trend in the United States in the 1970s that sought to establish minimum levels of literacy and educational competence and to make school systems accountable for the attainment of individual students. In 1990, UNESCO's International Literacy Year stimulated yet another cycle of analyses.

Table 1 lists the major variables that have been considered in the many different approaches to defining literacy, and it shows some of the common approaches to measuring or documenting literacy. One of the most important conceptual differences in prominent definitions of literacy is whether universal standards of literacy are established, or conversely, whether a contextualized standard is set. For example:

> Universal: People are literate who have completed the 5th grade.
> Contextualized: People are literate who have acquired the knowledge and skills that enable them to engage in the literacy activities required for effective societal functioning.

The important difference is that the contextualized approach assumes that societies differ in the types of literary needs they experience and in the levels of competence to be applied to different types of literacy. Implicitly, the contextualized definition embraces change because the literacy activities required for effective societal functioning will be different as modernization proceeds. A high-technology society (such as those in large, urban economic zones in the United States) will need high levels of literacy and also a range of highly specialized types of literacy. Some island societies in Micronesia may have literacy needs resembling this model; others may utilize their oral traditions more extensively and experience need for only some individuals to have higher and more specialized levels of literacy while other individuals need to be able to read only simple messages relevant to few contexts beyond home.

If one rejects a single universal definition of literacy such as the one above, with its simple operational index (5th grade), then one must examine and make decisions about all of the other variables listed in Table 1. At that juncture, one must ask the questions concerning these variables that will validly and reliably help to define literacy for individuals and societies so that this information may be used to formulate economic and educational

Table 1 *Topography of Literacy Definitions Found in the Research Literature*

Scope of Analysis
- individual
- specific group
- society or nation
- world

Types of Materials
- signs/labels
- schedules/tables
- maps/diagrams
- directions/instructions
- advertisements/announcements
- forms
- personal communications
- instruments/controls
- categorized listings
- discourse/narrative
- technical documents

Contexts
- universal, not contextualized
- settings: school, home, church, occupation, government, commerce
- purpose
- participants: independent, collaboration

Behaviors (Receptive and/or Productive)
- reading
- writing
- numeric operations
- other information processing

Frequency of Encounter or Use
- specific materials or contexts

Language of Literacy
- first language
- second language
- biliteracy

Typical Age Groupings
- adults only: above age 15; beyond 12th grade
- children only: below age 15; grade 1–8, grade 9–12; below grade 5

Criterial Level
- basic or minimal literacy
- functional literacy
- required literacy
- advanced literacy

Measures of Literacy
- number of years in school: self-report or authority report
- standardized reading achievement scores
- criterion-referenced functional literacy scores
- newspaper reading
- ethnographic observations of literacy in context

policy and practice in Micronesia. For example: With which types of materials is literacy expected? In which contexts is literacy expected? Which language or languages are to be used in the literacy decision under consideration? What is the age of the individuals involved? What are the different levels of competence involved?

Choosing Literacy Measures: Background

The measures chosen to portray literacy and illiteracy at the international level have typically been *estimates* or census-type measures, and they have been highly flexible so that data can be aggregated across many political entities for country, regional, or worldwide rates. Early UNESCO measures (1951) reflected a very elementary standard: "A person is literate who can, with understanding, both read and write a short, simple statement on his everyday life" (p. 7).

Most governments still adhere to similar elementary standards or they adopt a school grade completion standard of 4th or 5th grade. Frequently, presentations claiming to document international literacy levels fail to provide any specifications on the nature of the data underlying such sweeping statements as: "In 1985, there were an estimated 889 million adult illiterates in the world, more than a quarter of the adult population"; or "The majority of adult illiterates are women, the illiteracy rate being 34.9 per cent for women compared to 20.5 per cent for men" (UNESCO, 1989, p. 1).

This avoidance of detailed measurement information probably occurs because very crude national and regional estimates are being transformed into a common index, such as a percentage, and then used to yield rough worldwide estimates. As unsatisfying as this approach is from a research standpoint, it does serve the public relations purpose of alerting the public and the policy makers around the world that literacy is an important issue that needs immediate and prolonged attention. However, to understand the status of literacy well enough at a local, national, or regional level to make appropriate policy decisions, more care is needed in the selection of the literacy dimensions to be reflected in the specific statistical measures adopted. It is for these reasons that attempts to understand the extent and nature of literacy and illiteracy in the United States led to research that used measures of actually achieved literacy.

The US Army operationalized its needs for achieved literacy by first analyzing samples of written materials used in specific Army jobs (e.g., auto repair and cooks' manuals, procedural guides for supply personnel) and then developing tests to measure the ability of soldiers to read these materials—that is, to identify those persons who had achieved the *functional literacy* skills required to use these materials (Sticht, 1975). During World War II, a 4th-grade reading standard was set for acceptance into the Army; in the 1980s this standard was raised to high school graduation (Mikulecky, 1990). An important body of research has been conducted in the United States on

measures of adult literacy (e.g., Nafziger et al., 1975) and although grade school literacy benchmarks were often referred to, this research emphasized concern over the lack of success of *adults* (usually 16 years of age and older).

Concern for the literacy of children in the school domain has occupied a prominent position in American educational research. It is in this domain that the most sophisticated measures of literacy in the English language have been developed. Nevertheless, ambivalence exists in the United States over the importance of child literacy in nonschool domains (e.g., Venezky et al., 1990). However, in an argument that applies with equal force for US and Micronesian schools, Macias (1990, p. 21) declared: "Reading instruction is so central to the national school curricula that I believe we can safely say there is a societal expectation that school age children will be able 'to read' by the end of elementary school."

Also at issue is whether the more sophisticated but domain-narrowed measures of school literacy are the measures of choice, or whether measures of nonacademic literacy domains should be selected instead of, or in addition to, school literacy measures. In this latter aspect, Sticht (1990) (whose research career has focused on the occupational literacy needs of the US military) reports that individuals who have acquired the literacy skills assessed by standardized norm-referenced reading achievement tests for schoolchildren are able to perform satisfactorily on any number of functional literacy and job-related tests (with correlations among academic and job-related literacy tests being greater than .75), and also on tests such as the Armed Forces Qualification Test (with near maximal correlation), a test that is administered throughout the US-affiliated Micronesian region. Thus, measures of academic literacy designed for schoolchildren will predict and correspond to adult literacy in nonacademic literacy domains, to job-related tasks, and even to US military qualification. According to Sticht, the important thing that academic literacy tests *cannot* do is successfully match adults to specific instructional programs. For that purpose, more specialized domain- or job-related diagnostic tests are needed.

In this review of literacy in Micronesia, I will first display census-based estimates of literacy in Micronesia. In a sense, these portray the educational investment in Micronesia because they provide a head count of Micronesians of different ages and genders in whom the investment of formal schooling has been made. Following the recommendations of Macias (1990) and Sticht (1990), I will then present new data on the achieved English literacy of schoolchildren in all jurisdictions of Micronesia and indigenous language

literacy in selected locations. These findings will portray the literacy yields of the educational investments in Micronesia.

ESTIMATES OF LITERACY FOR MICRONESIA

None of the Micronesian political entities appears in international listings of either illiteracy or literacy rates (e.g., UNESCO, 1989). This may be because they have not been independent members of the United Nations until very recently and may therefore have been lumped with US statistics. No notice has been given to their distinct linguistic, educational, economic, and political variance in relation to the 50 states of the United States. However, Johnson (1988, p. 12–13; 1989, p. 35) provided this view of literacy in the Marshall Islands in an article entitled "Literacy Nears 100%: Marshallese, No Problem":

> In contrast to many developing nations, these central Pacific Islands are not struggling with the socially and economically crippling problem of widespread illiteracy. In fact, in their own language, nearly all Marshall Islanders can read and write.
>
> However, it is in English—the official language of government business—where a higher percentage of Marshall Islanders are functionally illiterate, causing them difficulties in coping with the Western world of the urbanized centers in the Marshall Islands.
>
> Today, the Marshallese language Bible is the biggest single influence on the reading ability of the 41,000 Marshall Islanders. Observes Hilda Jetnil, a Marshall Islander and Director of the local campus of the College of Micronesia: "The literacy level of Marshallese in their own language is close to 100%." Says Jim Bogden, a former Peace Corps Volunteer and now a high level Education Ministry official fluent in the language, "I've never met a Marshall Islander who couldn't read and write in their own language."
>
> Even at the eighth grade, students' comprehension of English is low. "Each year we test entering ninth graders," says Bogden. "Year after year they test at the second grade level (in English reading)." On average, high school graduates read at a level comparable to eighth graders in US schools.

There appear to be no empirical grounds for the statements about the Marshallese language in Johnson's article.

The Marshall Islands Statistical Abstract (Office of Planning and Statistics, 1988) provides an estimate of the number of students enrolled in public and private elementary and secondary schools in 1986–87. However,

no populationwide census data on highest grade completed are available, thus making a data-based nationwide estimate of literacy unavailable for the RMI. No census estimates exist on Marshallese literacy for any part of the population. The 2nd-grade English reading level cited by Bogden is lower than one would expect from the international standard for literacy of 4th- or 5th-grade completion. The 8th-grade reading level cited for high school graduates would be indicative of literacy for this highly select group of students. Only a fraction of the general student population is admitted to high school and still fewer graduate.

Rough data bases exist for contemporary literacy estimates in some parts of Micronesia, and some longitudinal estimation data are available. For example, the TTPI Commissioner's annual reports often indicated the number of students attending and graduating from school. The recent FSM censuses of Kosrae (FSM Office of Planning and Statistics, 1989) and Yap (Yap Office of Planning and Budget, 1988) probably provide the best counts of school attendance for students of varying ages and both genders. The Yap State census report presents data on the highest completed grade for females and males 20 years of age and over for both Yap proper and for the Outer Islands, as well as school attendance of females and males 10 to 19 years of age for Yap proper and the Outer Islands. Also provided are data on the highest grade completed by males and females for Yap proper and the Outer Islands combined, by 5-year age groups from 5 to over 80 years of age. The Kosrae State census report presents data on the highest grade completed for females and males aged 6 to 18 years-and-over, and for females and males 20 to 55 years-and-older. Tables are also provided in the Kosrae census report on the numbers of females and males aged 6 to 25 years-and-over who regularly or irregularly attend school, as well as regular and irregular attendance by grade attained. The Pohnpei census did not collect educational data. Census data for Chuuk have not yet been published. Census data on Palau are very limited—only the number of students enrolled in private and public elementary schools since 1981 is cited (Department of Interior, 1989). Census data for Guam and the CNMI provide grade completion data for adults (Interagency Committee on Population, 1988; US Department of Commerce, 1980).

Table 2 was developed from the Kosrae and Yap census data. It displays estimates of literacy rates on Kosrae and Yap for children and adults, females and males. The percentages shown indicate the proportion of each group that has completed the 4th grade—the international index of literacy.[2] No direct measure of reading and writing skills was made. Adult females on

Table 2 *Literacy Estimates (in Percent) Based on Census Data for Kosrae and Yap, Children and Adults, Female and Male, 4th-Grade Completion or Higher*

	Children[a]			Adults[b]			Children/Adults Combined[c]		
FSM State	Females	Males	Total	Females	Males	Total	Females	Males	Total
Kosrae	79	82	80	76	82	79	81	83	82
Yap	87	88	87			72	63	81	79
Yap Proper				68	83				
Outer Islands				50	72				

[a] Defined as children old enough to have completed 4th grade (Kosrae: age groups 9–11, 12–14, 15–17; Yap: age groups 10, 15, 20).

[b] Defined as adult age groups beyond school age (Kosrae: 18+; Yap: age groups 25 and over).

[c] Defined as children old enough to have completed 4th grade plus all adult age groups.

the Outer Islands of Yap and Yap proper have the lowest estimated literacy (50 percent and 68 percent, respectively). Outer Island men of Yap State have lower estimated literacy (72 percent) than the adult men of Yap proper (83 percent) and Kosraean men (82 percent). Kosraean adult women have a higher estimated literacy rate (76 percent) than women of Yap State (50 percent and 68 percent) but lower than Kosraean men (82 percent). There appear to be only slight differences in the estimated literacy rates of girls and boys on Kosrae (79 percent and 82 percent, respectively) and in Yap State (87 percent and 88 percent, respectively). The estimates for children in Yap State reflect a substantial increase in the proportion of the youthful population that is now acquiring schooling, compared with the adult population. Especially encouraging is the increased proportion of girls in Yap State who are now completing four or more grades.

Table 3 displays census-based literacy estimates for Guam and the CNMI. The percentage of adults on Guam who have completed 5th grade or higher (92 percent) is greater than both that of the CNMI (87 percent) and all other available census-based literacy estimates in Micronesia. The rates of 5th grade completion for CNMI youths is nearly maximal (98 percent).

For an initial sense of the extent to which schooling activity has spread through Micronesia, these estimates are useful; however, they are seriously deficient as indexes of literacy. They give no account of the payoff in actual achieved literacy resulting from the immense investment made in education for several generations. It is more important to know what has actually been

Table 3 *Literacy Estimates (in Percent) Based on Census Data for Guam and the CNMI, Adolescents and Adults, Female and Male, 5th-Grade Completion or Higher*

	Adolescents 15–19 Years			Adults[a]		
Entity	Females	Males	Total	Females	Males	Total
CNMI	98	99	98	84	90	87
Guam[b]				90	94	92

[a] Aged 24 and over for the CNMI; aged 25 and over for Guam

[b] The Guam census also asked if the respondent could read and write in any language. Of the persons aged 10 and older asked this question, 97% answered yes.

accomplished during the years of schooling than to know how many people have been on the enrollment rosters for various grades. The estimates also give no insight into the multilingual nature of literacy concerns in Micronesia, or into literacy in the various contexts of school, church, home, commerce, government, or health. They do not develop an understanding of different gradations of literacy: illiteracy, basic literacy, required literacy, advanced literacy.

It will be some time before such a comprehensive picture of literacy in Micronesia will be available. Nevertheless, achieved English literacy data for public school children in most of the region are available now. First language achieved literacy data are still sparse.

ACHIEVED LITERACY IN MICRONESIA

English

Students from Palau (Harris Elementary School in Koror and the Aimeliik and Ibobang Elementary schools on Babelda'ob), Chuuk State (Mechitiw Elementary School on Weno and Puluwat Elementary School on Puluwat Atoll), Pohnpei State (Kolonia and Saladak schools, Pohnpei), Kosrae State (Lelu Elementary School), and from the Republic of the Marshall Islands (Rita and Ajeltake Elementary schools on Majuro, and Ebeye Elementary School on Ebeye) were tested at the end of the 7th grade for English reading comprehension. At Neauo Elementary School, Weno, Chuuk, and at five schools of Yap proper (Fanif, Rumuu, Dinay Middle, Tamilang, and D. Binaw schools), students were tested at the beginning of 8th grade, which is a point in the development of English reading competence believed to be equivalent to that of students ending 7th grade. For the majority of students beyond the Mariana Islands, the end of the 7th grade is near the end of the schooling experience because most will not have an opportunity to go to high school.

The Degrees of Reading Power (DRP) Test, Form PA–8, was used (Koslin, Zeno, & Koslin, 1987).[3] It is a standardized, norm-referenced test that yields norms based on a broad US student population. It is a cloze test in which several select words in each paragraph are deleted and replaced by blanks. Multiple-choice alternatives for the missing words are provided in the margin. The DRP is also a criterion-referenced test linked to the

readability of text. The unique quality of student DRP scores is that they can be matched to the DRP readability score of virtually any textbook or reading material. For materials not already analyzed for DRP score, the score can be obtained by inputting text samples into a DRP computer program available for several models of personal computers. DRP scores can be used to determine which textbooks are appropriately matched to individual or group English reading skills, or they can be used as a measure of grade-level reading skill for individuals or groups.

Table 4 displays DRP scores for Majuro and Ebeye, RMI; Kosrae, Pohnpei, Chuuk, and Yap, FSM; and Palau. The student groups selected for testing include classrooms in schools in capital centers—Lelu (Kosrae); Neauo, Weno (Chuuk); Harris, Koror (Palau); Rita (Majuro); Kolonia (Pohnpei); and outer-village or outer-island schools—Mechitew, Weno, and Puluwat (Chuuk); Aimeliik and Ibobang (Babelda'ob, Palau); four schools on Yap proper; Ajeltake (Majuro); Ebeye Public (Ebeye); and Saladak (Pohnpei). There is no capital center school in Yap proper. The four schools tested in Yap are combined because the number of students was small and there were no statistically significant differences between schools on the DRP score. In other tests of English reading comprehension on Kosrae, there were no statistically significant differences between Lelu and the other four schools (Tafunsak, Malem, Utwe, and Walung). Therefore, only Lelu was tested in this study. The tendency of Utwe and Walung to have slightly lower English scores than Lelu might well have appeared again if the DRP had also been administered at these outer-village locations (Tilfas & Spencer, 1990).

The DRP results show interesting variations across the locations where testing took place. The highest scores occurred in Palau in one centralized school (Harris) and in an outer-village school (Aimeliik). Yapese schools and Kosrae's most centralized school (Lelu) also had relatively high scores compared with the other schools tested. DRP scores for most outer-island, outer-village schools were quite low, as one would predict from their remoteness to English language contexts. But the most important finding is that the highest mean DRP score achieved reflects ability to read no higher than *2nd-grade English readers.* Table 5 shows the DRP scores for three of the most commonly used US basal reader series in Micronesia: Scott, Foresman's Focus series, Harcourt Brace and Jovanovich's Bookmark series and Simon and Schuster's Ginn Reading Program. Although there are individual differences among students tested, and a few individuals are able to read Grade 3 and Grade 4 US basal readers, they are the exception. These data suggest that the vast majority of Micronesian students in the RMI, the FSM,

Table 4 *DRP Instructional Level Scores*

School/Section	N	Mean	Standard Deviation
Pohnpei[a]			
Kolonia	39	30.36	9.35
Saladak	38	27.37	8.19
Majuro, RMI			
Ajeltake[b]	10	17.20	3.08
Rita, Sec. 1[c]	36	22.50	7.62
Rita, Sec. 2	37	21.89	6.29
Ebeye, RMI			
Ebeye, Sec. 1[d]	21	22.19	9.45
Ebeye, Sec. 2/3	46	17.94	4.16
Kosrae			
Lelu	66	32.50	6.87
Chuuk			
Mechitiw	10	27.20	7.54
Neauo	29	24.79	9.65
Puluwat	16	23.25	8.27
Palau			
Harris	17	42.10	7.84
Aimeliik	07	39.10	11.01
Ibobang	06	29.70	4.41
Yap Proper Total	62	33.50	8.62

[a] No significant difference between schools.
[b] Statistically different from Rita, Fisher PLSD = 4.388, p = .05.
[c] No significant difference between sections.
[d] Statistically significant difference between sections, t = 2.57, p = .01.

and Palau have not achieved literacy in English beyond the 2nd grade after completing 7 years of schooling.

On Guam, islandwide achievement testing is conducted in English each year. Odd-numbered grades plus Grade 12 are tested in September with the Science Research Associates (SRA) norm-referenced US achievement series, which yields scores in reading, mathematics, language arts, reference materials, social studies, science, applied skills, and a composite score.

Table 5 *DRP Scores for Popular Basal Reader Series*

U.S. Basal Series/Grade and Book Title	DRP Instructional Level
Harcourt Brace Jovanovich, Inc.	
Bookmark Reading Program: Eagle Edition, Early et al. (1983)	
Grade P, Level 4—Sun and Shade	37
Grade 1, Level 5—Together We Go	39
Grade 2/1, Level 6—World of Surprises	40
Grade 2/1, Level 7—People and Places	44
Grade 3/1, Level 8—Widening Circles	47
Grade 3/2, Level 9—Ring Around the World	49
Grade 4, Level 10—New Frontiers	48
Grade 5, Level 11—Blazing Trails	52
Grade 6, Level 12—Golden Voyages	55
Scott, Foresman and Co.	
Focus: Reading for Success, Allington et al. (1988)	
Grades K–8, Levels K–13	
Grade K, Level K—I Can	NA
Grade R, Level R—I Can Read	NA
Grade PP1, Level 2A—Work and Play	NA
Grade PP2, Level 2B—Big and Little	NA
Grade PP3, Level 2C—You and Me	NA
Grade P, Level 3—Hop, Skip, and Jump	40
Grade 1, Level 4—Hide and Seek	40
Grade 2/1, Level 5—Sing and Dance	42
Grade 2/2, Level 6—Whistles and Dreams	44
Grade 3/1, Level 7—Up and Over	44
Grade 3/2, Level 8—Thrills and Spills	45
Grade 4, Level 9—Wheels and Rockets	47
Grade 5, Level 10—Rough and Ready	46
Grade 6, Level 11—Bright and Beautiful	50
Grade 7, Level 12—Wonders and Winners	53
Grade 8, Level 13—Sights and Sounds	53

(*continued*)

Grades 2, 4, 6, 8, and 10 are tested in the Spring with the Guam Basic Skills Mastery Test (BSMT), a criterion-referenced test addressing a priority list of mathematics and language arts skills. Successful performance on several of these skills would provide a sound basis for inferring basic literacy.

Table 5 *continued*

U.S. Basal Series/Grade and Book Title	DRP Instructional Level
Ginn and Co.	
Ginn Reading Program, Clymer et al. (1982) Levels 2–15	
PP1, Level 2—Little Dog Laughed	NA
PP2, Level 3—Fish and Not Fish	35
PP3, Level 4—Inside My Hat	34
P, Level 5—Birds Fly, Bears Don't	38
Grade 1, Level 6—Across the Fence	37
Grade 2/1, Level 7—Glad to Meet You	42
Grade 2/2, Level 8—Give Me a Clue	41
Grade 3/1, Level 9—Mystery Sneaker	45
Grade 3/2, Level 10—Ten Times Round	46
Grade 4, Level 11—Barefoot Island	50
Grade 5, Level 12—Ride the Sunrise	50
Grade 6, Level 13—Flights of Color	52
Grade 7, Level 14—Green Salad Seasons	57
Grade 8, Level 15—Chains of Light	55

The 1989 Guam SRA report cited the districtwide average reading percentile at the beginning of 7th grade as the 22nd percentile, relative to the US norm group. The average language arts score was at the 28th percentile. Thus, on the average, 78 percent of the norm group had higher reading scores and 72 percent had higher language arts scores than did Guam 7th graders. These SRA results in reading and language arts are characterized by the test publisher as below average.

Mastery of a BSMT skill is defined as correctly answering at least 75 percent of the questions that address a skill (Shafer, 1990). Guam's goal is for at least 75 percent of its students to master 75 percent of the skills assessed by the BSMT. In the Spring of 1990, 1,645 8th graders took the BSMT language arts section. Averaging across the percent of students mastering each of the 25 specific skills, the mean percent of students mastering the language arts section was 48. For the 12 skills dealing directly with reading comprehension, the average percent correct ranged from 41 percent (cause-effect relationship of reading passages, personification) to 86 percent (sequence of events of reading passages).

Neither the SRA nor the BSMT data provide a direct comparison with the achieved literacy data of the DRP test on students in the FSM, Palau, or the RMI. Guam students ending their elementary school years have not achieved the goals set for them by their Department of Education (DOE). Nonetheless, they have demonstrated at least a moderate level of competence on English reading comprehension tasks, and more than half (58 percent) have reached the mastery criterion for basic reading skills (skills 1–12). According to a Guam DOE testing report (Martinez, 1990), more than 75 percent of the Department's 6th and 8th graders will need to achieve mastery on the BMST language arts test to achieve in turn an average performance on the language arts part of the SRA test as 7th and 9th graders. This level of BSMT mastery has not yet been achieved on Guam. I am comfortable speculating that half or more of Guam's students end the 7th grade with achieved basic literacy comparable to the international 4th-grade literacy standard. Oral language studies of Chamorro students on Guam, who comprise about 56 percent of the Guam public school population, suggest that approximately half of these students are nonEnglish or limited-English speakers in the early elementary grades and that very few have oral production skills in Chamorro (Spencer, Palomo, & Vela, 1987). It would be useful if the SRA and BSMT data were aggregated separately for fluent- versus limited-English proficient speakers or by language group, or both, because then we would be able to view English literacy separately for different oral English proficiency levels and for indigenous Micronesian students. Organized in this way, the data would aid the process of goal setting and prediction on Guam and elsewhere in Micronesia.

The highest achieved English literacy level in Micronesia (including Guam), as measured by a US norm-referenced instrument, is found in the CNMI Public School System. Using the California Achievement Test (CAT), the CNMI has tested reading, language, and various content areas since 1986. For the 1988–89 academic year, the CNMI public school 7th-grade students scored at the 28th percentile in reading and at the 27th percentile in language. Comparisons of reading scores made for matched cases, using Spring 1988 and Spring 1989 data, showed improvement from the 30th to the 36th percentile. A similar comparison on the language test showed improvement from the 33rd to the 38th percentile. The average grade-equivalent performance in Spring 1989 for the CNMI public school 7th graders was Grade 4.6. Thus, the average public school student in the CNMI has achieved English literacy above the international 4th-grade standard.

The CNMI English reading results raise several points deserving of future research. Observational data in the CNMI documents a student body that is predominantly bilingual, exhibiting high levels of oral proficiency in Chamorro and Carolinian and moderate levels of oral proficiency in English. Research documenting the achieved literacy of CNMI students in the first languages, and the relationship of first language literacy to achieved English literacy levels, could shed light on successful literacy and overall language instruction strategies for Micronesia. These data would be particularly relevant for the CNMI and Guam Chamorro student populations.

First Language Literacy

Very little research has been done in Micronesia on first language achieved literacy. In many of the school systems, criterion-referenced reading tests have been developed from time to time. However, most suffer from validity and reliability problems. A major shortcoming is that they tend to concentrate on short-answer, true/false, or multiple-choice questions addressed to a word or two, a few sentences, or to very short passages. The level of intrinsic complexity of passages is undocumented in these tests. Thus, the results of these tests are hard to interpret. Reading researchers have long debated how reading comprehension is best measured; however, many now agree that whole stories or long passages, constructed as meaningful units of narrative, are more appropriate vehicles for engaging the examinee in an authentic reading process that can then be evaluated via questioning and discussion with the examinee (Johnston, 1983). Research on Kosraean and Marshallese reading skills, using instruments constructed upon these guidelines, is now available. I present them here merely as selected examples of first language literacy in Micronesia. There are still many rough edges on the methodologies used, so these data should be regarded rather tentatively as indicators of achieved first language literacy.

In an evaluation of the Kosrae Bilingual Education Program (Tilfas and Spencer, 1990), a random sample of the 7th-grade students was selected, assessed for Kosraean reading comprehension skills, and retested 2 years later. The test was constructed by indigenous language specialists, with my guidance on the psychometric considerations. They created five stories with a level of difficulty they judged to be appropriate to 7th grade. Each story was one to two pages long, with five questions. There was one question for each story that addressed each of five different reading comprehension skills:

main idea, sequence of events, cause-effect, conclusion, and critical analysis. Each correct answer was worth 20 points. A parallel English reading comprehension test was developed, using text from a 5th-grade US basal reader, and administered to these same students.

The mean pretest total Kosraean reading comprehension score was 383.27 with a standard deviation of 61.88 and the mean posttest score was 391.07 with a standard deviation of 56.04. The pretest-posttest difference was not statistically significant for the specific skills or for the total. This may have been because pretest performance was high and there was little room for growth on this particular test. No student had a perfect score on the posttest, but several were close, having missed only 1 or 2 items.

These results suggest that Kosraean reading comprehension is a strong skill for most of the students in the sample. On the posttest, students obtained an average of 78 percent correct (about 19–20 questions correct of a possible 25), and an average of 77 percent correct on the pretest. Conclusion and critical analysis skills proved to be the most difficult, with students doing very well on main idea, sequence of events, and cause-effect. On their best skills students obtained about 86–88 percent correct, and on their worst they obtained about 57–71 percent correct.[4]

The same 7th-grade students in Majuro and Ebeye, for whom DRP English data were presented earlier, were also tested for ability to read a simply worded newspaper article in Marshallese. An article of about 400 words was selected and prepared in cloze testing format, replacing every fifth word with a blank. Students were told to read the article and supply the missing words. The test was scored for the number of exact productions provided of the missing words. Indigenous Marshallese language specialists also scored it for answers that were synonyms or that otherwise made sense in context. Misspelling was permitted. Results show that the achieved Marshallese literacy skills of these students are quite undeveloped. Several students approached me during testing to say that they did not know how to read in Marshallese. Of 73 missing words, the 150 Marshallese students averaged 10.47 correct when the exact word scoring method was used. Using the "any word that makes sense" scoring method, the average was 15.59. This is 14 percent correct under exact scoring and 21 percent correct under the more liberal scoring system. Bormuth's (1971) guidelines for interpreting cloze performance places these scores in the low to mid-range of the *Frustration* category—that is, on average the Marshallese students could read the newspaper article only with extreme difficulty or not at all.

From these two examples of research on first language achieved literacy in Micronesia it should be clear that first language literacy will be a function of the effectiveness and duration of the instructional process and that this process will vary from place to place. Until more work is done on the development of valid and reliable reading comprehension instruments in Micronesian languages, and well-sampled data collected with them, the achieved literacy of most places in the region will not be known with certainty. The Marshallese results should serve as a caution: If sound curriculum and instruction are not applied to first language instruction, and if regular instructional periods are not dedicated to it, first language literacy will not develop automatically. Given the difficulty of developing English literacy in Micronesia, Micronesian students are in peril of complete illiteracy even after an 8-year educational investment, when the indigenous language instructional program is neglected. Ironically, first language literacy should be the most feasible to develop in Micronesia. Not only are the indigenous languages the languages in which the majority of teachers are fully proficient, but also research shows that people learn to read most readily in the language they already speak fluently (Swain, 1981). Moreover, first language reading skills transfer readily to second language reading skills. Cummins (1981) reviewed a series of studies that support his theory that the development of first language reading skills creates a foundation of underlying cognitive skills that transfer to the second language reading process.

Any discussion of first language literacy in Micronesia would be incomplete if it failed to refer to Donald Topping's comments on the role of literacy in Micronesia (1984). Topping has written forcefully about "the tyranny of literacy" (p. 28), by which he refers to the profound influence he believes alphabetic literacy can have on the way people think. He sees this as the greatest single threat to the island languages and cultures, especially because the spread of literacy in Micronesia is primarily through an alien language:

> The change from oracy to literacy is in itself a drastic one. Probably the impact would not be so severe if the change were taking place in the indigenous languages of the islands. However, it is quite apparent that the shift from oracy to literacy is being accomplished through a shift in languages as well, i.e., from Micronesian languages to English. Therein lies the ultimate danger of language loss. (p. 29)

To judge the validity of Topping's concern, much more information is needed. Are there any Micronesian language groups for which the change from orality to literacy is occurring in the indigenous language to a greater

or equal degree relative to the achievement of literacy in English? Kosrae and Palau may offer promising research sites for exploring this question. Are there any Micronesian language groups for which the change from orality to literacy is being achieved exclusively in English and, where this occurs, what is the oral proficiency status in the first language? In such places, what is the effect of large versus small amounts of oral English contact? What is the relative prestige of the first language and English? Does oral proficiency in the first language serve important practical purposes, and how does this practical use compare with the utility of English literacy?

THE LITERACY CURRICULUM IN MICRONESIA

Overview

There are no records of written language among Micronesians prior to contact with explorers, traders, missionaries, and military contingents from other parts of the world. However, there are pictographic representations in caves in Inarajan and Talafofo, Guam. In the post-contact period, missionaries played the dominant role in developing written language materials. In collaboration with indigenous church members they created spelling systems in most of the languages, translated the Bible and other religious materials, and taught their new adherents to read. Shifts in colonial authority over time and, later, the influence of US educational trends caused fluctuations in colonial preferences for development of and emphasis on written materials in the indigenous languages versus those in the colonial languages. Thus, from the time of contact, materials pertaining to religion, secular education, commerce, government, and personal communication existed in the indigenous languages and in Spanish, German, Japanese, or English. But the number of individuals who could read and write in one or more of these languages was very small until mass education based on literacy emerged after World War II (Anttila, 1969).

Little documentation exists describing the educational materials used in the schools of Micronesia between 1945 and the late 1960s. Generally speaking, materials in both English and the first language were used. Teachers apparently developed many materials, but severe shortages and the lack of an organized curriculum are documented (e.g., Republic of the Marshall Islands *Language Arts Curriculum Framework,* ca. 1988). In the 1960s,

large numbers of American contract teachers were brought to the TTPI and an English-only instructional philosophy was in force for a time. In 1968, the Tate *Oral English* language series (Klingbergs, 1985; Tate, 1971) and the related South Pacific Commission reading series were introduced. In that year, Gloria Tate, the Australian author of the audiolingually designed series, came to Micronesia as a consultant. These materials served as the mainstay of language arts education not only in Micronesia, but also throughout the South Pacific for the next 20 years.

In 1973, a language policy conference was held on Rota, CNMI, at which the English-only policy was repealed. This decision opened the way for new developments in first language curriculum and instruction, but did nothing to improve English language arts education. The Tate *Oral English* and the SPC materials remained the ubiquitous curriculum of English literacy until the mid-1980s when researchers from Guam and Fiji began producing evidence of the ineffectiveness of this curriculum (e.g., Elley, 1981; Elley & Mangubai, 1981; Knight, 1987; Spencer & Langmoir, 1987).[5]

The current trend in Micronesia, excluding Guam, is to replace the Tate/SPC English materials with US-produced basal reader series. American English language textbooks for science, math, health, and social studies have also been introduced. The regional investment in US textbooks in just the past few years has been millions of dollars, although students are able to read very few of them (Tables 4 and 5). In many schools in Micronesia there is a significant shortage of materials of any kind. The shortage has particularly severe effects in Grades 1 to 4 or 5 because the US materials are too difficult to be used in the early grades and also because of policies for introducing indigenous language reading no sooner than about the 2nd grade and English reading instruction in about the 3rd grade. The shortage of literacy materials is likely to worsen because the number of students is increasing, the amount of money available for educational expenditures is decreasing, and the US textbooks are very expensive and like all paper materials they do not stand up well to the tropical climate of Micronesia.

In the 1970s important developments occurred involving the indigenous language materials. Programs at the University of Hawai'i undertook the development of new orthographies in many Micronesian languages, the development of dictionaries and reference grammars, the training of curriculum writers and indigenous linguistic specialists, and the development of school materials by the curriculum writers and specialists who were being trained. These programs were implemented under the auspices of the Pacific and Asian Language Institute (PALI) and the Pacific Area Language Material

(PALM) center (see Gibson, 1983; Goetzfridt & Goniwiecha, 1990; Spencer, Woo, & Aguilar, 1990). In 1983 federal funding for material development centers such as PALM was discontinued, an event that severely disrupted the development of local capacity to produce school materials in the indigenous languages of Micronesia. Soon afterward, the eligibility of the Freely Associated States of the region (the RMI and the FSM) to obtain Title VII Bilingual Education grants ended. The RMI had not used this source of funding for several years; but Title VII grants had been a mainstay of personnel and material development funds in the FSM. In the FSM the federal bilingual grants were replaced by fragmented, insufficiently supported local efforts to continue the writing and printing process. These problems were exacerbated by continuing controversies over the acceptance of the new orthographies designed by the professional linguists, often leading to a local paralysis centering around the question of whether materials could be produced for the schools at all until consensus could be reached on orthography. The absence of printing presses and a publication industry, the unfamiliarity of curriculum writers with the client-printer collaborative process, and breakdowns in the procurement and payment process are all factors that contributed to the lack of needed first language materials. Palau, Guam, and the CNMI continued developing first language materials, within their federally supported bilingual education programs and, on Guam, through the locally funded Chamorro Mandate Program.

Three profiles can be drawn of the literacy environments of Micronesian students in the early 1990s: the outer-island or outer-village profile, the capital center profile, and the Guam/Saipan profile. Each profile contains biliterate materials and bilingual oral communication opportunities. If one asks specific questions about the achieved literacy in any entity in Micronesia, the answers will be found in both the formal and the informal literacy curriculums in each context.

Profile of the Outer-Island/Outer-Village Literacy Environment

In the outer-island and outer-village areas the indigenous language is the predominant language of communication in all linguistic domains. Usually, only a few individuals will also be fluent in English. The primary sources of written materials in the first language are religious materials such as the Bible (particularly the New Testament), hymnals, and prayers. Personal

letters written in a variety of individualistic orthographies are also commonly observed. In some outer-island/outer-village literacy environments, first language school books are available, but sometimes in scarce supply (e.g., Pohnpei and the Marshall Islands) and sometimes in more plentiful supply (e.g., Walung, Kosrae; Peleliu, Palau). In the FSM, where cultural and linguistic diversity is great, the indigenous Micronesian language materials found on outer-islands may not correspond to the dialect or language spoken there. Mass media print forms such as newsletters and newspapers in either the first language or English are rarely seen. English print will typically be seen on commercial food and household products, on medicinal products, in government and commercial documents, and at schools. In many environments within this profile there are very few school materials in either language. Those that do exist may be battered and incomplete sets of the Tate oral books and SPC readers, augmented by US basal readers and content area (e.g., science or social studies) textbooks. The recent extensive marketing efforts of US textbook companies mean that some of their books will reach some of these schools. The supply will likely fall short of the number of students and the copyright date will be early in the 1980s or before then. In some of these environments odd collections of used books donated by the US Navy and visiting yachts will be found, sometimes tossed aside or even left out in the open weather because of perceived irrelevance to the purpose of schooling. Depending upon the inclination and training of educators, one may or may not find bulletin boards, learning centers, and student work displayed. In most such environments, there will be no school or community libraries; however, there are some notable exceptions to this such as the library at the Outer Island High School on Ulithi Atoll in Yap State.

Although school policies require daily school attendance by all children beginning at 6 or 7 years of age, many students begin school at a later age and attend irregularly. A review of first and second language curriculum frameworks shows that reading instruction is usually not begun until the 2nd or 3rd grade.

Profile of the Capital Center Literacy Environment

A more balanced oral bilingual environment exists in capital center settings. In these environments, because of the proximity to major government and commercial activity, English, and to a lesser extent Japanese, are part of the interaction picture. The first language prevails as the language of oral

communication, except with tourists, visitors, and the small number of American expatriates still filling government positions. The *Pacific Daily News,* the American English language newspaper printed on Guam and distributed regionally, is brought in with every Air Micronesia flight from Guam. It is read primarily by professional people and often it is read over the radio. In Majuro, two bilingual newspapers are printed each week and sold in heavily frequented public places. First language government newsletters are available sporadically, with a circulation of a few hundred in some centers. The main sources of first language materials are religious materials in the old orthographies, the constitutions of the several political entities, and small collections of school books in the new orthographies. First language school books usually concentrate on legends and other stories but some materials on health, science, and math have been prepared. As in outer-island outer-village contexts, formal reading instruction in the first language and in English does not usually begin until the 2nd or 3rd grade.

In the public environment, there has been an increase in the number and variety of signs, labels, announcements, warnings, and advertisements appearing in the first language (usually in the new orthography), as well as in English. The school environments contain the same types of English materials listed for outer-island/outer-village schools, but the quantity and subject diversity are greater. Still, extreme classroom shortages of school materials are common in many places. Religious materials in English are more plentiful. Specialized displays of English books are for sale in grocery, variety, and office supply stores. The selection emphasizes fiction for both adults and children. In Majuro, Pohnpei, and Koror small public libraries have been developed and contain primarily English materials.

Most legal and government documents are produced in English. Hospitals and health centers utilize English language materials, but they post public information about maternal-child health care and threats of contagious diseases in the first language. Personal correspondence in the first language, with personalized spellings, flourishes, as does English for this purpose. The signs, announcements, schedules, and forms found at airports are predominantly in English, with a nod to the Japanese tourist. Television in the form of video cassettes exists in all of these environments and provides an English oral input and a small amount of written English input. The availability of broadcast television in Majuro, Koror, and Yap expands this type of English input. A Majuro channel has daily broadcasts of locally made video tape recordings of interviews, celebrations, and other important events, all communicated in Marshallese. There are radio broadcasts in all of these envi-

ronments, with predominantly first language content. In Majuro, Pohnpei, and Koror, community colleges are also reservoirs of English language books and materials.

Table 6 shows the results of an ethnographic study conducted by Bird and Kirschenmann (1981) in Yap proper to document the types of nonprinted nonmass-produced Yapese writing and the mass-produced materials printed in Yapese. They concluded:

> Contrary to apparent popular opinion, the Yapese are for the most part a highly literate people for they actively make use of their language in written form in their everyday lives. Our data is [sic] doubly extraordinary in that it contradicts predictions made by literacy experts. Very little of the written Yapese which the Yapese people read

Table 6 *Yapese Written Materials by Sector and Product*

Sector	Product
NON-PUBLISHED	
Public	
Churches	Banners/Poster/Signs
Stores/Bars	Posters/Signs
Governmental Agencies	Posters/Signs
Agriculture	
Public Works	
Education	
Semi-Public	
Clubs	Signs/Meeting Minutes
Teachers/Principals	Notices to Parents
Workers	Inter-Departmental Reports/Memos
Private Individuals	Letters/Notes/Poems/Songs/Lists/Journals/ Manuals
Miscellaneous	Graffiti
PUBLISHED	
Church	Bible/Catechism/Hymns
Government	Constitution/Draft Compact of Free Association/ Voting Ballots/Public Health Notices/ Pamphlets/School Publications/School Report Cards/Information Brochures/Booklets
Private	T-Shirts/Greeting Cards

Source: Bird and Kirschenmann, 1981.

> is printed and mass-produced. It is crucial to understand that the uses of literacy skills listed in the
>
> charts—especially Chart I—are not just isolated or infrequent phenomena, but are very common occurences. (p. 7)

Profile of Guam-Saipan Literacy Environment

These environments most closely approximate those of a Hawaii or US West Coast literacy environment, with Guam having the greater similarity. On Guam, the advocates of the indigenous Chamorro language struggle to increase its prominence after years of decline. A vigorous Chamorro Language Mandate Program in the schools, an active Chamorro Language Commission, and an increasingly influential Organization of People for Indigenous Rights may be credited with the language restoration process now underway, signs of which include the following: (a) locally funded mandatory Chamorro language instruction for 20 minutes per day for all public school children; (b) the development of effective school materials and teacher training to support this program; (c) daily Chamorro language inserts in the *Pacific Daily News;* (d) bilingual Chamorro-English signs on all public buildings and public places; (e) Chamorro language radio and television programs; (f) a blossoming Chamorro language music and entertainment industry; (g) bilingual ballots; and (h) bilingual documents of governmental importance (e.g., the Guam Commonwealth Act proposal). Legal and governmental documents are usually produced only in English. Most print and electronic mass media and most commercial and school materials are in English. English has become the dominant vehicle for oral and written communication on Guam.

In the CNMI, Chamorro and Carolinian are the dominant community languages, Chamorro being the more dominant. Many speakers of Carolinian and other nonEnglish languages in the CNMI also learn to speak Chamorro. Chamorro and Carolinian entries appear regularly in the predominantly English newspaper. The Chamorro bilingual education program has produced a substantial collection of school materials in Chamorro. Many materials have also been produced in Carolinian. But English preferences are growing in ascendancy. The practice of parents speaking to children exclusively in English is becoming more common each year—a phenomenon that has played a major role in the decline of Chamorro on Guam (e.g., Odo, 1987).

In both Guam and the CNMI, school attendance is mandatory beginning at age 5 or 6, and is relatively regular in the elementary grades. Reading

instruction in English begins in 1st grade. Reading readiness is provided in Head Start and kindergarten programs. In Guam's bilingual and Chamorro mandate programs, emphasis is on oral language development. In the CNMI's Chamorro bilingual program, Chamorro and English reading and writing instruction begins in the 1st grade; the Carolinian program calls for literacy instruction at this level too, but has not fully implemented it to date.

APPROPRIATE LITERACY EDUCATION IN MICRONESIA

Discussions about what constitutes appropriate education in Micronesia are, and will continue to be, contentious because they are essentially value-laden attempts to predict the economic and social future of the region on the basis of very uncertain information. What is not debatable is the fact that every educational policy document and curriculum statement on language development in the region declares that English oral fluency and literacy are to be attained by the end of elementary school. Most such documents, with Guam the exception, also declare that literacy in the indigenous languages is expected by the end of schooling. To this end, educational bureaucracies have been established in every political entity in Micronesia, all of which are larger than any other government department. The two major post-Compact evaluations of education, studies done in the RMI (Academy for Educational Development, 1989) and the FSM (Grossman, Drier, & Starr, 1990), both hinge on assumptions and recommendations supportive of English language literacy, and to a lesser extent, indigenous language literacy. It is safe to conclude that as a matter of official policy, literacy in English is expected in every entity in Micronesia, and literacy in the indigenous language is expected everywhere except Guam.

It is less clear what criterial levels of literacy are expected in English and the first language, and in which usage domains (e.g., home, school, church, vocational) certain criterial skills are expected. The census and school statistical data for the region are more or less assuring that the majority of school-aged children in Micronesia in the past few generations have completed the 4th grade. The English test results on achieved English literacy in the RMI, FSM, and Palau, however, document only a 2nd grade level of literacy at the end of 7 years, a time near the end of schooling for most of these students. Anderson and Bowman (1965) project that a 40 percent literacy proportion is required for economic development to occur and a 70 percent to 80 percent literacy proportion for rapid economic de-

velopment to occur.[6] If this is taken to mean 4th grade achieved literacy in English, a sufficient proportion of students from the RMI, FSM, and Palau have not achieved a literacy level commensurate with expectations of economic development. Prospects are more promising in the CNMI and Guam, but universal literacy at this criterial level in English is still elusive even in these settings.

Test data on achieved first language literacy, though still sparse, are not encouraging. Kosrae, with its substantial collection of Kosraean materials and daily reading and writing instruction programs in Kosraean, sets an example for the development of the first language literacy resources. Preliminary results of a major study of Palauan reading and writing proficiency at grades 7–12 suggest that Palau's bilingual education program also demonstrates an effective process for achieving first language literacy (Spencer et al., 1991). But fieldwork in most school systems in Micronesia yields observations that too little systematic first language reading and writing instruction is provided per day, too few first language reading materials exist, and first language reading and writing instruction begins 1 to 2 years too late to produce achieved literacy in the first language. The Marshallese test results are probably indicative of the status of first language literacy in most islands in Micronesia. Johnson's reports (1988, 1989) of 100 percent literacy in Marshallese appear unfounded. Further research is needed to explore the common claim that most Micronesian adults can read the Bible. However, it appears that by the end of elementary school, most of the current generation of Marshallese students cannot read a Marshallese newspaper article with comprehension. Anderson and Bowman's (1965) literacy-for-development criteria probably cannot be met in Micronesia in the indigenous languages either.

If the majority of Micronesian youths who complete elementary education are not literate in either English or their first language, and if the students on Guam and in the CNMI seem to be the most advantaged in literacy skills, at least in English, and given the declining financial prospects for education in the areas most lacking in literacy, what then is appropriate literacy education in Micronesia, beyond Guam?

Some answers to this question simply require the reversal of obvious current deficiencies in the FSM and the RMI school systems: Mandatory school attendance at 6 years of age should be enforced; reading and writing instruction in the dominant community languages should begin as soon as students enter school; an abundant supply of children's literature and textbooks in the dominant Micronesian language and in English should be avail-

able to every school; increased teacher and principal educational attainment should be required and organized. South Pacific schools face many of the same educational problems as schools in Micronesia do, and leaders there have brought educational research and innovation to bear on these problems in ways that deserve attention in Micronesia. Certainly, experiments such as the Book Flood in Fiji (Elley & Mangubai, 1981; Mangubai, 1987), and the South Pacific Literacy Project (e.g., Moore & Mooney, 1989) offer examples and direction for the design of appropriate literacy education in Micronesia. Much the same formula should be effective on Guam and the CNMI, especially for the large numbers of Palauan, Chuukese, Pohnpeian, and other Micronesian students who have immigrated there in the past few years.

Thus far, relatively little attention has been given to the development of adult literacy programs in the Micronesian region. These will become increasingly appropriate as modernization expands in Micronesia, particularly in the capital centers, and as the cost of education, combined with declining resources and expanding population, lead to a smaller proportion of high school-aged students being admitted to and graduated from high school. It will also be important in Guam, where nearly half of the students who enter high school drop out before graduation (Cristobal, 1987). If development per se is also a producer of literacy, as some have argued (Blaug, 1985), then the price of commercial opportunity in Micronesia could be made to include well-designed adult education for employees. In many parts of the region, religious organizations operate schools that enroll a substantial portion of the school-aged population, often subsidized with public funds. The historic contribution of religion to literacy is considerable. Recognition of the need for renewed literacy work by the churches in both the first language and English for both school children and adults would be of great benefit. Utilization of the new orthographies for religious materials could significantly stimulate the climate for developing first language materials. All types of media can be used to address broadly aimed literacy campaigns in Micronesia: print, radio, television, individual and group tutorials, and formal course work.

Most important to an appropriate literacy curriculum in Micronesia is the recognition that achieved literacy is not widespread either in the home language or in English in most parts of the region; therefore, explicit literacy curriculums for the entire region are necessary. Moreover, the evidence presented in Table 4 shows that mere school attendance through the 4th grade (the basis of *estimates* of literacy) is not a valid measure of literacy

for Micronesia. Evidence from direct tests of achieved literacy by individuals is needed for sound economic and educational planning in Micronesia.

This article began with a discussion of the link between investments in education (i.e., literacy) and payoffs in economic development. The results of field observation and test data presented here do not argue against such a link. Rather, they argue that the investment made in Micronesia in education and literacy needs to be better managed. The advice given on appropriate literacy education in Micronesia is intended to help the process of fine tuning the management of the education-literacy investment in Micronesia. Without a commitment to strengthening this management, and to striving for universal literacy in Micronesia, future educational investments will be losses, too. As long as the education-literacy link in Micronesia is weak, it is not possible to assess the validity of the education-economy link. The policy direction advocated here consists of two initiatives, which I believe capable of maximizing the education investment in spite of the uncertainty regarding its function in the formula for economic development: (a) strengthen the education-literacy link by improving instructional effectiveness in the schools, as outlined above; and (b) simultaneously exploit the literacy-inducing impacts of development. The second initiative could include tourist taxes to benefit the schools and requirements of commercial ventures that lead to literacy classes for employees, contributions to material development centers, school and public library funding, and the financing of local newsletters or newspapers. If neither initiative is well taken, progress toward greater national self-sufficiency will be stalled. However it is garnered, basic literacy is an essential ingredient in the vocational and technological capabilities needed by developing nations.

Notes

1. Micronesia is defined here as including Guam, the Commonwealth of the Northern Marianas Islands (CNMI), the Federated States of Micronesia (FSM) (which consists of Chuuk, Kosrae, Pohnpei, and Yap), the Republic of the Marshall Islands (RMI), and Palau. Because Nauru and Kiribati were administered apart from the former entities following World War II, they were not included in this study. All of the former entities have followed American education models during this developmental period. Nauru and Kiribati have followed British Pacific models.

2. Completion of Grade 4 has been chosen for illustrative purposes in Table 2 because this criterion is in common international use; however, there are problems with this criterion. The problems associated with the meaningfulness of four grades of

schooling are the same as those inherent in any census-based estimate. The nature of literacy skills and the criterial levels of literacy that can be expected to result from formal schooling are not specified by this international convention, and the different types and amounts of instruction experienced by the students during these years of formal schooling are unexplained.

3. In the early stages of this research, several tests of English reading performance were pilot tested with Micronesian students. The Science Research Associates (SRA) reading achievement test, which is used annually in Guam public schools, seemed to provide an intolerable task to many youngsters outside of Guam because of its tightly timed and lengthy format. The similar format of several other US achievement tests led me to estimate that they would present the same disadvantages. A multiple-choice criterion referenced test was developed and used at most sites along with the DRP. The former contains four complete stories, one to two pages in length, that were adapted from a popular 5th-grade US basal reader. Although students seem almost to enjoy taking this test, the results have a narrow interpretive value because of the lack of a broad empirical validity and reliability research history on the test.

When I first pilot tested the DRP, it was clear that students tolerated it much better than they did the SRA. The DRP format is more in keeping with current reading comprehension assessment views that favor longer narratives that set up an engagement in authentic reading and an assessment *during* the process of reading. It is paced rather than tightly timed. Students are given up to 1 hour to complete the test. Almost all students complete the test before this deadline. Cloze test formats require that the test taker read a sentence in a narrative context and fill in any missing words. In the DRP, one or two words are missing in each 3- to 5-line paragraph. A set of four possible alternatives for the missing word is listed in the margin near each missing word blank. Catching on to what the cloze procedure expects of them, especially in a second language they are acquiring, may be tricky for students at first. However, the DRP test is preceded by two sample cloze questions, which appear in their test booklets and which the examiner explains aloud to the whole class. In all of the test administrations in this research, these two examples were also explained aloud to the group by the indigenous teacher, who answered questions and looked for confusion that might signal that further explanation was needed. Moreover, most 7th-grade Micronesian students have already had repeated experiences with cloze test formats because the Micronesian Achievement Test Series, which uses a cloze format, was used extensively throughout Micronesia until about 1987. It is undeniable, however, that any US achievement test will embody cultural bias when used with Micronesian students. This is true primarily because test content will reflect the content of US textbooks and the real or assumed environmental genre of American children. Thus, the reader must keep in mind that the DRP test results presented in this paper may well be a better predictor of how literate the students are in reading the US textbooks in their schools, or in the postsecondary institutions of the region, than they are a predictor of reading skill with locally developed English materials.

4. On the parallel English reading comprehension test, these same students obtained 57 percent correct. Although structurally parallel, I do not assume the English and Kosraean tests are of equivalent difficulty. Because there are no readability indexes in Kosraean, it is not yet possible to guage the inherent difficulty of Kosraean text. Moreover, the development of tests that are equivalent across languages is fraught with

complexities that have not yet been mastered in Micronesia (e.g., Merino & Spencer, 1983).

5. Guam was the only exception to the SPC curriculum pattern. On Guam, US textbooks have been used for several decades.

6. Although considered speculative by some, Anderson and Bowman's (1965) projections are cited here as a preliminary benchmark. Future literacy work in Micronesia should more analytically address questions of which types of literacy and which criterial levels are needed by the incoming economic development opportunities, and what proportion of the population will be affected. The impact of rising literacy in Micronesia will not imitate that of nineteenth century industrializing continental areas such as those in Canada or Europe, as described by Graff (1979) and others. Instead, the impact of literacy in Micronesia will revolve around the demands of tourism work and the government and commercial sectors of Pacific island society. Differential impacts on central municipal areas compared with outer-village or outer-island areas may bear some similarity to the differential impacts described by Fuller, Edwards, and Gorman (1987) for urban versus agrarian sectors of 1940 Mexico. However, it is reasonable to assume that the character of impacts that result from rising literacy in the Pacific island environments of Micronesia, and the proportion of literacy required for various types of economic growth in these island states, will have unique qualities.

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Schizophrenia and Chronic Mental Illness in Micronesia: An Epidemiological Survey

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A community-based epidemiological survey using key informants and facility records in case finding was undertaken to understand better the occurrence of severe mental illness in Palau, the Federated States of Micronesia, and the Republic of the Marshall Islands. The goal of the survey was to identify all cases of schizophrenia and chronic psychosis, including affective psychosis and paranoid delusional disorder, using community identification of abnormality rather than formal psychiatric diagnosis. The average prevalence rate for schizophrenia and chronic mental illness was 5.4 per 1,000 population, with a range of 3.2 to 16.7/1,000. Although rates varied greatly in different island groups—Palau's rate was almost twice that of Yap (the next highest area) and several times higher than rates in eastern Micronesia—the rates fall within accepted prevalence ranges established across cultures for schizophrenia. In Micronesia, schizophrenia and chronic mental illness were heavily weighted toward males, who constituted 77 percent of the total sample and outnumbered females by a ratio of 3.4/1.

The mentally ill have become a common feature of the social landscape in Micronesia in the last decade. One encounters them on the road wandering from place to place, often garishly dressed (or undressed), stopping people to beg cigarettes and engaging them in bewildering con-

ISLA: A Journal of Micronesian Studies, 1:2. Dry Season, 1992, 329–54

versation, usually in fluent English. Others, far less visible, skulk in their homes and have dealings with almost no one other than their most intimate relatives. Many, if not most, of these people would be psychiatrically diagnosed as having some form of severe thought disorder or "psychosis." Schizophrenia is a common diagnostic category of such psychosis and typically reflects the presence of hallucinations and delusions in addition to severely disturbed thinking. Psychotics, like the poor, may be with us always, but the impression of many Micronesians is that mental illness is a growing problem in their societies, particularly among the young.

The problem of mental illness has not gone unattended, however. In 1974, the former Trust Territory Headquarters hired a staff psychiatrist and a clinical psychologist to run its first mental health program and to assist personnel in the districts. In subsequent years, as the Division of Mental Health took shape, the first serious attempt was made to collect data on mental illness in Micronesia. Drawing on the monthly reports submitted to headquarters for the years 1977–1980, Dr. Paul Dale, a former staff psychiatrist, published an article comparing rates of schizophrenia in different parts of Micronesia (Dale, 1981). Some of the data collected by Dale are presented in Table 1. Dale noted the relatively high rates of schizophrenia in Yap and Palau and the extremely low rates reported for some of the remote atolls. During the same time period, a psychiatric resident from Loma Linda Medical School conducted a 3-month study of schizophrenia in Palau that showed a heavy preponderance of male victims. He and his colleagues attributed the high male rate of illness in Palau to the "relatively recent and rapid disintegration of the traditional culture" (Kauders, MacMurray, & Hammond, 1982, p. 101) and to rampant drug use among men (Hammond, Kauders, & MacMurray, 1983).

The epidemiological survey reported here attempts to explore further the patterns of schizophrenia and chronic psychosis using community-based case-finding methods rather than the more limited mental health case records of earlier psychiatric researchers in Micronesia. We present findings on some of the more striking distribution patterns of psychosis in Micronesia and raise pertinent questions about the relationship between these patterns and the features of the sociocultural environment of present-day Micronesia. We should note, however, that the methods of this survey are limited by the lack of psychiatric resources in Micronesia that are necessary to develop thorough and formal diagnostic work-ups of those people identified as having severe mental illness. Therefore, this report might be best represented as an informal epidemiological survey that emphasizes community perceptions

Table 1 *Prevalence of Schizophrenia and Chronic Mental Illness in Micronesia, as Reported by Dale (1981)*

Location	Population (Age 15+)	# Cases Schizophrenia	# Cases Bipolar Psychosis	# Cases Depressive Psychosis	Specific Rate Schizophrenia (per 1,000)	Specific Rate Schizophrenia & Psychosis (per 1,000)
Palau	8,264	63	5	10	7.6	9.4
Yap	6,009	40	1	9	6.7	8.3
Chuuk	18,279	40	1	3	2.2	2.4
Pohnpei	13,206	17	3	5	1.4	1.9
Kosrae	2,568	3	1	0	1.2	1.6
Marshalls	13,481	11	1	0	.8	.9
Total	61,807	174	12	27	2.8	3.4

Note. Data compiled using DSM-II (American Psychiatric Association, 1968) diagnostic criteria and US Trust Territory mental health records. Data in columns 3, 4, and 5 are reprinted with permission from the *Journal of Psychiatric Research, 16,* Paul W. Dale, Prevalence of Schizophrenia in the Pacific Island Populations of Micronesia, 1981, Pergamon Press Ltd.

and schizophrenia. We review literature on epidemiological methods used in the study of schizophrenia, which indicates that a variety of diagnostic practices have been used when examining the occurrence of schizophrenia. In the context of this review, our use of community perceptions in the identification of schizophrenia and chronic psychosis represents a "broad" definition of schizophrenia.

EPIDEMIOLOGY OF SCHIZOPHRENIA

Researchers in the field of epidemiology study the presence of disease by using measures of mortality (death from disease) or measures of morbidity (the occurrence of disease), or both. Ongoing chronic conditions with low mortality rates—like schizophrenia—are usually studied by using measures of morbidity, including incidence, prevalence, and expectancy (Mausner & Kramer, 1985; Westermeyer, 1989). As shown in Table 2, different rates of occurrence of schizophrenia are provided by different measures. *Incidence* provides a measure of disease onset, or the development of new cases in a previously healthy population during a period of time (e.g., 1 year). Rates may be presented as crude rates—the ratio of new cases over the total population—or as specific rates, which allow further examination of disease dynamics within subgroups of a population (Mausner & Kramer, 1985). In the study of schizophrenia, the population at risk is often considered to be those in the age range of 15–54 (Jablensky et al., 1992) and schizophrenia morbidity rates are sometimes expressed as a specific rate: the number of identified cases over the population at risk (age group 15–54). As Table 2 shows, the incidence of schizophrenia is typically less than 1 per 1,000 population, although variation in the rate can be observed.

Prevalence rates refer to the presence of an illness in a population at a given time and includes both newly developing cases and ongoing cases of illness. For chronic conditions like schizophrenia, prevalence rates portray a better estimate of disease occurrence because at any given time there are more ongoing cases than newly developing cases. Consequently, as shown in Table 2, prevalence rates of schizophrenia are larger than incidence rates and reflect an occurrence of perhaps 5 cases per 1,000 population, again with rate variation present. It is possible to examine the prevalence of a disease during varying periods of time, and epidemiologists may elect to study point, period, or lifetime prevalence rates. *Point prevalence* refers to the rate of disease in a population at a particular point in time of short

Table 2 *Literature Review of Incidence, Prevalence, and Expectancy Rates of Schizophrenia*

Rate	Range (Low–High)	Reference	Comments
INCIDENCE			
.34/1000	.11–.75	Eaton, 1985	review of 12 studies in 6 countries; higher rates in US (.30–.70) than elsewhere (.11–.25); crude rates
.44/1000	.11–2.26	Jablensky et al., 1992	review of 12 studies in 10 countries; mixed rates (both crude & specific)
PREVALENCE (POINT, PERIOD, AND LIFETIME)			
3.3/1000	1.5–4.2	Cooper, 1978	review of 15 studies in 12 countries; crude rates
3.7/1000	.6–8.3	Eaton, 1985	review of 20 studies in 14 countries; point, period, & lifetime rates show only small differences; mixed rates
5.4/1000	1.4–17	Jablensky et al., 1992	review of 16 studies in 8 countries; mixed rates
5.5/1000	1.9–17.9	Nakane et al., 1992	review of 16 studies in Japan
	.6–7.1	Karno & Norquist, 1989	point prevalence; review of 10 studies
	3.6–7.3	Karno & Norquist, 1989	3–6 month period prevalence; review of 4 studies
	2.7–7.0	Karno & Norquist, 1989	12-month period prevalence; review of 7 studies
	.9–11.0	Karno & Norquist, 1989	lifetime prevalence; review of 21 studies
EXPECTANCY			
11.3/1000	3.6–26.8	Jablensky et al., 1992	review of 13 studies in 6 countries; mixed rates
	7.0–30.0	Cooper, 1978	<10 in non-US countries; >10 in US with differences likely due to diagnostic criteria and bias

duration (e. g., 1 day or 1 week). *Period prevalence* reflects the disease rate over a longer period of time, typically 3, 6, or 12 months duration, although it is possible to specify other time periods. Finally, *lifetime prevalence* refers to the proportion of a given population that at a point in time either has an active illness or has had a history of the illness. Eaton (1985), in reviewing prevalence studies of schizophrenia, concludes that these different types of prevalence measures provide similar estimates of occurrence of schizophrenia, and he suggests that this is because of the chronic, but not fatal, nature of schizophrenia. The varying procedures and methods of data collection used across 20 studies did not affect the reviewed results significantly, and Eaton reports that the obtained range of rates corresponded with those of earlier reviews.

Expectancy (also referred to as lifetime risk or morbid risk) is a theoretical statistic calculated from prevalence data (Reid, 1960) or incidence data (Jablensky et al., 1992) that reflects the probability of healthy individuals becoming ill with a specific disease if they survive or live through the relevant period of highest risk (ages 15–54 for schizophrenia). Such lifetime risk for schizophrenia is popularly referred to as "about 1 percent," which is statistically equivalent to a rate of 10 per 1,000 population, similar to the rates shown in Table 2. Cooper (1978) notes that expectancy rates for schizophrenia are often higher in the United States than in other countries (also see the Table 2 incidence comments for Eaton, 1985). This reflects a long-held diagnostic bias in American psychiatry toward a broad conceptualization of schizophrenia compared with the more restricted conceptualization found in other countries (Karno & Norquist, 1989). It is likely that much of the variation in the ranges of schizophrenia summarized in Table 2 is due to such diagnostic bias rather than to significantly different patterns of occurrence across countries, cultures, and populations. Evidence for this conclusion comes from two recent, major, mental health epidemiology projects: the US National Institute of Mental Health (NIMH) *Epidemiologic Catchment Area Study* (Robins & Regier, 1991) and the *World Health Organization* (WHO) *Ten-country study—Schizophrenia: Manifestations, Incidence and Course in Different Cultures* (Jablensky et al., 1992).

In the NIMH *Epidemiologic Catchment Area* (ECA) *Study*, coordinated and standardized epidemiologic data were collected on major mental disorders in the early 1980s across five different sites in the United States (Robins & Regier, 1991). This has been the largest coordinated mental health epidemiological project in the United States to date and is the first large-scale project to use DSM-III (American Psychiatric Association, 1980)

criteria in establishing the prevalence of psychiatric disorders. The 6-month period prevalence rate for schizophrenia in the ECA project ranged from a low of 4/1,000 (Los Angeles) to a high of 13/1,000 (Piedmont, NC) and averaged 8.8/1,000 (Burnham et al., 1987). These rates are high when compared with the prevalence rates in Table 2. Also, lifetime prevalence rates from the ECA study are higher, averaging 13/1,000 with a range from 6/1,000 to 19/1,000 (as reported in Karno & Norquist, 1989). These data suggest that the United States has a higher prevalence of schizophrenia than elsewhere, or that the ECA study employed more effective case-finding procedures than other studies have, or that there is a continued diagnostic bias in the classification of schizophrenia by American researchers. A recent World Health Organization study suggests that the last alternative is correct.

In the late 1960s and early 1970s, the World Health Organization undertook the International Pilot Study of Schizophrenia (Leff, Sartorius, Jablensky, Korten, & Ernberg, 1992) and examined patterns and course of schizophrenia in nine countries by following 1,200 patients over a 5-year period. This research established that coordinated multicenter cross-cultural research studies of schizophrenia could occur successfully and that people with schizophrenia across the cultures studied showed similar behavior patterns and symptoms. Subsequently, in the late 1970s, the World Health Organization undertook an even larger 12-site/10-country investigation of schizophrenia to provide basic epidemiologic information about schizophrenia across cultures using standardized case-finding and diagnostic tools (Jablensky et al., 1992). The research design included identification of first-time cases of schizophrenia and related psychoses during a 1-year period, thereby establishing annual incidence rates across the 10 countries. Potential cases were identified by establishing extensive community links with traditional and nontraditional social and helping agencies, including practitioners of traditional medicine and religious healers. It was estimated that about 200 cases (out of the total study population of 1,379) would have been missed without the cooperation of traditional practitioners in case finding. The research attempted to explore diagnostic bias and the effects of broad versus restricted conceptualizations of schizophrenia, and so a two-stage case-definition process occurred. First, the individuals included in the study by broad diagnostic criteria were those with "symptoms and signs which most psychiatrists would describe as psychotic or strongly suggestive of psychosis" (Jablensky et al., 1992, p. 84). Then further filters were employed to narrow and identify those with the symptoms and syndromes that would be regarded as schizophrenic only by very strict criteria. Clear cases of affective disorder

and cases with a clear basis for organic brain damage were excluded. A formal diagnosis was made of each case using both broad and narrow definitions of schizophrenia.

As reported by Jablensky et al. (1992), results of the research project showed that rates of schizophrenia were variable across countries when broad diagnostic criteria were used and that these rates were consistent with previously reported rates of the magnitudes shown in Table 2. Using broad diagnostic criteria, the annual incidence of schizophrenia across eight sites averaged .25/1,000 with a range of .15/1,000 (Denmark and Honolulu) to .72/1,000 (India). The researchers also calculated the average expectancy using broad criteria at 9.2/1,000 with a range of 5/1,000 (Honolulu) to 17.2/1,000 (India). When such broad diagnostic criteria were used, there were statistically significant differences in the incidence and expectancy of schizophrenia across each study site. However, in a major finding, there were no differences in the rate of schizophrenia across cultures when narrow or restricted diagnostic criteria of schizophrenia were utilized. Using restricted criteria, an annual incidence rate of .10/1,000 with a range of .07/1,000 to .14/1,000 was observed and an expectancy rate of 3.8/1,000 with a range of 2.6/1,000 to 5.4/1,000. These rates are substantially lower than those reported in Table 2. These researchers conclude that there is a common "nuclear" schizophrenia that occurs across cultures, as evidenced by the similar rates observed when restricted diagnostic criteria are used. It seems, then, that diagnostic bias and varying epidemiologic methodologies are responsible for much of the observed variation in rates of schizophrenia, as presented in Table 2. Given the finding of this recent WHO International study, it would be premature at this time to suggest that differences in the rate of schizophrenia across cultures have been demonstrated.

Such recent interest in the occurrence of schizophrenia across cultures provides a timely context for us to examine the epidemiology of severe mental illness in Micronesia. The data on which earlier studies of mental illness in Micronesia drew are now more than 10 years old and were probably inadequate even then. Prevalence rates were almost certainly understated because reports were derived exclusively from patients who sought hospital treatment, and the reliability of even these data depended on the thoroughness of the reporting procedures in each island group. In an effort to provide a more up-to-date and comprehensive body of data on serious mental illness, the Micronesian Seminar undertook its own survey beginning in July 1988. We attempted to draw up a complete list of individuals with schizophrenia in the Republic of the Marshall Islands (RMI), Palau, and the Fed-

erated States of Micronesia (FSM). (Herein, we shall continue to refer to these three areas collectively as Micronesia.) Our sample population included people identified in the community as having a severe thought disorder for a period of over 12 months and who, in our opinion, would likely receive a formal psychiatric diagnosis of schizophrenia or a related psychosis based on criteria from the DSM-III (American Psychiatric Association, 1980), if formal psychiatric diagnosis were to occur.

Psychosis has always had its folk explanations, and Micronesia is no different in this respect from any other part of the world. Many people, when asked about the problem of mental illness, offer a standard explanation for what they regard as a sharp increase in mental illness in the last 10 or 15 years. They point to travel abroad and high educational attainments as common characteristics of the psychotic population, implying that either or both may put such pressure on the individual as to cause a breakdown. They also attribute mental illness to the widespread use of alcohol and drugs, particularly marijuana, among the young. Because these factors are singled out so frequently by local people as causes of mental illness, the following survey also examines drug use habits, travel abroad, and level of education of our sample population.

METHOD

General

Paraprofessional researchers visited seven island centers (Chuuk, Ebeye, Koror, Kosrae, Majuro, Pohnpei, Yap) collecting information on the prevalence of severe mental illness throughout all inhabited islands of Palau, the FSM, and the RMI. Although outer islands surrounding each center were not visited, it was possible to identify individuals from each remote area presently living in the island centers and thereby gather information about cases from remote areas. Twelve-month period prevalence information was gathered at each location. Typically, from 1 to 3 months were spent at each island center during intensive data collection, with periodic follow-up over the following year. Because the Micronesian Seminar was located in Chuuk at the time of the study, particularly thorough community data were collected there over a 12- to 24-month period. Information was gathered on those people with established histories of abnormal behavior, even if they were not experiencing an active psychotic episode at the time of the survey.

Survey Information

Biographical data were collected for each identified subject, including birth date, residence, educational background, religion, travel history, and drug use patterns. To this was added illness information on disease symptomology, date of onset, history and course, community attributions of cause of illness, and treatment history, including traditional versus Western medical approaches. When available, hospital record information, including psychiatric diagnosis, was obtained. Family information was collected on marital status, children, parents, siblings, and extended family. Additional information was obtained on family history of mental illness, early family history, family conflicts, continuing family care and support, and family attributions of illness.

Defining Schizophrenia and Chronic Mental Illness

Mental illness has various manifestations, and diagnosis is far from a simple matter, as anyone knows who has picked up a copy of DSM-III or DSM-III-R (American Psychiatric Association, 1980, 1987). In this paper we are concerned exclusively with what are generally called psychoses: "mental disorders in which impairment of mental function has developed to a degree that interferes grossly with insight, ability to meet some ordinary demands of life or to maintain adequate contact with reality" (American Psychiatric Association, 1980, p. 410). We have attempted to stake out as our area of research what would roughly correspond to the DSM-III and III-R categories 290–299, with the following exceptions. We excluded from the survey those types of psychoses that were primarily organic in nature: senile dementia, arteriosclerotic dementia, and psychotic conditions attributable exclusively to alcohol or drug abuse. Hence, the organic psychotic conditions described in DSM-III under the classifications 290–294 were excluded. Moreover, we made every effort to screen out the following: individuals suffering from personality disorders; individuals who were retarded from birth and those whose mental problems stemmed from trauma or physical disabilities such as epilepsy; persons who suffer from rather severe but temporary problems, such as those who have undergone bouts of depression or those who have experienced somatoform or dissociative disorders, for example, "possession syndrome"; and those who display occasional odd behavior, but in the judgment of the community are capable of functioning rather normally. Addi-

tionally, the data in this study do not include borderline cases—that is, those in which the symptoms are not indisputably psychotic, at least by our perception, or in which the symptoms have not persisted for at least 1 year. The data, however, do include six psychotic individuals who died during the 18-month period in which this study was conducted and another three who have since died.

Although we had access to the formal psychiatric diagnosis for many of the subjects included in this study, we decided against exclusive reliance on Western medical norms in defining psychosis. In determining whether a person for whom we had no formal diagnosis should be regarded as a psychotic, we adopted a loose community-based norm. Our field workers asked informants whether the individual had been acting "crazy," at least intermittently, for a period of a year or longer. Through additional questions, we attempted to determine the nature of the symptoms and make a judgment on the severity of the person's mental illness.

Case-Finding Methods

Three methods of case finding occurred in each island center. Initially, mental health programs were contacted and information was gathered from case records and from community contacts provided by mental health staff. Second, extensive church contacts were utilized in finding cases and developing further community networks. Finally, civil authorities, professionals, and paraprofessionals—school teachers, island magistrates, Peace Corps Volunteers—were contacted. The general model of case finding was simply to ask repeatedly an expanding network of community members about any continuing (more than 12 months) strange, crazy, or inexplicable actions by people they knew of or knew.

Field researchers, conducting survey interviews in English for the most part, interviewed dozens of informants, often at great length, and laboriously pieced together the case history of each psychotic individual. Each case was checked with several informants to verify the information obtained from interviews. By the end of the survey, a compact but detailed case file had been assembled on the great majority of subjects. There remained a relatively small number, about 20 percent, who were established with reasonable certainty to be truly psychotic, but whose case files had significant gaps. In keeping with the goal of achieving maximum comprehensiveness, the decision was made to include these subjects in the survey.

Calculation of Prevalence Rates

The population statistics that were used to determine age- and sex-specific prevalence rates were based on the most recent census taken in each of the island groups, with figures representing the de facto indigenous population. Because the censuses for the Marshalls and Chuuk fell within the period of the survey, the sex-age data for the census years were used in unaltered form to calculate prevalence rates (Federated States of Micronesia, 1991, p.16; Republic of Marshall Islands, 1989, pp. 30–34). For Yap, unadjusted figures from the 1987 census were used in the absence of more recent population projections by sex and age group (Yap State, 1988, Vol. I, p. 27). Unadjusted figures from 1986 were used for Palau because the island group has shown virtually no population change over the last 20 years (Republic of Palau, 1987, p.18). Population projections for 1990 were derived for Pohnpei and Kosrae from the 1985 and 1986 census data, respectively, (Kosrae State, 1990, p. 104; Pohnpei State Government, 1990, p. 127) in the calculation of age- and sex-specific prevalence rates.

RESULTS

The survey revealed a total of 445 individuals suffering from psychosis in Micronesia. Twenty-seven percent of the cases had not been receiving care from relevant mental health programs, and many of these had not come to the attention of mental health officers. Of those cases that had been treated by mental health staff, nearly three fourths (73 percent) had received a DSM-III diagnosis of schizophrenia in one of its many forms. What was diagnosed as bipolar psychosis (manic-depression) accounted for 13 percent of the cases. Acute paranoia comprised 5 percent of the cases, psychotic depression comprised 2 percent, and assorted other diagnoses comprised 7 percent. In addition to the 445 people included in this report, case information was collected on another 136 people; however, their symptoms did not warrant inclusion in the most seriously mentally ill categories of schizophrenia and chronic psychosis.

As shown in Table 3, the overall specific rate (adjusted for the period of increased risk, i.e., aged 15 years and older) of schizophrenia and chronic mental illness throughout the islands surveyed is 5.4 psychotic individuals per 1,000 adults. There are differences in prevalence rates of schizophrenia and chronic mental illness from one island group to another. Palau's com-

Table 3 *Prevalence of Schizophrenia and Chronic Mental Illness in Micronesia*

Location	1990 Population (Age 15+)			# Cases of Schizophrenia and Psychosis			Specific Rate (per 1,000)		
	Males	Females	Total	Males	Females	Total	Males	Females	Total
Palau	3,960	3,706	7,666	89	39	128	22.5	10.5	16.7
Yap	3,220	3,069	6,289	39	14	53	12.1	4.6	8.4
Chuuk	11,946	12,544	24,490	78	14	92	6.5	1.1	3.8
Pohnpei	8,830	8,644	17,474	42	14	56	4.8	1.6	3.2
Kosrae	2,027	2,034	4,061	26	0	26	12.8	0	6.4
Marshalls	10,819	10,425	21,244	70	20	90	6.5	1.9	4.2
Total	40,802	40,422	81,224	344	101	445	8.4	2.5	5.4

Note. Ratios: Male/Female Population: $\frac{\text{Male}}{\text{Female}} = \frac{40{,}802}{40{,}422} = 1.009$

Male/Female Morbidity: $\frac{\text{Male}}{\text{Female}} = \frac{344}{101} = 3.406$

bined male and female rate of 16.7 is by far the highest in the region. It is nearly twice the rate of Yap (8.4), which has the next highest rate, and more than four times the lowest observed rates of Chuuk and Pohnpei.

One of the most startling findings in this survey was the great difference in male and female rates: The overall male/female ratio was a striking 3.4/1. For the area as a whole, 77 percent of the subjects in this survey were males, and the overall prevalence of schizophrenia for males was 8.4/1,000. The specific rate for males in Palau was 22.5/1,000, meaning that about 2 percent of the adult male population suffers from psychosis, and the male rates in Kosrae and Yap were over 10/1,000. The other three areas—Chuuk, Pohnpei, and the Marshall Islands—had male rates of 4.8–6.5.

Everywhere in Micronesia females seem to be less at risk for schizophrenia than males. The overall female rate in Micronesia was 2.5 per 1,000 adults. Despite the considerable variation in the specific rates of psychosis, ranging from zero in Kosrae to 10.5 in Palau, the female rates appear to be proportional to the total measured rates. Thus, Palau, which has the highest combined rate, also shows the highest female rate, while Chuuk and Pohnpei, areas with low combined rates, also have very low female rates. Women comprised 17 to 30 percent of the total psychotic population in each island group except Kosrae, where no females were recorded. (Kosrae, however, has had cases of psychosis among females in the past, including a woman with schizophrenic symptoms who apparently took her own life 10 years ago.)

As Table 4 shows, the mean age of Micronesian men was about 25 when they first experienced schizophrenia, but women were closer to 30. Additionally, the average age of females with schizophrenia and chronic mental illness at the time of our survey was significantly higher than that of males throughout Micronesia. There was a difference of between 3 (Yap) and 13 (Chuuk) years in the mean ages of males and females in the various island groups, with an average age gap between genders of slightly more than 7 years. Hence, females with schizophrenia and chronic psychosis throughout Micronesia are not only much rarer than males, but they tend to show symptoms of the disease later than males do.

A more precise breakdown of these patterns is shown in Table 5, which shows specific rates of schizophrenia and chronic mental illness in 10-year age and gender groups across locations. This method of presentation controls for changing population demographics and allows direct comparison of prevalence across gender, age, and location. As can be seen, the highest rates of schizophrenia for women occur in either the 40–49 age group (Yap, Chuuk)

Table 4 *Average Age at Onset of Schizophrenia and Chronic Mental Illness by Sex (and Average Age at Time of Survey)*

	Average Age			
	At Onset		At Survey	
Location	Male	Female	Male	Female
Palau	26.1	33.1	38.4	44.6
Yap	28.3	28.8	41.2	44.7
Chuuk	24.1	33.2	36.0	48.7
Pohnpei	25.2	27.0	35.0	43.4
Kosrae	23.8	—	35.5	—
Marshalls	23.5	24.3	33.8	38.6
Overall	25.2	29.7	36.7	43.9

or the 50–59 age group (Palau, Pohnpei, Marshall Islands), while the highest rates for men are in the lower 20–29 (Kosrae), 30–39 (Palau, Chuuk, Pohnpei, Marshall Islands), or 40–49 (Yap) age groups. Across the entire Table 5, there are only three instances of schizophrenia prevalence rates being higher for women than men, and this occurs in Palau (ages 40–49 and 50–59) and in the Marshall Islands (50–59). When examining the overall rate for females across age groups, the prevalence of schizophrenia generally increases with age; for men, prevalence rates decrease in older age. Over 5 percent of Palauan males in the age group of 30–39 suffer from schizophrenia or chronic psychosis (54.4/1,000).

The survey figures on alcohol and drug use also show a strong differentiation along gender lines. As shown in Table 6, 88 percent of the males have a history of moderate to heavy drug use, compared with only 36 percent of the females. The most commonly used drug, as might be expected, was alcohol; all but a very few individuals of both sexes who had a drug history were at least occasional drinkers. The clear pattern of drug use found among the subjects of this survey is one of accretion rather than substitution. Hence, all but 11 of the males and 3 of the females who smoked marijuana were also regular users of alcohol, and a much smaller number added other more potent drugs to their personal pharmacopoeia. This pattern, which seems to hold true for the Micronesian population at large, was confirmed in a recent study of alcohol use in Chuuk (Marshall & Marshall, 1990). Only a

Table 5 *Age & Sex Adjusted Prevalence Rates (per 1,000) of Schizophrenia and Chronic Mental Illness in Micronesia*

	Palau		Yap		Chuuk		Pohnpei		Kosrae		Marshalls		Overall		
Age	M	F	M	F	M	F	M	F	M	F	M	F	Male	Female	M & F
10–19	0	0	0	0	0	0	.3	0	0	0	.2	0	.1	0	.05
20–29	18.1	5.2	7.5	1.2	8.0	0.3	5.4	1.5	28.4	0	5.9	1.8	8.7	1.4	5.0
30–39	54.4	16.8	20.6	4.7	11.4	0.7	9.1	0.6	11.4	0	12.5	2.6	16.0	2.8	9.6
40–49	17.8	18.8	24.5	19.2	7.2	4.9	3.7	1.2	3.5	0	8.4	1.7	9.2	5.6	7.4
50–59	21.6	22.8	18.1	11.4	2.9	0.9	3.6	2.7	12.0	0	0	5.9	6.0	5.6	5.8
60+	15.0	7.0	8.2	2.6	4.1	2.3	3.5	2.1	11.9	0	0	0	5.0	2.3	3.6

Note. The total number of cases represented in Table 5 (422) is less than the total number of identified cases in Table 3 (445). This difference reflects the fact that it was not possible to obtain reliable age data for some cases.

Table 6 *Percentage of People with Schizophrenia and Chronic Mental Illness in Micronesia Who Regularly Use Drugs*

	Males[a]		Females[b]		Both[c]	
Users of:	#	(%)	#	(%)	#	(%)
Any Drug	287	(88%)	31	(36%)	318	(77%)
Alcohol	271	(83%)	28	(33%)	299	(73%)
Cannabis	198	(61%)	12	(14%)	210	(51%)
Other	44	(13%)	1	(1%)	45	(11%)

Note. The total number of cases in Table 6 (400) is less than the total number of identified cases in Table 3 (445). This difference reflects the fact that it was not possible to obtain reliable drug use data for some cases.
[a] $n = 326$.
[b] $n = 74$.
[c] $N = 400$.

few individuals in our survey were known to have used heavier drugs than marijuana and alcohol. Only 44 males and 1 female, or 11 percent of the total sample, have a record of heavy drug use (e.g., heroin, cocaine, LSD, amphetamine). The medical histories of these individuals seem to suggest a relationship between their drug abuse and the onset of their mental illness, but their number is too small to be of significance in this study.

Individuals with schizophrenia or chronic mental illness seem as a group to be above average in their educational attainments. In the four areas for which there were adequate census data to compare the mentally ill with the general adult population (the 1989 Chuuk census and the 1985 Pohnpei census do not provide detailed information on education), the level of formal education of our sample is higher than that of the general population. According to census documents, the average numbers of years of educational attainment for the adult populations of Palau, Yap, Kosrae, and the Marshall Islands are 9.7, 7.8, 8.8, and 8.7, respectively. But in our survey, the educational level for people from these areas was 10.0, 10.1, 10.7, and 9.3, respectively. The difference is over 2 years of schooling in Yap and nearly the same in Kosrae, a half year in the Marshalls, and a fraction of a year in Palau. Nearly one fourth (23 percent) of the subjects surveyed attended college for at least a year, and many spent 2 or 3 years there.

Our survey also suggests that individuals with schizophrenia and chronic mental illness in Micronesia are well traveled; almost half (47 percent) have

lived for more than 6 months outside their own state or republic, and most of these have resided on Guam or in the United States. Unfortunately, there is no data for the general population against which this can be measured.

DISCUSSION

This survey showed the average overall prevalence rate of schizophrenia and chronic mental illness in Micronesia to be 5.4/1,000, with a range from 3.2 to 16.7/1,000. The rates of schizophrenia and chronic mental illness obtained in the study fall within the accepted prevalence ranges established across cultures for schizophrenia, as reviewed in Table 2. Rates varied greatly in different island groups, with Palau's rate almost twice that of Yap, the next highest area, and several times higher than rates in most of the eastern parts of Micronesia.

The patterning of mental illness reported in our research is similar to that reported by Dale (1981), as presented in Table 1, although we report higher rates of schizophrenia and psychosis in Kosrae and the Marshalls than Dale did. Additionally, the present prevalence rates are higher throughout Micronesia when compared with those presented by Dale. This may represent an increase in the prevalence of schizophrenia over the last 10 years or this may be an apparent increase only, due to (a) better case-finding methods utilized in our survey; (b) a "broader" definition of schizophrenia and chronic mental illness; or, most likely, (c) some combination of these factors. Only with continued epidemiologic research and careful monitoring of mental health patterns can trends in prevalence be revealed.

Gender Differences

Micronesian psychosis is heavily weighted toward males, who constitute 77 percent of the total sample and outnumber females by a ratio of 3.4/1. Additionally, the average age of illness onset occurs earlier for men than women by approximately 5 years and, within our sample, men with schizophrenia and chronic mental illness are younger than women by approximately 7 years. When examining age- and sex-specific prevalence rates, the prevalence of schizophrenia for women generally increases with age; for men, prevalence rates are highest at an earlier age. Finally, as discussed below, marked gender differences appear in drug use patterns as well.

Most of these patterns correspond to those typically seen in recent epidemiologic research on schizophrenia. Over the last 10 years a good deal of research has focused on several different areas in the study of gender and schizophrenia (Goldstein & Tsuang, 1990) and several conclusions seem to be emerging. Prior to becoming ill, men have a poorer history of adjustment and social functioning (Dworkin, 1990; Foerster, Lewis, Owen, & Murray, 1991) and may display either social withdrawal or aggressive behavior, or both. Men have an earlier onset of schizophrenia by about 5 years, with typical illness and first hospitalization for schizophrenia beginning at around age 25 (Hafner et al., 1989). Once identified, and typically hospitalized, men have a poorer response than women to treatment, whether pharmacological (Seeman & Lang, 1990) or psychosocial (Spencer et al., 1988). Hence, men are more likely to spend longer periods in hospitals and are rehospitalized more often than women (Angermeyer, Goldstein, & Kuehn, 1989; Goldstein, 1988).

Social theories of gender differences in schizophrenia (which usually attempt to explain differences in age at onset and social functioning) tend to focus on sex roles and expectations, opportunities for social functioning, perceptions of illness as they affect men versus women, and tendencies to use drugs and alcohol as exacerbating factors in the development of schizophrenia (Goldstein & Kriesman, 1988; Hafner et al., 1989; Salokangas, 1983). For example, Salokangas suggests that the earlier symptoms and poorer prognosis for men may be related to the generally more stressful conditions in which they live and work, while women, not as often in the work force, may survive in more protected family environments longer. Similarly, within families, Goldstein and Kreisman suggest that social perceptions are different for sons and daughters and that parents may be more protective and tolerant of daughters than sons. They suggest that "parents treat sons and daughters differently, in part influenced by social norms and expectations associated with gender" (p. 871).

Even though research suggests that age at onset is earlier for men, and treatment response seems to be worse for men, it is generally accepted that the cumulative risk of schizophrenia is the same for men and women (Hafner et al., 1989; Jablensky et al., 1992). In other words, over time there is a 1/1 illness ratio seen between men and women. In the World Health Organization's *International Pilot Study of Schizophrenia* and subsequent *Ten-Country Study,* for example, the male-female ratios of schizophrenic patients were 1/1 and 1.2/1, respectively (Jablensky et al., 1992). Our findings of a schizophrenia and chronic psychosis male/female ratio of 3.4/1

represents a clear and unique difference from established patterns in the epidemiology of schizophrenia.

Perhaps our relatively broad definition of schizophrenia influenced the male/female ratio of cases. This is unlikely, however, because research into diagnostic criteria suggests that male rates increase rather than diminish as stricter diagnostic criteria are used (Lewine, Burbach, & Meltzer, 1984). In the recent World Health Organization study, which specifically examined diagnostic bias and the prevalence of schizophrenia (Jablensky et al., 1992), no significant difference in the male/female ratio was found when diagnostic criteria were relaxed.

It is possible that our case-finding methods selectively identified male patients based on some easily identifiable community perspective, such as abnormally aggressive behavior, or that our methods selectively overlooked female patients. Extensive case biographies were developed through community interviews following initial case identification, and decisions to include specific cases in the survey pool were based on the presence of specific psychotic symptomology rather than any other criteria. This suggests the possibility that our case-finding methods might systematically exclude females, if for some reason they were not being identified by community agents. There have been suggestions that many females with a psychosis go unrecognized because their symptomology, for cultural reasons, is muted, while that of males is exaggerated, again for cultural reasons (Hezel, 1987a). Although we cannot entirely discount this possibility, such radical attenuation of symptoms in a cognitive disorder like schizophrenia is highly improbable. It should be noted that despite the exhaustive community survey made in Chuuk, where each lagoon island was visited and a wide network of community and church leaders was mobilized to scrutinize the villages for unreported cases, the prevalence rate for female schizophrenia was one of the lowest in Micronesia. We must somehow account for what appears to be a real disparity in male and female rates of psychoses, which do not usually differ according to gender.

Because the genetic predisposition for the major psychoses is not sex linked, as far as we know, the preponderance of males suggests that perhaps environmental factors are responsible. These might include the exposure of males to role changes and other stresses, from which females are better protected by the culture. The sociocultural environment of Micronesia, affected as it has been by modernization and its concomitant changes in recent decades, would appear to be more stressful for many than ever before now. It is conceivable that this could have an effect on the overall rates of psychosis

in Micronesia and its distribution among particular segments of these societies. The traditional patterns of social organization in Micronesian cultures tend to shelter women, confining them to the home and keeping them from the public roles that bring men both greater satisfaction and greater stress. Anthropologists who studied Micronesian societies soon after World War II noted that the social pressures on men were greater and the supports fewer (Gladwin & Sarason, 1953; Lessa, 1951). This should be all the more true today if, as seems to be the case, men are subject to greater role changes and social dislocation than women (Hezel, 1987b).

Alcohol and Drug Use

Drug use, particularly alcohol and marijuana, which is common among young men in Micronesia and infrequent among women, may contribute to the high rate of mental illness among males. Everywhere in Micronesia the use of alcohol and drugs such as marijuana is regarded as a mainly male activity, and drug use has become a culturally sanctioned means by which males seek relief from stress. The strong differentiation along sex lines with respect to drug use is too great to be ignored when we cast about for an explanation of the high rate of male psychosis. A relationship between drugs and psychosis has been suggested before, as when Hammond and colleagues hypothesized that substance abuse results "in increased morbidity and contributes to the observed male-predominance among Palauan schizophrenics" (Hammond et al., 1983, p. 168).

A linkage of drug use to schizophrenia and similar diseases could offer an explanation for the wide variation in the morbidity rates of these diseases by cultural and geographical area. Palau and Yap, which show the highest rates of chronic mental illness, would also appear to be among the islands in which drug use is heaviest. It is no secret that during the 1980s Palau experienced a drug problem, including the use of heroin and cocaine, that was unparalleled in other parts of Micronesia. Although there are no accurate means of gauging comparative prevalence of drugs in different island groups, the following figures furnish a rough index to the relative amount of alcohol consumed in these places. Trust Territory import figures for 1977 (the latest year available) indicate that the per capita annual expenditure on alcohol in Yap ($66) was about three times higher than in Pohnpei ($21) and the Marshall Islands ($24), while Palau's per capita expenditure ($55) was twice

that of Pohnpei and the Marshall Islands (Hezel, 1981). The figures for Chuuk and Kosrae were unrecorded.

How does the prevalence of alcohol and drug use in our sample compare with that in the general population? Statistical data needed for such comparison is lacking for most parts of Micronesia, but a large representative sample of the Chuukese people offers some comparative figures for that island group. In a 1985 survey, 86 percent of the general male population in Chuuk were either former or current users of alcohol (Marshall, 1991, p. 339); this figure is similar to our finding that 83 percent of the male population had a history of alcohol consumption. The 61 percent rate of marijuana use among males with mental illness, however, is more than twice the 27 percent use rate recorded for all males over the age of 15 in Chuuk (Marshall, 1991, p. 339). Female rates for alcohol and marijuana use are much higher in our study than in the general Chuukese population, where only 2.3 percent ever drank alcohol and 1.2 percent ever smoked marijuana.

The influence of substance abuse in the development of schizophrenia is controversial. Medical research indicates that some drugs (such as hallucinogens, amphetamine, and alcohol during the withdrawal stage) can cause psychotic-like reactions in normal people, while other drugs (e.g., cannabis and amphetamine) can produce paranoia (as reviewed by Mueser et al., 1990). These studies indicate that the use of some drugs can produce psychotic-like symptoms, although the drugs in question, with the exception of cannabis, are not those widely used by the psychotic population in Micronesia.

There is a small body of research that suggests that drug abuse may be a contributing factor in the development of schizophrenia. Dixon, Haas, Weiden, Sweeny, and Frances (1990) review a study by Andreasson, Engstrom, Allebeck, and Rydeberg (1987) that suggests that heavy-users of cannabis have a higher risk of developing schizophrenia than nonusers. Other studies have not observed such a relation (Leiberman & Bowers, 1990; Test, Wallisch, Allness, & Ripp, 1989). The US NIMH *Epidemiologic Catchment Area Study* revealed similar prevalence rates of schizophrenia among males and females despite the fact that males were observed to have twice the rate of drug abuse and more than four times the rate of alcohol abuse of females (Robins & Regier, 1991). A review of 20 studies of substance abuse and schizophrenia by Mueser et al. (1990) underscores a pattern of rather high drug abuse in schizophrenic patients, but a National Institute of Drug Abuse (1987) household survey in the United States suggests that the rates

of abuse among individuals with schizophrenia may be no higher than among the general population (as reported by Leiberman & Bowers, 1990).

Whatever the controversies surrounding the attempts to link the incidence of schizophrenia with alcohol and drug use, there is evidence that drug use may affect the course of the disease and its severity. Several studies, as reviewed by Dixon et al. (1990), indicate that drug use may be correlated with more rapid precipitation of schizophrenia and an earlier onset age for the disease. Other research suggests that alcohol and cannabis use can have negative effects on the level at which individuals with schizophrenia function and the outcome of the disease. Negrete, Knapp, Douglass, and Smith (1986), for example, reported a correlation among schizophrenic outpatients between the frequency of hallucinations and delusions and the use of drugs. Alcohol use, even in relatively small amounts, may also exacerbate schizophrenic symptomology (Drake, Osher, & Wallach, 1989, as reported by Drake et al., 1990). Thus, recent research suggests that even if drug use cannot be cited as clearly a factor in causing schizophrenia, it may produce psychotic-like symptoms in heavy-users who are not afflicted with the disease and it may aggravate the course of the disease in cases of genuine schizophrenia.

CONCLUSION

This epidemiological survey raises a number of critical questions that warrant further study by epidemiologists, psychological anthropologists, and psychiatric researchers. The striking disparity between male and female prevalence rates of schizophrenia and chronic mental illness requires further and careful research. Also, the significant variation in rates of illness from one island group to another demands explanation. Even if a more thorough epidemiological study should show a much lower and consistent rate of schizophrenia, narrowly defined, in males and females and throughout island groups, the preponderance of males afflicted by psychotic-like symptomology would remain a mystery. At present it is unclear whether explanations for the present patterns can be found in the significantly higher rates of drug abuse among males, in greater stress levels among males relative to females in these cultures, in both of these, or in other as yet undetermined factors.

Acknowledgments

The authors would like to acknowledge the contributions of Otong Emilio, Mariano Marcus, and Marty Doyle, the people who did the field research for this survey. Otong Emilio, the principal field researcher and major contributor to the data, died after the completion of this project. We wish to dedicate this article to his memory. The authors are also grateful to the Catholic Conference for Justice and Development (CCJD), a program of the Pacific Catholic Bishops' Conference, for their funding assistance for this project.

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The Mariana Islands, 1830–1831 From the Journal of John Lyell on the Whaleship *Ranger*

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This article places the observations of a Scottish doctor, John Lyell, on some of the Mariana Islands, principally Guam, in the context of contemporary developments in the region and assesses the value of these observations. The main body of the text is from Lyell's previously unpublished shipboard journal, which is held by the Perth Museum and Art Gallery, Scotland. He visited the area in 1830 and 1831 while serving as surgeon on the London-based whaleship *Ranger*. The journal excerpts that form the core of the article are accompanied by explanatory notes and two appendixes. Appendix A lists the names of whaleships seen by Dr. Lyell at Guam and on the whaling grounds to the north and east of the Mariana Islands; Appendix B gives some details about Dr. Lyell's life and about his ship, the *Ranger*.

On September 23, 1830, after nearly 12 months at sea, a young Scottish doctor, John Lyell, sighted the distant coast of Saipan from the deck of the London whaleship *Ranger*. Soon afterward the ship sailed close to the northwest coast of that island, and two boats were sent ashore to the only known settlement there with the purpose of obtaining, if possible, pigs or fruit "for the relief of our distress from scurvy" (Lyell, 1829–1832, p. 395). Over the next 13 months the *Ranger* was to call three times at various islands in the Marianas for refreshments and refitting. During these visits, Lyell kept a careful record of events and noted those features of island

ISLA: A Journal of Micronesian Studies, 1:2. Dry Season, 1992, 355–87

life that especially caught his eye. His remarks, taken without abridgment from the journal he kept throughout the voyage, are consequently a valuable source of information about some of the Mariana Islands, especially Guam, in the early 1830s.

Ranger's visit to Guam and other islands in the Marianas at this time was by no means unique; apart from visits by whaleships and regular calls by Spanish vessels, traders and merchant ships continued to pass through the group as they had done for many years. Saipan, Rota, Guam, and Tinian had been well known since the end of the seventeenth century and they had also been described in the published narratives of various official expeditions, such as those of Crozet in 1772, Kotzebue in 1817, and Freycinet in 1818 (Crozet/Rochon, 1783; Kotzebue, 1821; Freycinet, 1839). In 1828 a Russian expedition led by Fedor Lütke in the corvette *Senyavin* visited Guam in February, and a few months later a French expedition under the command of Dumont d'Urville stayed at Guam for several weeks on its homeward voyage (Lütke, 1835/1836; Dumont d'Urville, 1834/1835). Our knowledge of the southern Marianas in this period depends significantly on the accounts of such visitors, and is thus affected both by the perspectives they brought to their observations and by the timing of their visits. On both counts, these excerpts taken from John Lyell's private journal appear to form a unique record. They were not intended, as were so many other accounts, to form the basis of a formal report to the traveler's government, but instead were written by someone who had no official status and who was not subject to the attentions or influence of the Spanish authorities. Lyell brought to his observations a lively and educated mind; he had a good knowledge of natural history and a special interest in agricultural matters. It should be noted, too, that his viewpoint was a British one, sensitive to matters of justice and individual liberty, and as such critical of some aspects of Spanish administration.

Apart from these elements, what makes John Lyell's journal entries relating to the Marianas particularly valuable is their timing. *Ranger*'s visits to these islands occurred during a significant period of change, and his notes give an indication of the sorts of changes that were then taking place. They provide a rare and illuminating view of certain events as seen by an uninvolved outsider. In 1824 the control of the Marianas was moved from Mexico to the Philippines after Mexico gained its independence from Spain. Mariano Ricafort Palacín y Abarca was appointed governor-general of the Philippines in that year, and during his tenure of office major problems in the Marianas, of which Guam was the principal center, became apparent. Between 1827

John Lyell as a young man (from a lantern slide). Prepared by and reproduced with the permission of the Perth Museum and Art Gallery, George Street, Perth, Scotland.

and 1829 an army officer, Francisco Ramón de Villalobos, was appointed adjutant to the governor-general and undertook a special mission to investigate the situation in the Marianas where he also served as second in command. On the basis of his findings, the Edict of Ricafort was promulgated

in December 1828, which led to the reorganization of the Marianas' administrative system and to the introduction of long-overdue measures aimed at reforming the islands', in particular Guam's, ailing economy. Governor José de Medinilla y Pineda was relieved of his duties, and Villalobos was appointed in his place as acting *gobernador político militar,* an office he filled from 1831 to 1837 (Carano & Sanchez, 1964; Olive y García, 1887/1984). It was during this time of transformation that *Ranger* first anchored off Saipan, looking for fresh provisions for her scurvy-ridden crew.

A NOTE ON JOHN LYELL'S JOURNAL

The following unabridged sections from John Lyell's whaling journal are reproduced with the permission of the Perth Museum and Art Gallery, Scotland, where the journal is held in Archive 463. The original manuscript, which has never before been published, is made up of 1,111 leaves in two bound volumes covered with plain brown cloth, each measuring 160 mm × 203 mm (6.3 in. × 8 in.). The journal contains many watercolor illustrations of fish, birds, and whaling instruments, as well as a small number of island profiles. The text is written on the recto side of every leaf, with notes frequently appended on the facing page (i.e., the verso of the preceding leaf). Lyell's handwriting is on the whole clear and legible, and his spelling and punctuation are of a good standard. It should be noted, however, that his spelling of certain words, notably cocoanut, is erratic; the usual modern spelling has been adopted throughout the text. In the few cases of illegibilty or obvious error, additions or corrections are shown in square brackets. Punctuation marks have been added where needed to clarify the sense of a passage, and some particularly long sections have been broken up into paragraphs. For the sake of consistency, periods have been omitted from Lyell's compass designations, and some unnecessary capitalization has been removed. In addition, the spelling of individual island and place-names has been regularized and modern usage adopted (although some obsolete, but familiar, names for island groups have been retained). Otherwise, Lyell's spelling is unaltered. His own interpolated notes are marked by numbered asterisks and printed as footnotes in the text. The original pagination of the manuscript journal is shown in three-digit superscripts; other superscripts refer to the Notes section at the end of this paper. Readers may find the following explanations for abbreviations in the text useful : "Bar." = barrel(s); "cur^{t}." = current (for the current day's date); "Feb^{y}." = February (similarly for

other months); "North$^{d.}$" = Northward (similarly for other directions); "ther$^{r.}$" = thermometer. Such shortening of words was common in handwritten documents in Lyell's time.

LONDON TO THE MARIANA ISLANDS

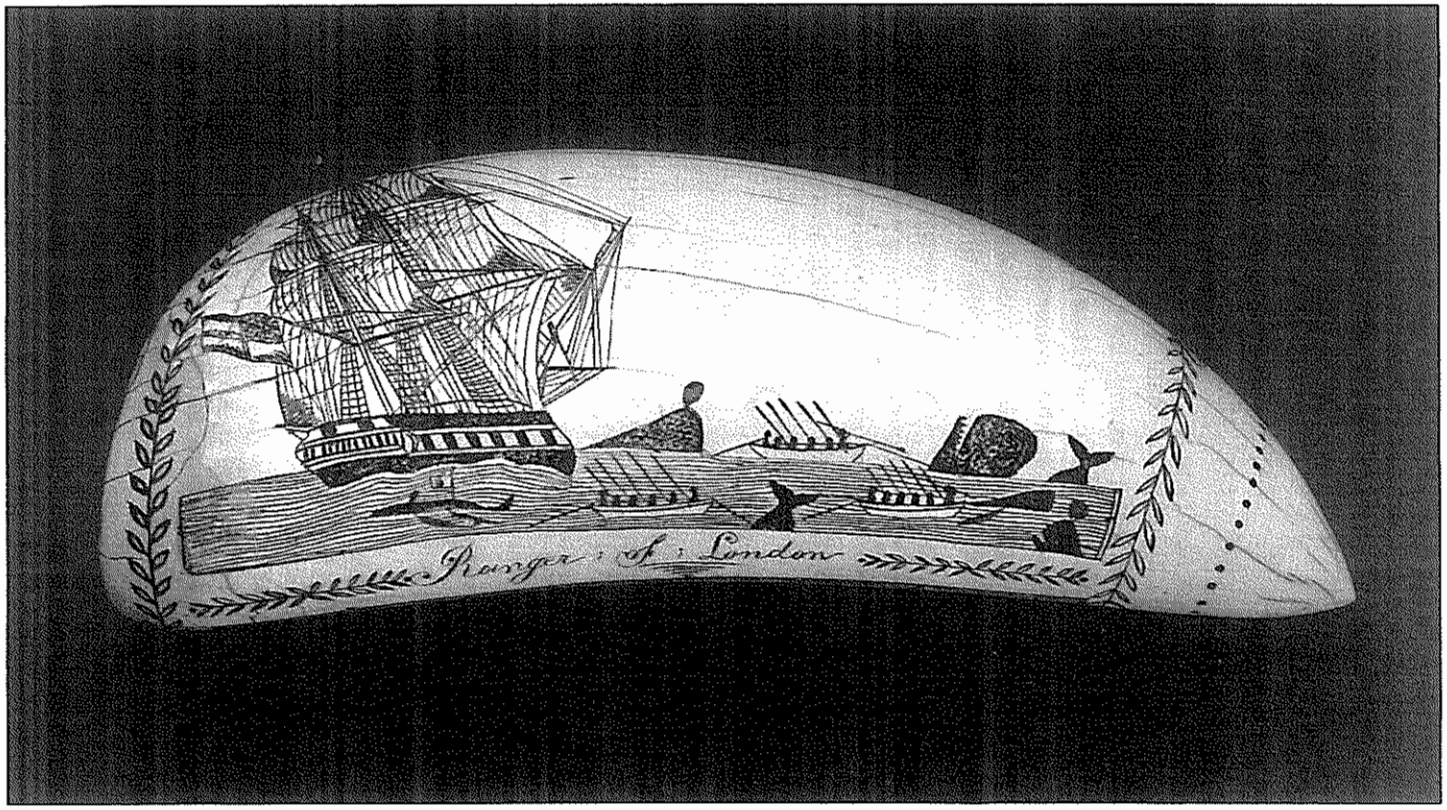
The whaleship *Ranger,* with the usual 32-man crew, sailed from the Port of London on October 19, 1829. After passing the Cape of Good Hope, the ship made its way across the Indian Ocean and then north to the island of Timor. Some time was spent whaling in the Indonesian archipelago, then the ship sailed northeast through the Western Carolines to Tinian, which was sighted in April 1830. The voyage continued to the then bountiful Japan ground. By August the food taken on at Timor was nearly exhausted, and signs of scurvy among the crew were becoming alarmingly apparent. However, whaling continued because the whales were still to be found in abundance, and it was not until early September that the ship was put on course for the Marianas again. Many of the crew were by this time in very poor physical condition and unable to perform their duties.

JOURNAL OF SURGEON JOHN LYELL ON A WHALING CRUISE TO THE PACIFIC OCEAN ON THE SHIP *RANGER* OF LONDON, 1829–1832

First Visit, September–November 1830
September 10–November 10, 1830, pp. 395–437[1]

In the course of the day we were attended by abundances of water fowel and a few land birds & flies, an indication of the neighbourhood of land, which was not deceptive, for we passed, though not within view, two small islands, Lobbs & St. Sebastian, at no great distance.[2]

Baffled by calms and variable unsteady breezes at noon on the 18$^{th.}$ we had only gained the southing of 19° North Latitude, a tardy advance towards the Ladrones at which we were much distressed on account of our crew, which was so crippled by scurvy, that not only had we ceased to look for whales, but feared the loss of some of them ere the products of the land rescued them$^{p.397}$ from its putrid jaws. In our present position we ought to have experienced the NE^{ly}



The whaleship Ranger *with whaleboats and whales; scrimshaw of a sperm whale tooth; carving attributed to Edward Burdett (1805–1833) of Nantucket. Reproduced with the permission of the South Street Seaport Museum, 207 Front Street, New York, NY. Photographer: Lynton Gardiner, New York, NY.*

trades, but it blew indifferently from all quarters; its character was squally, with showers. The abundance of fish had now left us, tho a few, whose extreme shyness owing to the shrimp shoals in the surrounding sea, made them proof against the delusion of a hook. Our ship began now to swarm with Cockroaches, whose evening depredations annoyed us exceedingly, but more of them hereafter, ther[r.] 85°.[3]

On the morning of the 23[d.] cur[t.] we descried to the WSW the island of Saipan at the distance of 2 leagues and spreading all sail to a favourable breeze in the afternoon were close in with its NW coast. The wind now failing, and the only settlement on the island being about 8 miles to the south of us two boats left the ship for the purpose of ascertaining whether we might obtain any[p.399] pigs and fruit for the relief of our distress from scurvy. After pulling round a little island situated on the extremity of a coral reef stretching out several miles from the mainland, we were allowed to stand in towards a sandy beach where a few dogs indicated the exist[e]nce of inhabitants; as soon as we had hauled our boat up on the smooth beach we were greeted by a few uncouth beings, nearly in a state of nudity. Upon some discourse in broken Spanish, we ascertained that they were natives of the Carolina isles, and had been sent here from Guam to procure wild pigs, with which the island abounded, for the government there. They informed us that they were prohibited by the Governor of Guam under pain of imprisonment & the lash to supply shipping with the least product of the island. Upon a promise of secrecy however, and a kno[w]ledge of our distressed[p. 401] condition, they not only consented to supply us with pigs, but also to load our boats with the fruit of the place: for the former, eleven of which we got, we paid them in clothing and money, for the latter there was no charge. The beach on which we landed was cro[w]ded with cocoanut trees loaded and dropping with fruit, behind which the lemon bushes were weighed to the earth with their acid loads. Abundance of Papaw trees, erected their naked stems, studded round at the top with green and yellow apples: and various species of capsicums, exhibited their splitting scarlet pods. With these products of the soil, which were a ready & certain cure for scurvy we soon filled the boats, and had we been inclined, might in a little while have filled the ship also, so plentifully did they exist. But of Nature's bounty there were few to share, the island being desert[ed] save of those individuals we had observed on landing, which also were only temporary inhabitants.[p. 403] These people were extremely robust & brawny, and together with their dogs of which they had a great number of the fox hound breed, seemed to be in excellent keeping: their huts were miserable unwalled sheds without the least article of furniture, and close by them was a long double range of pig styes, each containing a single pig, the produce of the

chase. As soon as we had loaded our boats with pigs, cocoanuts, limes, lemons, papaw apples, breadfruit, chilis &c. we left the shore and made the best of our way towards the ship, which we gained an hour after sunset, and spread a salubrious feast for our scorbutic crew, which would soon renovate their exhausted strength.

Proceeding southward, by daylight next morning we were off the western coast of Tinian, which preserved Lord Anson in his unfortunate voyage from final destruction by scurvy.[4]

There was in like manner despatched two boats towards the shore to see what freshp. 403 *bis* stock might be obtained: the first sight that assailed our eyes on landing was two Spaniards chained together by the ankles, and ere we had walked fifty yards towards the Alcaidi's[5] house we observed many other individuals so paired, and the clanking of chains struck our ears in every direction: as we had heard some accounts of a conspiracy at Guam, we were not altogether at a loss to account for these appearances, but we learned the particular details from one of our own countrymen, who from the chain on his leg appeared to have been implicated in the transaction or at least suspected of being so, for he swore most solemnly that he knew no more of an attempt to subvert Government than the child unborn. This individual by name Sherwood had left anp. 405 English whaler at Guam,[6] where he had got married and settled, and was carrying on a prosperous business about ten months ago when he was seized with many others, natives, Spaniards and English and taxed with plotting against the life of the Governor and establishment of the place. If they were really guilty of the crime laid to their charge, the treatment they received from the Governor could not be sanctioned by any law, and was even a disgrace to humanity. He threw about 20 in chains, two and two, and banished them to the desert island of Aguijan, a few miles to the West of Tinian, where there was neither water nor food at all adequate to their wants; and although some of the most venturesome had hazarded themselves over to Tinian on a raft in order to obtain a little water and food to satisfy the craving of nature, yetp. 407 those there were ordered rather to let them perish than to assist them. The hardships they suffered were unaccountable till the present Alcaidi arrived, at Tinian, whose humanity often got the better of his orders and supplied them with sustenance.[7] Five still on the island ventured over two days ago for a supply of necessaries, in a canoe, & being furnished with some Indian corn &c. returned to their desolate abode: in token of their safe arrival they were to light fires for signals but as the night came on squally and no fires have been observed, it is conjectured that they have all perished on their passage; this is the more likely to have happened as three of them were sick, and unable to use any exertions for their safety.*1

*1. I have subsequently learned that they arrived safe.

By Don Sylvester the Alcaidi we were given to understand through Sherwood our interpreter,[p.409] that his positive orders were not to supply any ship with the produce of the Island, but on the representation of our pitiful case from scurvy he agreed to sell us a few pigs, fowels and fruit: as we were making the best of our way for Guam he begged of our Captain to afford a passage for a few bullocks for the government's service there, & as this would occasion us but little trouble or delay, his request was after some hesitation granted.

Tinian was in former years, thickly peopled, and ruins of houses of a massive description are abundantly to be met with: the pillars of one in particular are seen still standing in a double row, which are at least 10 feet high and 3 feet on the side: they are square and surmounted with[p. 411] capitals in the form of an inverted dome, the diameter of which was 7 feet.[8] It is a beautiful gently rising island clothed with wood and abounding in herds of white cattle & black pigs: every thing that luxury could wish might here be raised by the slightest aid from agriculture; in a wild state, there are abundance of cocoanuts, limes, lemons, sugar apples, papaw apples, chilis, &c. yet all this munificence of Nature is allowed to run to waste, since there is not a single settled family on the island: in the midst of this fair scene, one beholds with a blush the tyranny of man to man, and is forced to confess amid the clangour of fetters that, "man was made to mourn." Here a free born Briton, who, unconscious of any crime, was torn from his wife and family 10 months ago, and without judge or jury forced to undergo unheard of hardships, might still be seen pinioned to[p. 413] a tawny companion, and worked like a slave under a burning sun. But we were informed that the fate of the present Governor was drawing to a crisis: that the Government at Manila under whose jurisdiction he was, had had their eyes opened regarding several acts of his tyranny, and embezzlement of public property; and were setting an enquiry on foot respecting his conduct.[9] May it turn out to the welfare of those poor mortals, of whose miserable estate we were eyewitnesses!

From the great quantity of meat that was killed and cured at this island for the soldiery at Guam, the common house fly so annoyingly abounded that they kept us in misery all the time we were on shore, and boarded the ship in such numbers, that their swarms molested us both on deck and below.

After the boats had got on board & the Alcaidi left the ship, for he had accompanied us, we[p. 415] made all sail for Guam, expecting, as we enjoyed a fine breeze, to reach it next afternoon, but here we were greatly disappointed for the next two days were spent in getting opposite another small island scarcely half way to our destined point, and where it was just in sight.

However after these two days of calms we obtained a fine Easterly breeze and on the morning of the 27th. had reached the capital of

Guam, where we lay to till noon, whilst the cattle were sent on shore for the Governor and notice given of our arrival: this done we made sail again for the place of anchorage nine or ten miles f[a]rther to the Southward. The wind having died away we did not reach it before sunset, when we were content to drop anchor within the outermost reef or bar that contributed to the shelter of the inner harbour, where we observed two other English whalers[p. 417] moored: another that had immediately preceded us, brought up in our neighbourhood.

During the whole ensuing day the land breeze was too strong to allow us to make an attempt to gain the inner station: but by day break on the 29th., having little wind, we weighed anchor, and with the assistance of two boats from each of the ships in our vicinity were towed & warped into the smooth basin constituting the inner harbour, a place as completely skreened from all winds as the London or West India docks. Immediately we had anchored, three of the seamen that were most affected by scurvy were sent on shore to recruit their health and strength; and two of these, that could even scarcely stir themselves when we first made the land were now so much recovered by the fruit and fresh provision we had received on board from Saipan, that they were able to[p. 419] waddle about the deck without assistance: so powerful are limes & young cocoanuts in dispelling this putrid malady!

The basin in which we lay is situated in [the] SW end of the island, about a mile from the shore, its north side is protected by Goat Island, a close wooded spot*2 but uninhabited; and the eastern & southern sides find shelter from the mainland nearly as far as west: the bay thus formed has a coral reef shutting up its entrance, only permeated by a narrow entrance into the harbour basin: the extent of the basin is about 6 or 8 acres, and its sides are almost perpendicular coral walls. A boat in pulling towards the shore passes over immense beds of animal vegetation that seem to ape the inhabitants of the dry lands: all manner of coral arborescence may be here observed[p. 421] glowing with various vivid colours but destitute of foliage, seeming a submarine forest stripped by the stern hand of winter of the "honours of the vernal year": broad leafy expansions might be seen simulating the ferns of the hill, and the mosses of the mouldering rock were not more varied than the sponges that protuberated from the straggled stones: at intervals too formations of deep water were passed over with no discernible bottom. The harbour is commanded by a small fort built on its coral margin.

*2. It is reported that this island abounds with goats reserved for a time of scarcity in the gar[r]ison; if such be the case they take care to hide themselves well, for none are to be seen; but it swarms with rats & musquitoes.

After we cast anchor in the inner harbour of Port Apra, we did not get under weigh again till the 5th. Novr. and during that time were employed refitting the ship, by tarring, calking, painting, &c. and refreshing the crew on the produce of the place. The fruits most abounding were oranges,[p. 423] cocoanuts & plantains, though others, as lemons, bananas, pineapples, breadfruit, &c. could also be had. Roots were abundant, as yams, sweet potatoes, and some other sorts, and sold at 3 or 4 ryals a basket of about 20 lbs.[10] Oranges were about ½ a dollar a hundred and plantains 2 ryals a bunch. There was no want of bullocks, & pigs, the former selling at from 12 to 18 dollars each & the latter from 3 to 4. Besides eatables a traffic is carried on in shells, the most usual sorts of which are spiders, conchs, and cowries. I procured about 30 different species though the specimens were none of the best. In the mountains and uncultivated places there are many flying foxes (a species of bat) which sally forth during the night and commit their depredations on the breadfruit; there are also some beautiful plumaged birds: no wild quadrupeds except rats were noticed, though deers are abundant and yield the chief of the native's animal food, during the absence of ships.[11] The land soon rises from the shore to mountains of considerable height, these for the most[p. 425] part have their sides interspersed with patches of trees though some are almost naked & other[s] closely wooded almost to the summit. On the low land by the sea side signs of cultivation are alone to be seen, and that only in piebald order, the greater portion being the unclaimed property of nature. Each little farm or ranch has a hut built on it which lodges the possessor, or cultivator of the soil; this is uniformly raised 2 or 3 feet on piles, has its walls chiefly of bamboo & is roofed with cocoanut leaves, imbricating each other.[12]

Besides solitary houses, and widely separated hamlets, there is a large town named [Agaña],[13] which may be reckoned the capital of the island, & indeed of the group. Most of the houses in it are built on the same plan as those noticed, though some of them are large, com[m]odious and[p. 427] goodlooking and partly constructed of stone & lime, but the best building in the place is the governor's palace, which is a roomy massive structure of stone & lime covered with tiles, with balconies in front, its furniture however corresponds but indifferently with its exterior. The natives in general are hospitable especially those who have little intercourse with the ships; most of them beside[s] the Mariana, their native tongue, speak Spanish, but very impure: they live chiefly on cocoanuts, indian corn, roots, and breadfruit: and both sexes practice the smoking of tobacco made into large cigars. Few diseases were witnessed amongst them except ringworm, ulcers, and intermittent fevers, nor does the lat[t]er much disturb the salubrity of the climate. Three fourths of the year there is dry weather, and the remaining rainy portion occurs about the au-

tumnal equinox. They are subject to tornadoes which tear everything out by the root, though those of[p. 429] such violence do not frequently occur. The usual height of the thermometer whilst we lay here during the day was 84°.

From the great number of English whalers that resort to these islands to refresh their crews, the produce of our manufactories so abounds, that their value is equally low as in the English market, and English clothing is the usual attire of the inhabitants of the place. The common dress of the men is a pair of short wide trowsers, & shirt worn loose: that of the women is a petticoat & short gown. Both wear hats alike, English be[a]vers, Manila, or home made broadbrims.[14] They usually wear sandals, sometimes shoes. Almost every hut is an inn and will entertain strangers at the rate of 6 ryals or 3/ 3[d] of our money a day bed & board.[15]

[5 November] When sailing from Port Apra we left behind us seven other whalers and during[p. 431] our stay four had weighed anchor and put to sea. We brought out with us 10 pigs, a quantity of yams & fruit, a considerable portion of which was received as a present from the Governor, in token of his gratitude for some services done for him by our Captain. Shortly after we cleared the reefs sheltering the harbour, a school of whales [was] observed spouting about a mile & a half distant from the ship, but our fishing gear was not in a state of forwardness enough, sufficient to allow us to take advantage of the tempting opportunity, so they remained unmolested by us.

Intending next to exercise ourselves in the search of whale in the neighbourhood of[p. 435 = 433] Bougainville to the eastward of New Guinea; but wishing to take with us a supply of pigs and yams, which could not be so advantageously obtained at Guam as at Rota, the neighbouring island, we shaped our course towards it, and with a fair breeze might have reached it next morning; but the weather interfered. Five days did we struggle with an adverse wind, amid heavy showers and squalls to gain this desired spot and then were 12 miles distant when a squall suddenly took us and blew in pieces the maintopsail, though at the time double reefed. This determined us immediately to change our resolution and make a fair wind of it: we accordingly squared the[p. 437] yards and bore away to the south. Having a fair and fresh breeze of wind we soon r[a]n down to Guam, and before noon on the 10[th.] hoisted colours to the vessels lying in Port Apra, and by sunset left them far behind us.

After leaving the Marianas *Ranger* sailed south and east, whaling near the equator, or "on the Line." By mid-December, the ship was in the vicinity of Enewetak in the Marshall Islands, and at the end of that month Nauru was sighted. In early January the ship was cruising off Nauru in company with *Matilda* of London, under the command of Captain Pockley. On January

14 *Ranger* sailed northwest, passing 5° N on January 31. In order to be prepared for the next season "on Japan," her course was then set for the northern Marianas where it was planned to refit the ship and refresh the crew. On February 14, Agrihan was in sight.

Second Visit, February–March 1831
February 14–March 30, 1831, pp. 491–539

On the morning of the 14th. Febv. we descried Agrihan, one of the Ladrone Isles situated a little beyond the 19th. parallel of N Latitude. It is high land, and was distant, when firstp. 493 perceived, about 16 leagues.

Next morning before sunrise we made all sail (having lain to during the night) and with a moderate breeze stood towards Agrihan but it was nearly noon before we reached near enough to perceive the cocoanut trees growing on the shores: a forest of them surrounded the mountain and in many places ascended several hundred feet up its sides, especially between the ridges that radiated from the summit to the beach around. On the weather(NE) side of this land which we first approached, there appeared but one short portion of sandy beach on which the surf was rolling too heavily to allow a boat to land, but as we got to its western shore the sea seemed to break less furiously so that three boats were despatched to obtain if possible a supply of cocoanuts.p. 495 The first place that the boat approached was a steep stony beach which did not at all suit our purpose of landing; but after rowing about a mile along a rocky shore to the Wd. we gained a little bay into which we pulled, and landed on an abrupt beach of rough sand. From the sea to the ascent of the hill, the breadth of land did not exceed 30 yds where broadest, and on the east side it rose immediately from the surf: here the soil was supported on sea-worn masses of porphyritic rock but in the other places although the angle of elevation equalled and sometimes surpassed 30° not a portion of stone was discernible, but heaps of black mould piled up & supported by the roots of trees interwoven with its substance. Of all species the cocoanut tree was observed to be the most numerous, and it existed in every stage of growth, from the germinating nut to the veteran trunk.

Under the old trees the ground was scattered with their dried fruit, & at the summit ofp. 497 their naked stems clusters of green nuts were shaded by the long waving leaves. As it was too much trouble to procure nuts by climbing the trees, especially those of considerable height, we brought them to the ground by felling the stalk that supported them and before sunset contrived to load our three boats with

nuts. If one considers the spread of cocoanut trees on this island he must look far back for the time when the father of the race was cast by the waves on its barren shores: it is possible to conceive that from an original stock, a new progeny might speedily have extended over an adjacent level, but how many centuries must have elapsed ere they could have climbed up the face of a steep hill, to the height of a mile (acclivity) at which they were now observed.[p. 499] Beside cocoanut trees there were abundances of wild plantains, the fruit of which was useless. The woods swarmed with small blue tailed lizards, and Iguanhas and on the surf washed rocks, some beautiful limpets & crabs were picked up; of the birds observed I cannot forbear taking notice of a beautiful pigeon, the wings of which were dark crimson & the head & breast a light fawn colour: these and blue & white plumaged woodpecker[s] were the most numerous of the land birds: & a white & a black tern in numerous flocks amongst the trees & rocks were the only seafowel. Many prints of pigs' & dogs' feet were noticed in the sand but none of the animals themselves could be seen.

As it continued nearly calm from the time the boats returned on board till next morning sunrise, they were again despatched for another loading of nuts which they brought off at mid-day: a fine breeze then arising, all canvas was spread and our ship's head directed for Saipan: in the[p. 501] evening we passed Pagan & the ensuing day, having passed the intervening islands descried the peak of Saipan towards evening. This island was passed during the night and in the morning of the 18th. we found ourselves 8 or 10 miles Northward of Aguijan, a little island situated on the West of Tinian. The wind had veered now to the Nord. and increased to a strong gale so that we were glad to run under the lee of Aguijan and lay to under our close reefed maintopsail. For the two days following, the winds being rather more moderate we plied to windward in order to gain Saipan where we wished to procure a few pigs, but we got no farther than Lord Anson's anchorage [indecipherable word] in Tinian where we displayed colours to the Spanish resident, turned our stern to the wind and steered for Rota. On the 21st. at noon, having entered the deep bay on the west of that island,[p. 503] two boats were despatched on shore to procure refreshments: before sunset they returned laded with pigs and roots, chiefly yams: till midday of the day ensuing was occupied in fetching off two more boat loads when we left the island for Guam. Rota is a small rocky island crowded with wood from the sea to the summit. The bay before mentioned is formed on the North by a rugged lofty rock connected to the main by a neck of low land. The shores of the bay are without exception composed of spicular rocks, in some places abruptly*3 and in others spreading into a ledge: through the latter, in

*3. Much of the rock above the surf wash[e]d position was coralline limestone.

the bottom of it, there is an opening sufficient on the top of a sea to float a boat on to a sandy beach and this is the only landing in the whole bay. The village adjoining the landing place, is a wretched assemblage of huts, arranged in the form of a rectangle. None of[p. 505] the houses adjoin each other; and that row parallel with the beach is single and overshaded with cocoanut trees that extending backwards form a broad street, with the houses of a much better description than the former: in a line with the street, towards the sea, stands a large barn-looking building, the church, decked out with no image of gold or silver or any baser metal, but a Kanata Maria and child of wood.[16] Almost every other hut that was entered presented one of the family of maimed, halt or blind, and the chief of their living seemed to be roots which some of them were even observed to be munching raw, I conceive from the trouble of cooking them. The pigs and yams procured were almost equal by high price with those obtained at our anchorage at Guam.

As soon as daylight dawned on the 23rd. we set sail with a strong breeze for Guam, and soon[p. 507] descried it looming through the haze. By midday we were abreast of the north end, and at 3 p.m. sailed into Port Apra. We did not proceed into the inner harbour but plied up about a furlong within the outer reef towards Goat Island & there found sufficient shelter. From this date till the 29th. March we continued at anchor, and having little ship duty to perform, most of the crew were on shore 10 or 14 days on liberty by which their constitutions would be beneficially stimulated and better be able to resist the attacks of scurvy in the coming season at Japan. When we arrived in port we were solitary, but during the past ten days of our anchorage three more London whalers came in, the Matilda, Captn. Pockley, Lady Amherst, Captn. Lisle. & Harriet, Captn. Young: their respective stocks of oil were 1600 Bar, 350 Bar, & 1300 Bar: the former since we had seen her off Pleasant Island had obtained 400 Barrels.[17]

An observation, to the truth of which I am willing to subscribe, is that the more bountiful[p. 509] Nature is to the sons of man, the less assiduously are her favours courted by them: this is well illustrated by drawing a comparison between the Mariana and Scottish isles. While the former enjoy a salubrity of climate and fertility of soil, not surpassed in any region of the earth, the latter are cold & sterile, subject to biting frosts and gloomy fogs; whilst those in confidence expect a threefold harvest of maize in the course of a year, these have the hopes of their annual crop often disappointed by autumnal rains; whilst the germinating seeds & bursting buds of the former are cherished by genial beams and refreshing showers, the seeds of the latter often die an unseen[p. 511] death, and the bud of promise is cut off ere its beauties have unfolded to scent the breeze: and yet notwithstanding all the advantages that the natives of these islands possess, they

seem not to enjoy the necessaries of life in greater plenty than the frugal peasantry of the north of Scotland: and why? they love too much to live at ease, and work only when necessity compels them: with half that spirit of activity possessed by the Scottish peasantry they might riot in superfluity: but they have no idea nor inclination to exert themselves more than is barely sufficient to supply their wants, yes, I believe they would rather go with hungry bellies than weary limbs and hazard[p. 513] being pinched with famine than have aught superfluous to cast to the dogs.

Their system of agriculture is extremely simple. They soften not the ground either by digging or tilling except a few inches around, where the seed or root is deposited, the surface is cleared from weeds by a kind of Dutch hoe, shaped thus:[18]

The seeds of indian corn are deposited about 4 feet apart, and during its growth the ground is two or three times freed from weeds by the hoe, when ripe the ears are plucked & the stalks left to wither in the ground till next planting, for they seldom or never plant in the same ground[p. 515] immediately. For tarra root they select a moist piece of ground and plant sometimes irregularly and sometimes in rows, at greater or lesser distances according to the size of the kind planted. Rice is reared in level ground contiguous to a stream of water, a sufficient portion of which is diverted from its course to irrigate the field: more than usual attention and trouble seems to be given to the raising of this grain. During its growth it is carefully attended with water, and freed from all weeds and bracken stems: at this season the chief of it observed was coming into flower.

Next to rice the raising of tobacco seems to be most attended to, for this is a plant used by all old & young. Beds of it are first sown from which the little plants are transplanted into others,[p. 517] where they arrive at a suitable size for placing in their final station. Every hut has its tobacco patch attached to it which is usually fenced in and kept exceedingly clean: when arrived at a sufficient size the stem is cut and the root left to sprout again: for use the leaf undergoes no manipulation but is merely hung up in the shade to dry.

This was the season for planting yams. The surface of the ground was cleared, a hole dug every three or four feet distant and a small yam deposited therein: the yam being a climbing plant, sticks are placed in the ground, for them to ascend. These are straight pieces of bamboo or[p. 519] straight wood, 5 or 6 feet long: they are not

placed upright in the ground but inclined to each other in groups of 6 or 8 and tied together at top to render them more steady, thus:

Sweet potatoes, or, as they are termed here, camoties, are reared in light shady soil. Respecting fruit trees, the cocoanut must undoubtedly hold the first place for utility. Its wood is used in the construction of houses and its leaves form their covering: when one is thirsty the green nut offers a refreshing drink and the cravings of hunger may be aggreeably appeased by the nutritious and wholesome kernel of the ripe nut. The gloom of night is cheered by the burning of cocoanut oil: and after the sun has sunk to rest and the labours of the day come to an end one may return[p. 521] to his hut with his friends and enjoy an hour of social talk over a bamboo of toddy: even exhausted nature finds a ready stimulus in the spirituous liquid*4 distilled from this fermented juice, and the burning fever may be allayed by the cleansing acid of vinegar obtained from the same source: baskets are formed of the leaves, and fishing lines and ropes of the husk: in a word I believe that no other three trees in tropical climates could supersede the use of the cocoanut; its blessings are constantly shed and easily procured.

The next tree to be mentioned is the bread fruit: it abounded wild in the woods, where not only the fruit is collected by the natives, but it yields sustenance for thousands of flying foxes &[p. 523] wild pigs. It yields two crops of fruit during the year, in spring and autumn; at this time the trees were laden with fruit almost full grown. Besides what is boiled & roasted for immediate use, they cut it in slices, dry it in the sun and reserve it for future necessity. Its wood is used for making canoes, and household furniture. The Fide rico (Faith of the rich) is a small tree which grows extensively in rocky ground: it delights in the shade, and is consequently usually found in the woods skreened from the rays of the sun by the branches of loftier growth: it has a naked stem and fernlike leaves looking like a cocoanut tree in miniature: close to the stem at the foot of the leaves it

*4. Aguardiente. To obtain toddy, the extremity of a flower bud is cut off and a bamboo placed under it to receive the juice as it flows from the wounded vessels: this juice, or sap of the tree, is toddy, and is collected morning and evening: at each of these times a fresh slice is cut off the bud by a sharp knife in order to open the sap vessels afresh. Tod[d]y when fresh obtained is a sweet liquor slightly sparkling, by longer keeping it becomes sharp and intoxicating: in this state aguardiente is drawn from it by distillation: by longer fermentation it passes into excellent vinegar.

bears bunches of globular green nuts.*5 These when nearly ripe are collected by the natives,[p.525] freed from the husk and macerated 9 days in fresh or salt water, which during that time is several times renewed. The water in which nuts have been steeped is a deadly poison, but the nuts themselves subsequent to maceration are dried in the sun, heat[ed] in a wooden mortar and then levigated on a flat stone into meal, which mixed with a little fat and molasses*6 is baked into a very good bread, nutritive and innoxious.[19]

Of plantains and bananas they possess several sorts: when boiled green they are similar to a potatoe, when ripe may be eaten raw, fried, or mashed and made into sweet cakes. These broad leaved trees, if not cut down, are [cut down?] as soon as they have ripened the fruit.[20] Sugar cane they[p. 527] possess, but seldom or never think of obtaining sugar from it, or even molasses. The governor I was informed sometimes had attempted the manufacture of this article, and at this time I saw a large space of ground cleared away and planted with cane, adjoining to which was a shed containing a sugar mill & boiler, where another effort was to be made to make sugar; guavas grew abundantly in the wild state, as also sugar apples and a species of citron: this last notably bore [an] abundance of red aromatic fruit similar to hips, but yielded flowers of delightful fragrance which scented the paths: it is a dark green waxy leaved shrub grateful to the mouth and the nose. The betle nut tree usually arises by the side of streams, and very much resembles the cocoanut tree in its growth. The nuts which are in great use as a masticatory are seen hanging in bunches[p. 529] a little underneath the tuft of leaves surmounting its naked trunk. The tamarind tree here also grows though not abundantly and it is little cared for. A single one was observed in a thriving condition & I was informed bore fruit: although I suspect the heat of the climate too great for the naturalizement of this plant. The cotton plant is not uncommon and produces excellent down, but it is neglected & put to little or no use: the natives rather chose to purchase their clothing, than manufacture it of their own produce.

In ancient times ere the Spaniards had taken possession of these islands, the current coin was composed of turtle shell cut into circles from 1 to 3 inches in diameter with a hole in the centre for convenience in threading it on a cord, the value being [in] proportion to the size: in the[p. 531] language of the island this money was called lailas. In cases of marriage, unless the bridegroom could present the father of the bride with a suitable string of lailas the match was rejected. In

*5. [Lyell apparently intended to add a note here, perhaps about the "Fide rico" tree, but for some reason neglected to do so. See n.19.]

*6. The molasses is usually made by evaporating sweet toddy to a syrup.

those days, the sling was much in use, and handled with great dexterity. Stones were formed for the purpose into an egg shape, but more pointed: and I was informed by an old Spaniard that he recollected of a native, who taking an aim at an object at a considerable distance was sure to strike it once in three times. Being then unpossessed of iron their chisels & axes were composed of stone. Specimens of all shapes with some difficulty I obtained for the younger natives scarcely knew that such had been the riches of their forefathers.

Of domestic animals they possess horses, cows, buffalos, mules, apes, pigs, dogs, & cats.[p. 533] And the wild mammalia are much less numerous, so far as I could learn, only amounting to four, deer, pigs, rats & flying foxes. The first exist in great numbers in the woods and mountains, and are frequently shot; pigs are less plentiful. Rats abound and flying foxes swarm the woods: these, which are only a larger species of bat, are esteemed delicate eating, and sell at 3 ryals a piece. They are gregarious, and several hundred may sometimes be seen hanging from the same tree, so closely huddled together that I have heard of 17 being killed at one shot. The variety of birds is not great. I have only observed 14 different species, several of these are however very handsome. Nor are insects numerous. The reefs surrounding the island exhibit the greatest display of[p. 535] animal life, from the vegetative coralline, to the numerous shark: many and beautiful shell fish shelter on the shoals, and elegant and curious fishes sport amid the groves of coral:*[7] for a sketch of two see Fig. o. & p. Tab. XIV.[21]

After adding a little to our stock of fresh vegetables*[8] on the 29th March we got under weigh by daylight, & stood along shore to the Southward for Umatac Bay where we came to an anchor before noon. This was for the purpose of obtaining a supply of fresh water, which could be much more conveniently obtained here than at Port Apra and also of better quality. The village of Umatac stands in the mouth of a deep narrow valley through which a small stream flows into a little bay of the same name; the most conspicuous buildings are the church & palace whose[p. 537] whitewashed walls being partly skreened by bushy trees gives an interesting and pleasant aura to the scene: on the one side is seen the river pouring it[s] waters into the bottom of the bay & on the other the huts of the natives peeping through a canopy of cocoanut trees, and a rugged mass of insolated rock fortified & washed by the sea: besides this there are two forts situated on the hills one at each side [of] the bay: beyond the barren

*7. Fish they catch by hand net on the beach, by float nets, by stake enclosures, by hooks, frames and poisoning with a certain bark.

*8. During our stay the weather was dry and windy: occasional squalls prevailed which were generally accompanied by a passing shower. Wind from the ESE to North. Ther. 84°.

looking hills which speedily arise from the sea shore, steep lofty mountains appear, embossed with forest trees. From the favourable impression the seaward view of Umatac affords, one expects to be pleased on setting his foot on shore, but disappointment awaits him if he visit the village: the huts are wretched structures and their[p. 539] inmates too well accord with their dwelling. Most of them are covered from head to foot with scaly ringworm or leprosy.*[9] [22] They live on the poorest diet and even that scarcely in sufficient quantity, so that it is necessary for one coming on shore to fetch his provisions from the ship with him. Every thing was much dearer here than at Port Apra, as might reasonably be expected from the poverty of the place. Ther. 84°.

[30 March] On the ensuing day at sunset having completed our stock of water (200 barrels) we took up our anchor and stood out to sea, leaving one vessel the Fawn, Captain Dale, behind us.[23] Standing to the North[d.] with a moderate breeze, next day we lost sight of Guam, and bade adieu to the Mariana Isle[s] for the next six months to come and probably for the whole voyage.

For the next 5 months *Ranger* was whaling in the northern Pacific "on Japan," ranging as far as 33° 17′ N, 155° E. In July 1831 the ship fell in with two other British ships, *Henrietta* and *Kent*, the latter having on board two women from Oahu, "for the new colony at the Bonin Isles."[24] Whales were in great abundance, although at times the hunt for them proved difficult and sometimes unsuccessful: "For 13 hours the ship's company was engaged in a most laborious and fatiguing employment under a burning sun with little victuals, and returned on board at night languid and cast down with fatigues and misfortunes."[25] By September *Ranger* was on a southerly course and, contrary to Lyell's expectation, bound again for the Mariana Islands.[26] On September 18, the cook succumbed to a lung disease, and the event inspired Lyell to compose a poem about his death—one of several in his journal.[27] Agrihan was sighted on September 22. This time there were few symptoms of scurvy on board, so that the bad weather preventing a landing there did not cause anxiety.

Third Visit, September–October 1831
September 22–October 6, 1831, pp. 789–817

Having gained the parallel of Agrihan we steered West and on the afternoon of the 22[nd.] sighted its [p. 791] lofty summit at the distance

*9. Leprosy of the Greeks.

of 40 miles. Enjoying a fresh breeze of favourable wind, by sunset we had reached within 12 miles of it, when we lay to, intending on the morrow to despatch the boats on shore for cocoanuts. During the night the weather was a repeated succession of strong squalls and rain so that when we had run up with the island next morning, landing was found impracticable from the heaviness of the surf that swept the lee side of the island. It will be recollected that we visited Agrihan in the month of Febr$^{y.}$ last and obtained abundance of cocoanuts: its hilly surface was then scorched with drought but the rainy season had now$^{p.\,793}$ clothed the whole with lively green and the breeze blowing over it breathed a delightful fragrance. As we had few symptoms of scurvy on board the disappoinment of receiving nuts was not so severely felt, so leaving Agrihan behind us we steered for Saipan 250 miles to the South$^{d.}$.

Passing the intervening chain of Islands on our left on the morning of the 25$^{th.}$ Saipan was descried on our weather bow 40 miles distant, and soon after Tinian beyond it. We had hoped to land on Saipan this same day to obtain a supply of stock but in the drift of squalls and currents the preceding evening had got so far to leeward that the whole day was spent in gaining the little$^{p.\,795}$ island of Aguijan, SW of Tinian when we tacked and plied assiduously to gain the landing place of Saipan by the ensuing morning. An observation I cannot forbear recording demonstrative of a peculiar instinct exhibited by the water fowel haunting these islands. Far to the Eastward of Agrihan many birds, chiefly black & white terns, or as the sailors term them noddies & spectre gulls, were noticed, indicating our approach to land, long ere it was perceived from our mastheads: but [at] other islands few of them were seen unless we approached near the shores. The East is the weather side of the land from which the animals ventured fearlessly, to a great distance,$^{p.\,797}$ well aware it would seem, if involved in furious squalls or gales of wind, they could safely retreat before it to land; whereas on the lee or west side of the islands they seemed afraid to range so widely lest carried away by a sudden tempest, they might be unable to regain their home when its fury subsided.

As soon as day had dawned on 26$^{th.}$ we found ourselves with[in] 6 or 7 miles off the SW end of Saipan and at 7 o'clock despatched two boats on shore to procure refreshments. Crossing a sheltering reef about a furlong from the shore, we landed upon a shady beach, lined with cocoanut trees. We$^{p.\,799}$ were immediately accosted by two natives who to our inquiries replied they would furnish us with pigs and cocoanuts, enjoining us however to be silent at the other islands: for it was under pain of severe punishment by the authorities, that they supplied us. Promising to divulge nothing, one of them conducted us along the beach three miles to another farm (rancho) where more of

their companions resided, making up the number of 12 in all. They were exile[d] prisoners from Guam, implicated in the nominal or real insurrection, that took place two years before in Agaña, and without investigation had been sent here to await their trial![28]

After a great deal of altercation among themselves, about the division of the money and[p. 801] presents bestowed upon them, they granted us 17 miserable pigs and a boatload of cocoanuts & lemons, with which we returned to the ship and left the island. After sunset we passed the S end of Tinian, and next day got close up with Rota but too late to land.

[28 September] But early next morning, enjoying fine weather, two boats pulled to the landing on the NW end of the island, and traded for pigs, roots and fruits, with the inhabitants, and two hours before sunset, being loaded, returned to the ship. Taking them on board we immediately spread our sails to a fine breeze of Easterly wind for Guam which was distinguished off the deck ere sunset.[p. 803] Early in the morning we got up under the lee of the North end of Guam, and lay to till daylight allowed us to proceed towards Agaña, the capital city of the island. With a fresh and favourable breeze this we soon accomplished, and while the ship lay about a mile off the town, the Captain went on shore to pay his respects to the Governor, and acquaint him with our intention of procuring water at Umatac Bay.

Besides five English Whalers, a Manila ship lay in Port Apra, that had lately arrived with a Judge and assistant, empowered to decree justice to the individuals concerned in the late insurrection[p. 805] against the Governor: late! Should I term it? I conceive it does not appear so to those unfortunate men, who have either been incarcerated and fettered, or fettered and exiled to a desert and barren island, for 2 years merely upon the charge of crime! O tardy justice! ye remind me of an adage applied to a certain town, "hang a man, then condemn him." The late Governor we learned was now deposed,[29] and his place taken by the Lieutenant Colonel of the island,[30] by all accounts a humane man, lending a deaf ear to calumny, and according to report determined to bestow justice on the unhappy men who had already suffered too severely for the slightness of their crime, which had its source more in envy and evil speaking than reality.

Leaving the city in the afternoon we stood south: for Umatac Bay, first, making some necessary communications with the Port which detained us a night—for the ship getting drifted to the W[d.] in strong squalls, the boat could not get on board the same evening although an attempt was made to effect this. The last day of Sept. was nearly a continued calm, so that we were defeated in our intention of reaching Umatac till the first of October, early on which day we cast anchor in the Bay in 20 fathom water, and immediately despatched

the boats on shore for water. So excellent is this for a watering place, that ere sunset we had on board 200 Barrels of fine fresh water.[p. 809] In the mean time also we traded for yams, oranges, bananas and breadfruit, and obtained a boatload at a moderate price. Breadfruit & oranges were particularly abundant, and cheap; 3 lbs of lead for instance would purchase 50 or 60 oranges, or half as many breadfruit: the roots were more scarce & higher valued.

I may here take notice of a curious method of catching fish, employed at these islands, so far as I know never before described.[31] One fish is caught by any of the usual methods, put into a pool communicating with the sea, and attended with great care, being fed daily with mashed cocoanuts: a hole is cut in the side of its mouth to which a cord is attached and when the canoes leave the shore, it generally accompanies them: in this manner it becomes tame. When the native, its[p. 811] master—if I may be granted the expression, goes afishing in his canoe, the tame fish swims alongside restrained by a bit of cord; after he has gained the proper fishing station, he takes a sacciform hook net and making the tame fish fast to its margin, sinks it to a convenient depth.[32] The tame fish immediately when let down begins fluttering in the bottom of the net, and attracts others of a like species, (if any in the neighbourhood) by its manoevres. From the cord attached to the tame fish, or some other cause, the others immediately begin fighting with it, and while earnestly engaged in the combat, (which the man easily perceives by the clearness of the water), the net is gradually withdrawn towards the surface, which when near, the man suddenly[p. 813] drags it up, with its contents, releasing the tame fish, for a future decoy, and killing the others for food. The fish taken in this manner are of the parrot bill species, and an old decoy is much esteemed.

On the 2nd. Oct[r]. we again weighed anchor and with a fine breeze made the best of our way for Agaña: night overtook us ere we reached it, but next morning having gained the passage across the reef that outskirts the beach about half a mile distant, opposite the town, a boat was sent on shore with half the crew on two days liberty for the improvement of their health. As is usual with sailors in a foreign Port, it was with difficulty that our people were got on board, even subsequent to the expiration of their liberty [of] 24 hours. On the 6th. the remainder of the crew were granted[p. 815] the same privilege as their fellows, viz., a run on shore, but with strict injunctions to be ready for sea next evening, as we then intended to set sail, and depart from the island. Notwithstanding the orders given and the decided determination to sail, on the evening of the 7th. when we came to muster our crew two were found a-missing: they had been seen on shore and told to return on board as the boat was awaiting them on the beach, but nevertheless thought fit to absent themselves, so that

> it was necessary to leave them behind to find their way home in the best way they could.
>
> [8 October] Our next cruising station for whales was far to the East[d.] in the neighbourhood of [p. 817] the Kingsmill Group of Islands, and to gain this as soon as we had left the north end of Guam we strived assiduously night and day, with all sail, that the weather permitted. . . .

Ranger was now beginning its homeward voyage, but whaling still remained of paramount importance. As Lyell wrote on leaving the Marianas, "[O]ur first aim was to get to the Southward under the Line, and there hold our course Eastward, where not only we would be beyond the influence of the Easterly trades, but in a situation where whales might be expected."[33] Passing Ngulu and Losap in the Carolines, the ship reached Mussau in the St. Matthias group in early November, and soon afterwards sighted New Hanover. Then *Ranger* turned westward again, heading for the Admiralty Islands. No whales were in fact taken on this cruise. In mid-November contact was made with the people of Pegun, one of the Mapia Islands off the northwest coast of New Guinea. By the beginning of 1832, *Ranger* was sailing among the northern islands of the Indonesian archipelago. After whaling off Halmahera and in the vicinity of Timor, in July the course was set for St. Helena and home. The Isle of Wight was passed on December 3, and John Lyell's journal ends on that date. *Ranger* reached Gravesend on December 10, 1832.[34]

APPENDIX A

Whaleships Reported by John Lyell in the North Pacific Ocean or at the Mariana Islands, 1830–31.

It should be noted that most of the vessels whaling in the North Pacific probably called at the Marianas at some time during their whaling voyages.[35]

Place	*Month*	*Ship*	*Home Port*	*Captain*
	1830			
Guam	September	*Zephyr*[36]	London	Billinghurst
N. Pacific	April	*Venelia*	London	Miner/Minns
	April	*Portsea*	London	Bews/Bewt

Place	*Month*	*Ship*	*Home Port*	*Captain*
	May	*Fame*	Nantucket	Ramsdell
	May	*Venelia*	London	Miner/Minns
	May	*Admiral Cockburn*	London	Kemp
	May	*Recovery*	London	Brookes
	June	*Hope*	New Bedford	Paddack, Jr
	June	"Australian ship"	Sydney	—
	July	*Matilda*	London	Pockley
	July	*Ann*	London	Christie
	July	*Sarah Ann*	London	Green
	August	*Ann*	London	Christie
	August	*Zenas Coffin*	Nantucket	Joy
	September	*Cape Packet*	Sydney	Edwards
	1831			
Guam	February	*Matilda*	London	Pockley
	February	*Lady Amherst*	London	Lisle
	February	*Harriet*	London	Young
	March	*Fawn*	London	Dale
N. Pacific	April	*Lady Amherst*	London	Lisle
	May	*Braganza*	New Bedford	Wood
	May	*Warrens*	London	Bliss/Bloss
	June	*Zephyr*	London	Billinghurst
	June	*Deveron*[37]	Hobart	Lovatt
	July	*Pusey Hall*	London	Newby
	July	*Matilda*	London	Pockley
	July	*Henrietta*	London	Henderson/ Anderson
	July	*Kent*[38]	London	Lawton
	July	*Lyra*	London	Sullivan
	August	*Sarah & Elizabeth*[39]	London	Swain

Place	*Month*	*Ship*	*Home Port*	*Captain*
	August	*Arabella*	Sag Harbor	Pearson
	September	*Pusey Hall*	London	Newby
	September	*Mary Ann*	London	Banks
	September	"American ship"	?	—

APPENDIX B

John Lyell and the Ranger

John Lyell was the second of eight children born to David Lyell, wood merchant, and Betsy Wishart, of Newburgh, Fife, Scotland. He was born there on August 14, 1807. Newburgh is an ancient town and royal burgh on the southern bank of the Firth of Tay. In the early nineteenth century the male inhabitants were mainly salmon fishers in the summer and weavers in the winter. Newburgh itself is flanked to the east and west by rich agricultural land; to the south lies hill pasture and rough ground—sheep and cattle country. When *The New Statistical Account of Scotland* was published in 1845, Newburgh was still in a predominantly rural area, and it was not until the end of the nineteenth century that manufacturing replaced pursuits associated with land and sea (Smith, 1952).

Lyell was therefore familiar with farming as a way of life. The marked differences in agriculture between the Scottish and Pacific island environments struck him forcibly. It is interesting to note that his concern with the land remained with Lyell all his life; much later, when he was practicing medicine in Newburgh, he founded the local Horticultural Association there. He was particularly interested in plant propagation and in the introduction of new plant species (Ritchie, 1929–38).

As a young man of 22, Lyell joined the *Ranger* in London very soon after obtaining his surgeon's license from the Royal College of Surgeons of Edinburgh in 1829. It has been shown that in England between about 1820 and 1840 there was a significant oversupply of medical men qualified as surgeons and/or apothecaries, and that some of these doctors were recruited as surgeons on whaleships undertaking the long cruises to the South Seas fishing grounds (Forster, 1989). The situation regarding the employment of surgeon-doctors in Scotland is not so clear cut, and Lyell himself makes

no comment about his motives for joining the *Ranger*. It can therefore only be surmised that he may have gone on a whaling cruise because he had found it difficult to obtain work as a surgeon and saw the voyage as a means of acquiring some useful capital. At the time of the *Ranger*'s cruise, commencing in October 1829 and concluding in December 1832, sperm whale oil was still fetching a good price on the London market and, if his "lay" (share of the profits of the voyage) was a fairly typical one for surgeons at that time of between 1/95–1/100 of the total (Gibson, 1833–1837, p. 1; Enderby, 1847, p. 11), he could have expected to come back to Scotland with about £100 all found to help him set up in practice—considerably more than the annual wage of a skilled Scottish textile worker in 1832 (H. M. Boot, personal communication, December 1991).

It is also clear that John Lyell had a very well developed interest in natural history and considerable drawing skill, which is demonstrated in the extremely well executed sketches of birds and fishes scattered throughout his journal. Like his fellow surgeon Frederick Bennett, whose whaling cruise took place a few years after Lyell's, he may have been especially inspired by the opportunity to expand his scientific knowledge on a voyage to an as yet comparatively little known region of the world (Bennett, 1840) and be paid for it as well. Also like Bennett, Lyell seems to have found whales, particularly sperm whales, to be of great interest, and large sections of his journal are taken up—perhaps, to modern readers at least, to a tedious extent—with detailed descriptions of their chase and capture and of their physical appearance and internal organs. Other sea creatures are also minutely described.

The *Ranger*, a three-decked ship of 425 tons, was owned by the well-known and successful firm of Daniel Bennett & Co. Originally built for the Royal Navy at Topsham in 1806, it had been sold to Bennett in 1817. The name was changed to *Ranger*, replacing another Bennett vessel of the same name that was broken up in that year (R. S. Craig, personal communication, November 13, 1991). *Ranger* was therefore quite an old ship in 1829, although according to Lyell it had recently been given a thorough overhaul and was "quite seaworthy," possessing a "conveniency enjoyed by few in the trade" (Lyell, 1829–1832, p. 1).

The ship's commander was Captain Thomas Garbutt, a veteran whaling master whose familiarity with the route taken by *Ranger* is apparent in Lyell's journal. It was a route taken by many British whaleships between 1823 and 1840: The Pacific Ocean was entered via the Cape of Good Hope, the Indian Ocean, and the Indonesian archipelago (where whaling was often

undertaken). The whalers then sailed through the Mariana Islands and past the Bonin Islands (Ogasawara Guntō) to the whaling grounds in the North Pacific east of Japan (Beale, 1839/1973).[40] After two seasons "on Japan," as the whalemen called this vast whaling ground, with perhaps a call at Hawaii, the return route covered more or less the same path, with some deviations to take in the whaling grounds on the equator and to the northeast of New Guinea (May, 1824–1826). As Lyell's journal also shows, Thomas Garbutt was a well-known figure at the *Ranger*'s ports of call in the Marianas. His career actually ended on a whaling cruise: He died on or near the island of Timor some 10 years after John Lyell's voyage ended (Forster, 1991).

Soon after his return to Scotland Lyell began working as a doctor in his hometown of Newburgh and at nearby Abernethy (Bouchier, 1983). He married Ann Williamson of Clunie in 1835. Following a not uncommon practice among medical men at this time, he undertook further training quite late in his career (Forster, 1991). On August 3, 1850, just before his 43rd birthday, he graduated as an MD at the University of St. Andrews (R. N. Smart, personal communication, November 12, 1991). When he was in his sixties, Lyell went to Glasgow where he joined the newly formed Glasgow Medical Missionary Society. Glasgow had been for many years a city with acute urban overcrowding. Many of its inhabitants lived in packed tenements in the utmost squalor, which led to the collapse of family life and the demoralization of the people, as well as to major medical problems (Checkland, 1976). Lyell, as a doctor with many years of experience, would therefore have been able to play a very useful role in the Society and, indeed, he was appointed medical superintendant soon after joining it. The Society was established in 1867 or 1868 "to carry on medical Mission work among the poor in Glasgow" along with other philanthropic aims (Checkland, 1980, p. 82). By 1872 it was providing medical care for hundreds of patients in a dispensary and at home. Dr. Lyell was receiving at that time an annual salary of £300 (Checkland, 1980, pp. 83, 85) and was clearly an extremely hardworking and dedicated member of the Society, but by 1874 ill health had overtaken him and he was forced to retire from medical practice. He moved to Perth, where he died 5 years later, in April 1879, at the age of 72. Of his three children, the eldest, David, predeceased him, dying in 1870. John, his second son, died the year after his father, in 1880. The death dates of his wife Ann and daughter Maggie are unknown. The family medical tradition was carried on by David Lyell, and by his son, another John Lyell, who took over his father's practice in Perth (Ritchie, 1929–1938). This John Lyell, who died in 1916, was a member of the Perthshire Society for Natural

History and it was he who donated his grandfather's *Ranger* journal to this Society in about 1900. The Perth Town Council acquired the Society's collections in 1902, and they are now held in the Perth Museum and Art Gallery (S. Payne, personal communication, December 11, 1991).

Note: Basic information about Lyell's family and career comes from a handwritten family tree, with annotations, inserted in the first volume of his journal.

Acknowledgments

I am grateful to the Perth Museum and Art Gallery of Scotland for providing me with a microfilm of John Lyell's complete journal and for allowing me to publish sections of it and Figure 1, the portrait of John Lyell, in this article. I am also grateful to the South Street Seaport Museum of New York, NY, for permission to reproduce the scrimshaw depiction of the *Ranger* (Figure 2), which was photographed by Lynton Gardiner of New York, NY. I also wish to thank the following people for their assistance in the preparation this article: Dr. H. M. Boot, Faculty of Economics, The Australian National University, Canberra; Dr. R. S. Craig, Kent, England; Dr. R. Hill, Alumnus Relations Officer, University of St. Andrews, Perth, Scotland; R. N. Smart, Keeper of the Muniments, University of St. Andrews, Perth, Scotland; S. Payne, Keeper of Human History, Perth Museum and Art Gallery, Scotland; and C. C. Quintana, Collections Manager, South Street Seaport Museum, New York, NY.

Notes

1. In his entries for September 23–24, Lyell miscalculates his page numbering and has two pages numbered 403. In the entry for November 5, p. 433 is omitted altogether. For the sake of convenience, Lyell's original page numbering has been retained.

2. "Lobbs & St. Sebastian," that is, Sebastian Lobos Islands. These islands, which were marked in atlases as late as 1922 and located in gazetteers at 25.3° N 146.5° E, are now known to be nonexistent, along with several other small islands to the south and north, such as Tree Island and Malabrigos, or Margaret, Island. Kazan Rettō (Volcano Islands) lie to the west of these supposed islands.

3. In fact Lyell does not mention the cockroaches again.

4. Commodore George Anson reached Tinian in August 1742 on his voyage around the world of 1740–1744. In desperate straits as a result of scurvy, which was carrying off eight or ten men a day, Anson saw the island as a "perfect paradise" (Williams, 1967, p. 129). Of the 1,410 deaths on the expedition, 73 percent were scurvy-related.

5. "Alcaidi," that is, *Alcalde,* or magistrate, the executive officer of a municipality. In fact Tinian had a *teniente alcalde,* a deputy magistrate. Saipan and Rota had alcaldes.

6. Ten years later, in 1840, Sherwood was again living on Guam, at Port Apra, where he and several other Englishmen gained their livelihood "chiefly by

attending on the shipping, having purchased whale-boats for that purpose" (Forster, 1991, p. 109). Sherwood had apparently had a varied life since leaving his ship; the Wilson journal also states that he had once lived on South Bonin Island (Forster, 1991).

7. Wilson also tells of this event (Forster, 1991, see p. 86).

8. The ruins on Tinian aroused tremendous interest among European visitors. Ten years later, John Wilson wrote with admiration of the "massive & stately buildings . . . proclaiming beyond question, that no mean nor barbarous people constructed them" (Forster, 1991, p. 86).

9. Governor General Ricafort appointed Francisco Ramón de Villalobos to conduct the investigative mission to the Marianas between 1829 and 1831.

10. "Ryal" = *real*, a Spanish silver coin. Later Lyell states that it was then worth 3.3^{d} (just over three shillings) in English currency. See n. 15.

11. Deer (*Cervus mariannus*) were introduced to Guam in the eighteenth century.

12. "Imbricating," that is, overlapping each other.

13. Lyell crossed out the name he originally wrote here and did not replace it.

14. "Beavers" were hats made of the beaver's underfur, or of a similar material; "Manilas," hats of Manila hemp made from the abaca plant (*Musa textilis*).

15. "3/3^{d} of our money," that is, three shillings and three pence in English currency. The shilling was a silver coin, worth 1/20 of a pound. The penny (pl. pence) was a bronze coin worth 1/12 of a shilling.

16. "Kanata," from the Hawaiian word *kanaka*, a man. Kanaka came to be used widely as a general term for Pacific islanders. In Australia, the term was applied expecially to those islanders employed on sugar plantations in Queensland.

17. "Pleasant Island" = Nauru. All three vessels were from London: *Matilda* was on its maiden whaling voyage and had kept company with *Ranger* off Nauru for several days in January 1831. *Lady Amherst*'s low barrel count could be accounted for by its shorter time at sea, having left port in May 1830; the other ships sailed in September 1829 (Jones, 1986, Index, and pp. 19, 23, 28).

18. The hoe, still in use on Guam, is called a *fusiños* in the Chamorro language (J. Jennison-Williams, personal communication, March 19, 1992).

19. "Levigated," that is, ground finely. Lyell's "Fide rico" tree is more commonly called the *federico* palm (*Cycas circinalis*, known as *fadang* by the Chamorros).

20. The sense of this passage is somewhat unclear, as a crucial word is not clearly legible.

21. Table XIV, facing Lyell's entry for January 14, 1831 (p. 477), contains sketches of insects, fish, and small sea creatures.

22. Lyell's "leprosy of the Greeks" refers almost certainly to a skin disease characterized by dry scaliness that appeared in Guam soon after the establishment of the first Spanish mission there; the "Greek" leprosy may be based on descriptions of a skin disease found in early Egyptian sources that were used by Greek physicians. True leprosy (Hansen's disease) was also introduced to the Marianas in the early contact period. The main features of a common form of leprosy are facial swelling and nodules on the body.

23. *Fawn*, of London, left port on July 8, 1829, returning on April 15, 1832 (Jones, 1986, Index and pp. 87, 93).

24. Lyell, 1829–1832, p. 705 (July 11, 1831). Lyell goes on to say that the British consul in Hawaii (William Charlton) was planning a trip shortly to the new settlement at Port Lloyd

(Futami) on Peel Island (Chichi Jima), established "for the advantage of the Japan Whalers"; the first settlers of the small colony arrived in 1830.

25. Lyell, 1829–1832, pp. 729–731 (July 26, 1831).

26. By this time *Ranger* had taken over 1700 barrels of sperm oil. This was reported by the whaleship *Zephyr* on her return to London in August 1832 (Jones, 1986, p. 95). See also Lyell, 1829–1832, p. 645 (June 14, 1831) for his reference to contact with *Zephyr,* whaling off Japan.

27. Lyell, 1829–1832, pp. 787–789 (September 18, 1831).

28. Lyell apparently had forgotten his earlier account of this affair in 1830, after seeing a group of prisoners on Tinian, when writing this entry.

29. Governor José de Medinilla.

30. Acting *gobernador político militar* Francisco de Villalobos.

31. It will be recalled that Lyell came from a town in the Firth of Tay that was closely associated with fishing activities.

32. "Sacciform" = sac-shaped.

33. Lyell, 1829–1832, pp. 817–819 (October 6, 1831).

34. *Ranger* brought in a cargo of over 1800 barrels (225 tuns) of sperm whale oil—an above-average total. In spite of the serious outbreaks of scurvy, no crew members died from its effects during the 38 months at sea. Three sailors died from other causes.

35. Additional information about the whaleships listed comes from Jones (1986) and Starbuck (1878/1964).

36. Lyell mentions having seen *Zephyr* "in our first anchorage in Guam" (i.e., in late September 1830). He also reports the presence of three unnamed English whaleships at this time (Lyell, 1829–1832, p. 645, June 14, 1831, and pp. 415–417).

37. Lyell mistakenly calls this ship *Endeavour,* but the only Hobart vessel engaged in pelagic whaling at this time commanded by a Captain Lovatt or Lovett was the *Deveron* (Nicholson, 1983).

38. Thomas Beale, surgeon, left *Kent* in June 1832 because of this dissatisfaction with the tyrannicl behavior of the captain. He describes a visit to Guam in February 1832 while still a member of *Kent* 's crew (Beale, 1839/1973).

39. Thomas Beale joined *Sarah & Elizabeth* after leaving *Kent.* On this ship he found "merry, smiling faces" and a "firm, but yet humane" captain (Beale, 1839/1973, p. 357).

40. The *Ranger* was part of a significant British whaling fleet passing through the Marianas, especially in the peak years of the 1820s and 1830s when more British ships were engaged in South Seas whaling than had done so at any other time. American whaling reached its most important phase in the western Pacific somewhat later.

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Book Reviews

Silent Voices Speak: Women and Prohibition in Truk, by Mac Marshall and Leslie B. Marshall. Belmont, CA: Wadsworth Publishing Co., 1990. xiii + 190 pp, photographs, illustrations, maps, tables, appendixes, notes, bibliography, index. Paper, US $11.95.

Silent Voices Speak is an analysis of the self-imposed prohibition on the sale and consumption of alcoholic beverages on Chuuk. The authors focus on the years between 1976 and 1989, during which time Chuukese women were actively engaged in a temperance movement. Placing this movement within the broader historical context of the prohibition debate, the authors present two premises. The first is that legal prohibition of alcoholic beverages should be dispassionately regarded as one option among a range of alcohol control measures, which might be the best option under certain circumstances. The second premise is that changes in Chuuk's alcohol control policies must be understood in terms of changing gender relations.

Although Marshall and Marshall's book is significant for the questions it raises, more often by omission or implication than by inclusion, it fails to support either premise convincingly. The analysis is hampered by the authors' insistent efforts to construct loose parallels between the Chuuk experience and the late nineteenth century Women's Christian Temperance Union (WCTU). The authors trace the Chuukese women's opposition to alcohol back to the American Congregationalist missionaries (who came to Chuuk from Hawaii in the 1880s), and they suggest that the recent temperance movement in Chuuk was a grass roots effort driven primarily by churchwomen, arising from the Catholic- (*Mwichen Maria*) and Protestant-

ISLA: A Journal of Micronesian Studies, 1:2. Dry Season, 1992, 389–412

sponsored (*Fin Anisi* 'helping women') women's groups. According to the authors, these groups were a focus of women's activities outside of the kin group and served as catalysts for women's political involvement.

However, in also emphasizing the forces of social class and kinship the authors inadvertently invite, but themselves ignore, an analysis of power relations informed by the dynamics of class and gender. In a study alleging a feminist perspective, this is a curious omission. Apparently, Marshall and Marshall assume their analysis to be "feminist" because it addresses the Chuukese women's point of view. But feminist analysis is more than a matter of who speaks. Changing gender relations involves changing power relations, by definition. The fundamental points of a power analysis are finally addressed in the last quarter of the book: "Chuukese women used temperance to criticize and control men's behavior" (p. 106). This key construct deserves a probing analysis, but it is not effectively integrated into the argument, and its validity is not established.

What is established is important. Specifically, the issue of prohibition is tied to issues of social disruption in Micronesia and to the traditional role of women as protectors. Marshall and Marshall describe the rapid cultural change that has taken place in Chuuk in the past 30 years. One component of this change is a public style of hostile, disruptive drunkenness, which has contributed to homicide, suicide, and domestic discord. The authors attribute the Chuukese women's motives to protecting the people and in a framing paragraph quote the Asian and Pacific Centre for Women and Development: "... the issue of drunken and violent husbands and the associated squandering of money stands out as the most heartfelt and desperate problem of women in the region" (p. 121).

In 1976 Chuukese women had two bills introduced in the District Legislature—a bill to ban drinking and a bill to prohibit the importation of alcohol. The legislature tabled the first bill instead of holding a general discussion, leading the reader to ask who controlled the political process. Here the authors present an intriguing account of the prohibition debate dating back to the 1950s, rife with conflict and contradiction, and the rescinding and reimposition of prohibition. This history must be seen in the context of another profound social change that has developed in last 20 years: "the rise of a monied elite in a formerly egalitarian society with no traditional class differences" (p. 21). Even though this is an erroneous characterization of what Chuukese society was like 20—or even 50 or more—years ago, the incremental changes the society has undergone in this period have indeed been profound. Moreover, the development of "incipient social classes" (p.

22) and elites is said to involve a history of racial intermarriage; this history and its contemporary implications are left unconsidered.

Throughout the discussion one wonders what was behind the repeated attempts at de-prohibition by certain anti-prohibition magistrates. In 1976, prior to prohibition, alcohol brought the Truk Trading Company hundreds of thousands of dollars in sales. Merchants were obviously affected by prohibition, but it also resulted in a substantial loss of government revenues from alcohol taxes (about 50 percent of the state government's annual revenue in the first year of prohibition). In late 1958, during an earlier phase of prohibition, the Truk Congress voted in favor of making beer available, ostensibly to protect drinkers from the physically damaging effects of home brew. There followed an immediate influx of tax revenues, and in fall, 1959, the Truk Congress extended the hours for beer sales. By the late 1970s and early 1980s, again under prohibition, a thriving black market existed, and by 1985 prices were double what they were in 1976. These black markets were owned by elites: merchants, businessmen, politicians, government employees, and members of the municipal council.

As time went on, the authors describe the public flouting of prohibition laws by elites who held positions of power, including the liquor-selling activities of some legislators, their exemption from arrest, and their continuation in office without public outcry. During the summer of 1985, the Chuuk State Legislature did not have a quorum because members were hung over and absent. Many police officers were known drinkers involved in the black market.

Clearly, certain elite men had a vested interest in maintaining prohibition. Marshall and Marshall do not tell us how these men are related to each other or to the elite women of the temperance movement. They do tell us, however, that "Chuukese politics are still largely those of kinship" (p. 52), that "loyalty to relatives is assumed to transcend loyalty to a cause" (p. 53), and that there exists "local political intrigue and competition" (p. 68). Without drawing conclusions themselves, the authors give us enough political detail to allow us to extrapolate questions of motive in legislating alcohol availability. Lacking concurrent consideration of these kinds of questions, however, the book pursues a thesis that is only partially coherent. The comparisons between the temperance movements in the United States and Chuuk are thin and sporadic, providing a questionable point of reference for dissecting the social dynamics. In the face of other observations, these comparisons deflect the reader from more problematic issues.

Late in the book the authors touch on a more rudimentary and powerful connection to nineteenth century influences: The temperance movements in Germany, Great Britain, and the United States, the three major colonial powers in the Pacific, "were reflected in the attitudes of Christian missionaries and colonial administrators in the Pacific" (p. 122). Upon the introduction of alcohol by whalers and traders, islanders mimicked their rowdy behavior (suggesting that later drunken comportment was a learned behavior carried over from colonial days). Colonial laws against alcohol were enacted to protect Europeans, who were not subject to the laws. With decolonization after World War II, the 1950s prohibition laws were being revoked as anachronisms inherited from the colonial era, so that much of the Pacific suddenly emerged from 75 to 100 years of imposed restraint. The postwar generation—the parents of today—was the first to grow up without prohibition and presumably without models of appropriate consumption. The authors footnote the fact that areas of the Pacific under French colonial influence did not experience the same degree of temperance sentiment. The colonial question offers a potentially fascinating contribution to a more sophisticated work. Why not address it?

The authors' assessment that "prohibition altered the context of alcohol use" (p. 83) is clearly supported. Public drunkenness has been redefined as "shameful" (p. 85) and drinkers now drink mostly in homes or hidden in the bush. Marshall and Marshall report that prohibition seemingly has benefitted family life through reduced domestic violence, but that there has been little effect on other types of crime, or on public health or personal risk. As of 1985 there was overwhelming public support for the law, although as indicated above, enforcement remained lax. Marshall and Marshall say that women accepted this because they felt they had won the moral victory. If the purpose of prohibition had been not to eradicate a vice but rather to eliminate or decrease violence and social disruption, then complete enforcement would have been unnecessary if the purposes of social cohesion had been served. Prohibition then takes on a symbolic force in social control of secondary behaviors (and indirectly in women's control of men's behavior), as well as having a de facto effect on curbing those behaviors.

Prohibition allows this to be accomplished without shaming the perpetrators or the families because the focus of negative attitudes is toward the primary behavior, drinking; consequently, there is no shame for a personal failure in social relationships or a family failure in social control. In other words, so what if drinkers go underground and liquor sales continue in a more surreptitious fashion, as long as the community destruction re-

mains curbed. The question then becomes, is that what happened? Did domestic violence, fighting, brawling, and other drunken behaviors actually decrease, or did they remain as ever, but now undercover? The authors assert that the public perception that the prohibition law had reduced alcohol-related violence was a shared public fiction because facts are otherwise. Among their considerable evidence is the succinct quote from Francis X. Hezel: "drunken fighting is alive and well" (p. 82).

Marshall and Marshall cite public support as crucial for adherence to prohibition. Why does the public share the fiction? Does the law serve a symbolic function in affirming the Christian temperance values of older men? Does the law reinforce their status as important community figures? Further, the perseverance of prohibition may be a symbol of women's organized public involvement in social policy as the authors contend, but it also functions as a temporary accommodation to public outcry: It is permissible for women to unite under the guise of morality and male approval, but that constitutes neither basic social transformation nor feminist action. The male elites' support of women's actions preserves their own power and control in the context of the potential (and threatening) power redistribution.

As Marshall and Marshall inadvertently pointed out earlier, the elite, the ruling class, were untouched, or merely inconvenienced, or financially enriched by prohibition; it was a policy effected primarily on the common people, as it continues to be. The definitions of the commoner and the elite simply change to reflect the contemporary power structures, be they colonial administrators, missionaries, church leaders, legislators, or merchants.

Eventually, Marshall and Marshall hit on a key for acceptance of prohibition in Chuuk: an external social control for "restoring the balance of control between individuals and the collectivity" (p. 141). Prohibition certainly altered the context and pattern of alcohol use, but the question remains as to whether that pattern is altered in a way that is as destructive as the old model, while prohibiting the development of a pattern that can minimize the potential for social and personal destruction. Those circumstances may be explanatory, but they do not prove the authors' first premise, that prohibition is the best option.

Marshall and Marshall's second premise is equally problematic. They state, "prohibition provided a testing ground for women's emergence as a powerful political force in contemporary Trukese life" (pp. 143–144); it "stimulated women leaders to question political and social fetters . . . [and] . . . set a small but influential minority of elite Trukese women on the road to political activism . . ." (p. 108). In this regard the authors demonstrate

a growing participation of women in public life, but they do not demonstrate that "church women's groups—more than other women's organizations—have provided the base for reaching out to the whole community" (pp.57–58). They also state that the temperance movement was an outlet for feminist impulses activated while attending college in the United States, and in fact those women who were prominent in the temperance movement were described as among the elites who had training in nursing or teaching and who had access to outside ideas.

Furthermore, Marshall and Marshall state in their final chapter that Pacific women have periodically taken joint political action. What were the other instances? What were their causes and outcomes? Why is there no analysis of the Chuukese women's action as part of a wider regional phenomenon, or political movement, or cultural transition? Is it merely another sporadic blip? Or, with this 30-year history of female political action against alcohol, why have Chuukese women had so little success in the wider political action arena?

Here again the authors provide a clue. The temperance movement "was not a 'revolutionary' gesture by women but rather a new behavior brought into accord with the conservative canons of Chuukese culture" (p. 146). They quote Rosaldo (1980, p. 395), but do not apply that insight to the process at hand: "women's goals themselves are shaped by social systems which deny them ready access to the social privilege, authority, and esteem enjoyed by a majority of men." The issue remains one of power and gender, a releasing of pent-up pressure until enough is spent so that they can withdraw, feeling victorious about cosmetic change; it is a mollification. Church groups provide safe staging grounds for such action, and religion is a great force for social control. A limited amount of invigorating activity in its name reinvigorates its own power and strengthens its social force and control. Righteous indignation is an effective way to channel anger and frustration in a way that is ultimately reinforcing of social norms (and gender divisions) and religious precepts. It allows venting but does not touch the real power structure. Members of the WCTU and Chuukese women leaders were educated, urban, middle class, church involved, and vested in the mores of the dominant culture and its power allocation.

Marshall and Marshall skirt the question of temperance/prohibition as a rejection of male power and domination and opt instead for their argument based on domestic protection. They leave us hanging by not describing current activities of Fin Anisi and Mwichen Maria. Is there continued movement in the direction of a larger women's role in shaping community life?

Has the women's movement there been co-opted by the public success of the temperance movement? Has prohibition been a minor behavioral concession by the elite that has a placating effect on the women's perception of need and power? Marshall and Marshall sidestep these issues with the curt observation that time will tell, because "nothing approaching the US women's movement in the late 1800s has yet emerged from Truk's temperance activism" (p.102).

In sum, the book makes a better case that the WCTU and Chuukese temperance movements have little in common, beyond the superficial element of women speaking out, than that they share striking parallels. Organizationally, the book is repetitious, rambling, and disjointed. It is short on insight and lacks a compelling basis for its "feminist" identity. The value of the book remains in the questions it raises, albeit obliquely, in the continuing debate over the construction of social histories and social power in the emerging Pacific.

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Nest in the Wind, Adventures in Anthropology on a Tropical Island, by Martha C. Ward. Prospect Heights, IL, 1989. vii+161, maps, illustrations, annotated bibliography. Paper, US $9.50

Nest in the Wind is a subtle, well written account of Martha Ward's personal and professional experiences while managing the field component of a large US government-sponsored National Institutes of Health (NIH) sociomedical study on Pohnpei (formerly Ponape) during the 1970s. Aimed at lay readers, the book does not purport to be a work in Pohnpeian medical anthropology. Rather, as Ward puts it, "it is an 'impressionistic

tale'. . . to evoke images, a sense of immediacy, and the feeling that you are there participating and observing" (p. 4). In keeping with an impressionistic mode of exposition, Ward invites readers to draw their own conclusions about a variety of matters as the narrative unfolds through illustration and example.

The story begins with a brief introduction to the study's scientific rationale, its field strategy, and its key players. Three anthropologists, led by the late John Fischer, and a team of medical specialists who performed health exams constituted the professionals who worked in the field; in addition, several Pohnpeians administered the questionnaire and participated in the interviews. Ward and her colleagues immediately learned the overriding importance of Pohnpeian politics, both to the Pohnpeians and to those who would do social scientific research there. The reader learns something of the links among local politics, health and living conditions for foreigners and locals alike, and the colonial policies of the US government over the last several decades when Pohnpei was part of the Trust Territory of the Pacific Islands. To those familiar with the region these observations will not be new, but to others the official neglect of these islands' best interests over recent decades may come as a shock.

Ward's professional duties in the field included hiring, training, and supervising Pohnpeian interviewers in taking a census and in administering questionnaires regarding health and life-style changes under conditions of modernization. She had to learn the Pohnpeian language quickly and overcome the many logistical and other practical difficulties of carrying out statistical research in the Third World. An important point was that the categories used in the study did not necessarily correspond to native Pohnpeian concepts, making it difficult although not impossible to explain the purpose of the project and to translate adequately the questions being asked of respondents.

Ward's personal situation in the field included the presence of her husband Roger, who was at the time a graduate student in cultural anthropology. His main job was to collect information for a dissertation on Pohnpeian curing practices and traditional attitudes and beliefs about disease. He assisted the sociomedical project as budget director and motorcycle mechanic. As many married working women know, and Ward came to realize, while her husband had only one major claim on his time and energy, she had two: the highly intensive and stressful work of the project and the nearly incessant domestic work that kept their makeshift household running smoothly. Somehow this also involved doing what she could to prevent the difficult living and working conditions from badly upsetting the team of medical co-investigators who

were in the field part of the time. The modern marital tension-producing "second shift" among working couples, described at length by Berkeley sociologist Arlie Hochschild (1989), apparently followed these researchers all the way to Pohnpei. Ward's personal and professional responsibilities overlapped in a special way; in addition to her project and domestic responsibilities, she also gathered data for her husband's dissertation, beginning with observations on women's cures, which as a man he could not readily participate in or observe. Later their focus broadened to include investigations of sex, sorcery, incest, and politics.

An irony not lost on this reviewer is that while Ward's husband studied mainly the ways Pohnpeians treated and thought about disease, when she became pregnant toward the end of their stay on the island, she discovered that the Pohnpeians actively prevent illness by deliberately promoting human well-being. This health strategy includes not only avoiding or deflecting harmful magic, but also recognizing and trying their best to fulfill a person's physical and emotional needs at all the stages of life from birth and childhood to childbearing and child rearing and to aging and finally dying. During Ward's pregnancy, Pohnpeian women and men behaved toward her with a sensitivity that showed a profound respect for, as well as a sympathetic understanding of, her special condition. But these were the kinds of observations and experiences neither her husband nor the medical specialists thought important. Illustrated in this way, the contrasts between Pohnpeian and American society in attitudes toward pregnancy and childbearing are striking, and the book contains many others.

At the end of the last chapter Ward admonishes the reader with a Pohnpeian saying: "You who hear my story should listen very carefully and straighten it out for yourself. Sometimes what I say is not straight" (p. 149).

Reading between the lines, it is apparent that the field study for which Ward took a major responsibility was not anthropology as she prefers it, and she expresses little regret that the results were never fully published. Her main regret is that "we have yet to find a way to relate these findings, however esoteric, to the lives of ordinary people" (p. 153). However, the study did show that high blood pressure is correlated with weight gain and increased salt intake and that on Pohnpei high blood pressure, heart attacks, and cardiovascular diseases are increasing. It is no secret that these are the ill effects of modern life-styles encouraged by uncontrolled imports of salt, sugar, canned food, and alcohol—and government encouragement of a wage economy that takes people away from subsistence farming and turns them into avid consumers of purchased commodities. Scientific knowledge of these

relations would seem to allow the recommendation that such clearly harmful trends in life-style be officially discouraged. Solutions might include government control of the flow of imports into such a vulnerable setting and redesigning the economy away from make-work government jobs.

Throughout the book Ward implies that living close to the Pohnpeians, as she and her husband did, and getting to know the Pohnpeian language and customs—in short, participating in the Pohnpeian culture as foreigners and interpreting their experiences in light of a particular school of thought within anthropology—is doing anthropology. In effect, it is. But general readers should be aware that there are many kinds of anthropology these days. As one trained within an interpretive paradigm different from that of Ward and her mentors, I found myself often disagreeing with her professional interpretations, which are casually dispersed throughout the text but concentrated toward the end of the book.

Ward's anthropological perspective is humanistic and focused on the individual. She is thus scornful of attempts to quantify what to her are essentially immeasurable experiences of persons living in another culture, a futile endeavor she seems to equate with "hard science." As an alternative she offers explanations for the puzzling behavior of the Islanders refracted through a contemporary American upper middle-class lens. These are like the "feel-right" explanatory essays one reads in the newspaper by authorities on individual psychology that purport to account for past and contemporary sociocultural phenomena. For example, Ward explains the modern social problem on Pohnpei (it also occurs elsewhere in Micronesia) of teenaged boys getting into trouble—stealing, getting drunk, fighting, and generally not obeying their elders—as follows.

> The truth is that the most useful and rewarding activity that young island males ever did was to go to war and kill each other at the behest of their elders. Young men supplied the cannon fodder for the wars between the municipalities that the old men planned. But pacification in the twentieth century and less bloody forms of competition have made this role superfluous. The most common kind of murder, two young men in a drunken fight with machetes, is a contemporary substitute. There is little new about the brawling, curfew violations, rambunctiousness, and rebellions of adolescent males. Channeling their energy is a problem in every human society. Those who survive to a wiser, calmer maturity believe that the current generation of boys is the worst ever and will come to no good end. (p. 104)

In this quotation Micronesianists will recognize an incarnation of Mac Marshall's hypothesis, offered in *Weekend Warriors* (1979), for why modern Chuukese male teenagers get drunk, get into fights, and generally have trouble with alcohol in the district center of Moen (Weno). Marshall has suggested that this behavior is a cultural throwback; the teenagers are just acting out an ancient mode of culturally prescribed behavior, fighting and being belligerent, that has been inappropriately carried over from the time when the Chuukese culture expected young men to be warlike.

Far from "the truth," Ward's assertion that going to war in the prehistoric past was "the most useful and rewarding activity that young island males ever did" reveals a misunderstanding or at least a questionable representation of ancient Pohnpeian culture and seems arrogant to boot. How does Ward know that Pohnpeian male teenagers once were good for and enjoyed little else than fighting in wars? What about young men's participation in other "rewarding" aspects of Pohnpeian culture, for example, in contributing to their relatives' day-to-day and year-to-year well-being (the kinds of experiences Ward witnessed so often as a participant-observer in Pohnpeian life), such as helping in the planting, care, and preparation for feasting of the staple breadfruit, in the harvesting and pounding of *sakau* (kava), in the building of canoes and houses, stone piers and pathways? These are the kinds of activities that engender pride and satisfaction in Micronesian young people still fortunate enough to participate in them. What about the many times when teenaged boys carried their young siblings around on their shoulders, visiting, gossiping, and just enjoying the company of nearby relatives and friends? What about the courting and love-making excursions that filled so many nights? Were these activities that once engaged, and in many parts of Micronesia still engage, male teenagers less useful and rewarding than fighting in wars?

In fact we do not know the frequency of prehistoric interdistrict warfare. Warfare itself is an imprecise term generally implying large armies, but we do know there have never been large armies on Pohnpei or anywhere else in Micronesia. We have good reason to suspect that warfare on Pohnpei was not like European warfare—fought with guns and cannon and always resulting in heavy casualties. The usual Micronesian pattern, and probably Pohnpei was no exception, was a brief engagement or skirmish, with somebody getting wounded or a predesignated victim being assassinated or maneuvered into receiving the attacks of the other side, and then everybody going home.

These clashes were political, reflecting the competitive milieu. Such disputes were settled by other means, such as negotiated payments and other compromises whenever possible. Engaging in warfare in prehistoric Pohnpei, as elsewhere in Micronesia, was probably quite rare and therefore only intermittently "rewarding." The winners in any case were not individuals but larger social units such as the lineage or clan, or alliances of these units.

More to the anthropological point is the questionable assumption that underlies Marshall's hypothesis (and Ward's adoption of it for Pohnpei): that aggression and a tendency to violence is an essential property of young men generally, which every society must "channel" in order to keep it under control. On Chuuk and Pohnpei this supposedly male propensity was "channeled" into warfare in the past but is now not being "channeled" properly because of changed cultural circumstances. We are to infer from this line of reasoning that psychological properties such as a tendency to violence account for large-scale societal phenomena such as warfare and teenaged drunkenness and fighting and that there is no reason to look outside the individual and his or her psychological tendencies for explanations of cultural variation. This kind of explanation is what is properly called reductionism, anathema to deductive-nomological science, whether in psychology or anthropology, in which causal arguments must be free of circularity. Ward offers her circular interpretation of Pohnpeian teenagers in trouble as an anthropological insight, and as such it may be accepted by lay readers, particularly because it does not contradict the general tendency among the public to reduce social problems to their more familiar personal dimensions. This does not make it correct, however, and much more could be and has been said on the subject elsewhere.

Professional disagreements such as the above notwithstanding, Ward's book is instructive and entertaining and of special interest to female readers because she finally discovers a kinship, or more precisely, a "sistership," with Pohnpeian women. More broadly it is a sympathetic traveler's account showing what a long stay can be like in a relatively traditional Oceanic society for a foreigner who with an open heart learns the language and customs of her hosts. The personal insights are powerful, particularly for other social scientists with an eye and ear for sociological nuance. As did I, many who have worked in the Pacific will recognize themselves and the islanders they know, as well as spouses, colleagues, and mentors, in Martha Ward's Pohnpeian adventures.

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Beyond the Dream: A Search for Meaning, by Laura Thompson, MARC Monograph Series, No. 2. Mangilao: Micronesian Area Research Center, University of Guam, 1991. xi+159 pp, map, photographs, glossary, notes, index. Cloth, US $25.00; Paper, US $16.00.

> In one short sojourn on earth, can one acquire the expertise and deep wisdom to comprehend and help one's fellow men and women? The missionary's way, the social worker's approach, the anthropologists' cultural relativism, these well-trod paths seemed to me like blind alleys, surface treatments at best. An unrelenting quest for an inner message behind the outer show led me to become a student of humankind, a professional anthropologist exploring the world for answers to the universal conundrum. (p. 4)

This is the personal autobiography of a woman who is the recipient of the Bronislaw Malinowski Award from the Society for Applied Anthropology (1979), a PhD in anthropology from the University of California, Berkeley (1933), and an honorary LLD from Mills College, Oakland, California, from which she earned a BA in economics and sociology (1927). She is also the author of numerous monographs (*The Hopi Way,* with Alice Joseph, 1944; *Guam and Its People,* 1941; and several others). Now approaching 90 years of age, Laura Thompson's life encompasses many of the significant historic developments within the field of American anthropology — its acceptance as a distinct discipline of scientific inquiry, its concern with collecting sufficient data to illustrate that different behaviors and values are

not genetically determined but parts of a culturally distinct patterned whole, its maturation into differing schools of thought centered on definition of the culture concept and modes of interpretation cross-culturally, and an introspective reexamination of the practice and process of the profession itself. These developments occurred as the boundaries between the observer and the observed blurred, as the discipline of anthropology grew beyond tribal boundaries in number and approaches, and as its practitioners became increasingly aware that what is ultimately learned when studying another culture is oneself and one's own culture.

The professional anthropologist will find this book frustrating, for Thompson's framework is that of an individual who happens to be a woman and an applied anthropologist. She elects to share "some offbeat ventures, some unusual opportunities, and some lessons in living that they may have taught" (p.1) with the humanist reader, offering an anecdotal smorgasbord of vignettes and lessons learned from events that helped shape her path, beginning with the realization that religious absolutisms were but cultural codes and then to development of a culture-free moral code. There are two primary reasons for this autobiography: to share a self-actualized life with others who are similarly privileged to find themselves searching for meaning within systems of inherited values or beliefs that no longer guide or satisfy, and to clarify for the reader the urgent need to listen closely to other cultures that have developed lifeways more ecologically sound than has the Western industrial world (e.g., the Hopi). Her plea is for the development of a global ethic and a more realistic approach to environmental/population problems than one that adheres only to values inherent within Western economic or religious systems.

Anthropology as a discipline and the role of the anthropologist in the interpretative process are subsumed to the personal quest and the quest for a global ethos. The result is a skewed perspective throughout, in which the responses of others are rendered inexplicible because the full contexts of the intellectual environment of which Thompson was a part are not delineated. The reader cannot distinguish among those issues that are gender specific, theoretically or ethically oriented, or personally based.

In that Thompson states a second goal of her autobiography is "to explore a current trend toward the development of applied anthropology, defined as a study of humankind and its application to practical life problems" (p.1), the value of this autobiography suffers from the failure to place herself introspectively and fully within the milieu that guided and informed her search. Apparently a private person, Thompson respects the confidentiality

of informants within the cultures she studied, reserves personal tales of the rigors of fieldwork for another audience (Thompson, 1970), and becomes most human—at her best and at her worst—in descriptions of husbands, missionaries, and Margaret Mead. Nonetheless, the author's tendency to make several broad generalizations within a sentence and to capitalize Important Messages overwhelm the reader; the text's readability is further obscured by a lack of careful editing and a most unfortunate Editor's note that describes Laura Thompson as "a rare flower in the garden of anthropology" (p.vi).

The book is divided into four parts. Part I ("Memories of Childhood") is at once an affectionate portrait of growing up the younger but more sensitive of two daughters within a secure Victorian American family in Honolulu and an assessment of the profound impacts on her of the myths she was taught as fact and her mother's strict religious teachings, whereby all authority figures and types of credibility, including the written word, became suspect. An observant child within a multiethnic neighborhood, Thompson felt compelled to discover everything for herself, experience the world and its people firsthand, and reach an understanding that would be beneficial to others and, above all, not harm them. Discrepancies between religious teachings and observed behaviors fostered a 10-year study of messages inherent within Christian orthodox teachings, a decision to break from the fold, and a lifelong search for a code that fosters the well-being of life rather than internalized guilt or shame. Thompson's retrospective impresses anew how difficult and lengthy is this process.

Part II ("Becoming a Professional") sketches her educational path from a one-teacher private elementary school through undergraduate work at an intellectually stimulating but too-sheltered California women's college. Thompson turned to anthropology, then a somewhat questionable profession (because of its interest in the exotic and the unusual) after experiencing dissatisfaction with the effectiveness of social work in the multiethnic neighborhoods of Honolulu. Her path led from Dr. Kenneth Emory, of the Bishop Museum, to Harvard University, which permitted women to attend classes only by enrollment at a women's college (Radcliffe). Perhaps as a result of being raised without brothers, Thompson had not contemplated gender inequality until there, and she left after a year's study, committed to the discipline but unwilling to undergo the "daily downgrading" (p.32) of her gender. After 6 months of archaeological work at the Bishop Museum, Thompson resumed graduate studies at the University of California, Berkeley. As a personal autobiography rather than an intellectual one, the focus

here is on the German student who became her husband/field companion and the ordeals of the doctoral process. Thompson frequently alludes to issues of gender throughout the book, but she does not explore its implications either personally or professionally. I wondered why there was no mention of Franz Boas (Columbia University) who, among his efforts to combat prejudice and the racism inherent in the belief that cultural traits are genetically determined (the nature/nurture argument also utilized by the Nazis of whom Thompson writes), trained and sponsored the careers of many of the distinguished women who were Thompson's colleagues. In a field where women continue to be well represented but underemployed and underpaid, Thompson's repeated references to gender discrimination as existing only "before the Women's Movement" (pp. 99, 134) are in serious error.

Part III ("Field Expeditions") covers fieldwork and observations in different ecological areas—initial research in Fiji; Germany as experienced by being a daughter-in-law of a German family and a professional caught in Nazi Berlin; problem-oriented studies in Guam for the US Naval Administration; work in Hawaii and Iceland; and projects with several North American Indian groups and marriage to John Collier (US Bureau of Indian Affairs). In Fiji, Thompson confronted the isolation that comes from being away from one's culture within a wholly different island environment. Contemplating the foreign faces before her brought awareness of the difficulties in grasping the ethos of another culture or another's mind. She learned in Fiji to search for the meaning behind behavior,

> . . . to look for the design of a culture in its total setting, and to inquire into the processes by which customary ways develop and adapt to the natural environment, persist, and change as they may actually be observed in space and through time. (p. 60)

In subsequent analyses, she sought to elucidate the "why" of a culture. Although Thompson notes other thought patterns may be "analogical" (p. 61) rather than cause-and-effect oriented, she believes the "hidden inner meanings" (p.60) of specific cultures is best approached through long-range team projects that utilize multidisciplinary techniques, along with a careful examination of specific ecological environments. The value of the implicit anthropological themes—that there is no universal language, culture, religion, or value system, and that programs that seek to implement change without careful consideration of the specific culture are not only doomed to failure but also may damage those whom they seek to help—is again weak-

ened by prejudiced statements about religion and a need to make readers aware of their own ethnocentrisms.

Part IV ("Looking Ahead") deals with lessons learned from a third marriage, later life, and an unregretful move into an ethnography on aging. Her goal here is the application of empirically-based general principles that had emerged from her cross-cultural studies and from her own philosophical development to global problems.

Thompson's autobiography is personal, written for a humanist audience, and with a deep concern for the future. I regret that I did not find this book effective at any level; if that is so, one must ask what should a good autobiography be?

In 1962, Jacob Gruber (1966) noted the surprising lack of good biographies by anthropologists, especially noticeable in a field that deals with small societies in which the life history method serves as one kind of "distillation of the life-way of the group" (p.vii). Gruber attributed this lack, in part, to the very newness of anthropology. Sufficient time had not passed to permit detachment from our "heroes," and the kinship-like ties that still exist between the generations of anthropologists not only limit historic scope but also "inhibit any but the most self-conscious of biographical treatment" (pp. 14–15). Moreover, the paradoxical requirements of the anthropological process—participation/observation methodology and interpretative/scientific detachment—have led the anthropologist to downplay the role of the person within the subjective process of creativity (as is every scientific endeavor). Gruber suggested that anthropologists address themselves more fully to questions that clarify the involvement of the person within the process and, secondly, within the full intellectual contexts that guided thinking. Mead's autobiographic works (1972, 1977) appeared to address this need but later biographies (e.g., Bateson, 1984, on Mead, and Caffrey, 1989, on Benedict) clearly reveal how professional autobiographies are highly selective.

The "scientific detachment" required of earlier anthropologists depended largely on brief periods of field research and downplaying the subjective or personal in order to educate the public or convey a broader message. Modern fieldwork, in which 2 years of study is routine, has brought an increased awareness of the ultimate mystery of knowing another and of the cultural biases inherent in our perceptions, mental processes, and interpretations. At a time when those we once studied label our efforts colonialistic at best and question, as do we, our abilities to interpret "meaning" free of culture bias, Gruber's guidelines are especially relevant to a book that deals with problems in "meaning." Questions of "meaning" belong to

a person's past, and a fully contextualized autobiography would have been of value to biographers and historians who, having the advantage of time, can better extract meaning than can those of us in the present.

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Guam Diary of Naturalist Antonio de Pineda Y Ramirez, 1792, by Antonio de Pineda y Ramirez. Translated by Victor F. Mallada and edited by Marjorie G. Driver. Mangilao: Micronesian Area Research Center, University of Guam, 1990. viii + 85 pp, plates, maps, appendixes, notes, references. Paper, US $5.00.

Antonio de Pineda y Ramirez was born in Guatemala City in 1753. Educated in Spain in both military matters and the natural sciences,

he first had a military career, from which he retired as a Lieutenant Colonel. During his scientific career, he participated in several botanical expeditions for the Jardín Botánico (Botanical Garden) in Madrid and was the head of the natural history portion of the Spanish scientific expedition, under the leadership of Alejandro Malaspina, that left Spain in July of 1789. The expedition reached Guam on February 12, 1792, and departed Guam for the Philippines on February 24 of the same year. While in the Philippines Antonio de Pineda y Ramirez fell ill and died on July 6, 1792. His brother Arcadio, also a member of the Malaspina expedition, inherited his notes and specimens.

When the expedition returned to Spain, Arcadio made plans to publish his brother's work in five volumes of 400 to 500 pages each, but for various reasons, mostly political, this never came to pass, and the unpublished materials remain today in Madrid at the Museo Nacional de Ciencias Naturales (National Museum of Natural Sciences). In 1984 the University of Guam's Micronesian Area Research Center (MARC) acquired a copy of a 46-page manuscript that deals with Pineda's 12-day visit to Guam. It has now been translated, copiously annotated, and published by MARC.

The publication includes a translator's preface (from which the foregoing biographical material was summarized), the English translation of the Spanish manuscript, a line-for-line transcription of the Spanish manuscript, 23 plates from drawings made on Guam in 1792 by artists with the Malaspina expedition, three maps of Guam made at the same time, 107 explanatory notes, and a list of references.

Pineda spent most of his time in the southern part of Guam, between Umatac and Agat, but he did travel as far north as Agaña and then eastward across the island to Pago. Because he concentrated most of his activities in the inhabited parts of the island, his manuscript deals more with cultivated landscapes and plants used by the people than with "natural" landscapes and wild plants.

Pineda's writing demonstrates that he was a well-educated and broadly trained naturalist. He had a good working knowledge of the work of Linnaeus and that of Rumphius (which was especially important to a naturalist working in the tropical parts of the western Pacific). Although most of his notes refer to plants, he also deals in some depth with geography, geology, soil science, and zoology.

Although Pineda's visit took place more than 200 years after regular contact between Guam and European visitors had begun, this account is the earliest work to describe in an extensive way the natural history of a large

portion of the island. This alone would make it an important work, but of additional significance are the observations on the Chamorro diet and information on the agricultural inventory and practices of the period, which offer interesting insights into the rapid assimilation of New World crop plants on Guam.

MARC, the translator, and the editor are to be congratulated for making this work available to a much wider audience than previously had access to it. They deserve special praise for making it available in format that includes a transcription of the original Spanish-language manuscript, the English translation, and copious interpretative notes. Although the notes have a few typographical errors, (e.g., in note 98 the bird under discussion is the broad bill, not the brood bill) and a reader can occasionally reach conclusions different from those in the notes (e.g., in my opinion the plant called *Ixia,* discussed in note 53, is much more likely to have been an *Ixora* than a member of the family Zingiberaceae), the notes are helpful and generally offer authoritative and useful interpretations.

This work is important to people interested in the natural history and human ecology of Guam. It is regrettable that Pineda did not spend 12 months, or even 12 weeks, instead of only 12 days on Guam—we could have learned so much more from this scholarly diarist about what the island was like in 1792.

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Overreaching in Paradise: United States Policy in Palau Since 1945, by Sue Rabbitt Roff. Juneau: The Denali Press, 1991. x + 230 pp, notes, maps, appendix, bibliography, index. Cloth, US $27.50.

The thesis of this book is that the United States has taken unfair advantage of Palau during the process of negotiating and voting on a political status of free association to replace that of trusteeship. Roff's thesis is considerably influenced by her antinuclear position.

Roff devotes half of the book to background. She has a solid first chapter documenting the 40-year development by the United Nations member na-

tions of norms of international law governing decolonization. The key norm has been self-determination through a people's free and general expression. Roff then uses this norm as a basis for discussion in chapter 2 of the US Naval and the Trust Territory of the Pacific Islands administrations of 1945 to 1980. She maintains that during its 3-year administration, the US Navy adequately addressed the problems of postwar rehabilitation but failed to begin development of an indigenous economy. Except for the chartering of municipalities throughout the Trust Territory and the creation of an all-Micronesian Advisory Committee to the High Commissioner, the 1950s were, Roff concludes, "a period of stagnation for the territory" (p. 59). She then describes the "Solomon Game Plan," which recommended to President Kennedy the implementation of a development program that would ensure Micronesian sympathy toward eventual political union with the United States. The Solomon mission also recommended the creation of a territorywide legislature, the Congress of Micronesia, whose Future Political Status Commission determined in 1969 that the most desirable future political status for the scattered islands would be "a self-governing state and that this Micronesian state . . . negotiate entry into free association with the United States" (p. 66). The Commission also concluded that it felt confident in entering "into responsible negotiations with the [US] military, endeavoring to meet American [land] requirements while protecting our own interests" (p. 67).

However, Roff argues, this apparently pro-US attitude quickly changed as the Congress of Micronesia and its negotiating commission took on a marked nationalistic attitude. The United States responded by encouraging political fragmentation, which the Micronesians themselves contributed to when Palau and the Marshall Islands rejected a territorywide constitution in 1978. Roff claims the United States played a role in this political fissioning because it "was unwilling to risk ratification of this strongly sovereign constitution" (p.74).

Roff concludes her review of the Roosevelt-to-Carter period with discussion of how a strategic trusteeship ought to be terminated. She claims that according to international law the United States should seek UN Security Council approval for termination of the Micronesian Trust. Roff criticizes the United States because it, in fact, sought to end the Pacific trusteeship unilaterally, and that each administration from Johnson to Carter aimed

> to negotiate a deal with a sufficiently sovereign group of Micronesians to limit their sovereignty, preferably without them noticing it, and

> then have that deal accepted by the United Nations as freely associated state status even if it meant bypassing the Security Council and in effect terminating the trusteeship unilaterally as South Africa had tried to do in Namibia. (p. 88)

In the remainder of her book, chapters 3, 4, and 5, Roff examines in detail the seven plebiscites Palau conducted on the Compact of Free Association and concludes that future prospects for ratification by the Palauans of a political status of free association are unlikely because the United States has "overreached its rights as administering authority . . . in insisting on seven plebiscites and in its determination to have the nuclear-free clauses of the Constitution of the Republic of Palau overridden" (p. 186–187). The weakness of this conclusion is that it does not carefully consider Palau's internal factional feuding and the significant impact this has had on voter behavior in this small-scale society.

Roff's comparison of the US–Micronesian political situation with that of South Africa–Namibia is unfair because the Micronesians were never negotiating with US officials who held racist views as individuals or whose official actions were influenced by a government policy of apartheid. Negotiators from both sides have generally been competent professionals, dedicated to working through the manifold, complex details of a unique government-to-government relationship. Roff is correct about the US strategy for ending the trusteeship for the Northern Mariana Islands, the Marshall Islands, and the Federated States of Micronesia (FSM). The US approach was to avoid a veto by the Soviet Union by making the exercise a procedural one in the UN General Assembly. Former President Nakayama of the FSM told me that after this strategy was outlined to him by Ambassador Walter and reviewed by his legal council, he accepted it. Nakayama stated, "I then lobbied hard with many of the UN countries and most of them responded, 'If that's your people's desire, okay' " (personal communication, August 30, 1989). After his return to Chuuk, Nakayama received a huge reception in celebration of the termination of the FSM trusteeship. Even his longtime political rival, Nick Bossy, congratulated him on the achievement. This issue was finally closed in December 1990 when the 15-member UN Security Council approved termination of the trusteeship of the Micronesian islands—except Palau—by a vote of 14–1, with Cuba dissenting. This action was made possible because of the dramatic changes in Soviet foreign policy.

Roff's implication that the various US administrations from Johnson to Carter attempted to outmaneuver the Micronesians with respect to sovereignty is mistaken. For Palau, Salii and Tmetuchl were astute negotiators

supported by competent staff. Since the concept of free association emerged in the early 1970s, Palauan leaders have recognized that a free association relationship with the United States entailed the relinquishing of certain security and defense rights and responsibilities to the United States in exchange for financial and grant assistance. In essence, Palau had a key resource—strategic location—and Palauans would rent this resource for the best possible price. Furthermore, Palauan negotiators have succeeded in obtaining favorable changes in the Compact even after the United States had publicly stated that it would not accept renegotiations. The Guam Accords of May 1989 is the most recent example of US willingness to hammer out mutually acceptable changes to the Compact.

Roff claims that the United States overreached its rights in insisting on seven plebiscites to override the nuclear-free clauses of the Palau Constitution. The problem with this position is that it assumes passivity on the part of the Palauans. On the contrary, Palauan political leaders have been very active in the status issue. For example, Haruo Remeliik walked out on Ambassador Rosenblatt during a 1979 meeting at which the US representative stated that Palau would need to amend its constitution to be consistent with the Compact. Further, on seven separate occasions, Presidents Remeliik, Salii, and Etpison called for legislation providing for referenda and political education activities on the Compact. Seven pieces of legislation were written and passed by the Palau National Congress (OEK). With this measure of self-determination, it is hard to make the case for US insistence, particularly when Roff gives no evidence of coercion, either covert or overt.

Regarding the requirement that 75 percent of the Palauan electorate must approve the Compact to override the nuclear-free clauses of the Palau Constitution, Roff's analysis is deficient because it lacks attention to the intricate and complex dynamics of Palauan politics. President Salii is discussed, but not in much political context. If one listens to the Palauans one will hear them say that the Compact issue is an issue of unity. Remeliik failed in the first two Compact referenda because he was perceived as incompetent and could not unify Palau's political heavyweights. Salii had one good chance during the honeymoon of his administration when he had the support of most of Palau's political leaders. He lost three crucial percentage points (some 200 votes) in Palau's third referendum of February 1986 when an element in his own camp undermined his efforts about a week before the vote. A fourth referendum 10 months later (December 1986) gave Salii only 66 percent approval despite expensive and elaborate campaigning on the part of his supporters. In early 1987 Salii lost patience with the Palau

electorate, turned to the politics of threat and force during the ugly 3-month furlough period, but failed in two more referenda (June 1987 and August 1987). Roff claims the seventh referendum of February 1990 failed because the "Palauan people once again refused to override the nuclear-free clauses of their constitution" (p. 175). This is only partly true. Roff fails to note that Palau's nuclear-free group, *Kltal-Reng,* consists of a small core group of about 12 people who, with their relatives and friends, might total 200 voters. In reality the reasons for the seventh referendum failure were more complex than Roff states. The unity sentiment generated by the Etpison/ Nakamura administration had faded badly by referendum time; some voters were tired of the issue, others were suspicious of the convoluted approval of Compact improvements contained in US public law 101–219, and others, like Senate President Joshua Koshiba, believed the Compact was outdated and no longer a good arrangement for Palau.

Despite weakness in the defense of her thesis, Roff's examination of the Palau political status situation is useful although not easy reading. She notes that the internal cross-referencing of restrictive and exclusive clauses within the Compact and of the location of amendments to the document in subsidiary agreements make for a bad arrangement because the principle of unilateral termination has become seriously compromised. Further, this arrangement makes for a very complex political status document, which one Palauan opponent has termed hideous and others have criticized as written and understood only by lawyers.

Finally, Roff has eight appendixes containing hard-to-locate documents, and a very impressive bibliography of 306 items. These source materials will be helpful to all researchers interested in Micronesian affairs and, as Roff states, they are housed in the Columbia University Law Library's Special Collections.

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Research Notes and Comments

WOMEN'S USE OF BETEL NUT, ALCOHOL, AND TOBACCO ON GUAM

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This brief note reports an exploration of the social correlates for self-reported betel nut, alcohol, and tobacco use among a probability sample of Chamorro and Philippine women on Guam. Using ordinary least squares (OLS) regression techniques, the findings indicate that older Chamorro women and younger Philippine women are those most likely to consume betel nut, and that the traditional variables usually associated with alcohol and tobacco use are of little value in predicting betel nut consumption. Married respondents and those with higher levels of education were shown to be less likely to smoke or consume alcohol. Suggestions for future research are also noted.

The influence of social ties on health and sociomedical behaviors is well known and thoroughly documented (see Berkman & Syme, 1979; Blazer, 1982; Caplan, Van Harrison, Wellons, & French, 1980; Cobb, 1976; Gove, 1973; House, Landis, & Umberson, 1988; House, Robbins, & Metzner,

ISLA: A Journal of Micronesian Studies, 1:2. Dry Season, 1992, 413–23

1982; Levy, 1983). For example, Umberson (1987) has shown that the social integration provided by family and parenting contributes greatly to the reduction of health risk behaviors. More specifically, Umberson found that the presence of a child in the home significantly reduced an individual's inclination to consume alcohol or smoke marijuana, and that marriage itself greatly decreased the likelihood of participating in health-compromising activities.

Umberson's (1987) findings converge with the contention that heavy drinking is a response to anxiety, stress, and tension (see Horton, 1943; Mahoney, 1974).[1] From this perspective, health risk behaviors are explained by the degree to which individuals are exposed to stress-provoking situations such as divorce (Umberson, 1987) or migration (Dressler & Bernal, 1982).[2] Whereas Umberson's explanation stresses the social integrative effects of the family on health risk behaviors, the "anxiety" thesis focuses on the tension resulting from social disorganization and the consequent increase in substance use as a source of release.

Controlling for variables derived from both perspectives, this study reports the results of an exploratory analysis comparing alcohol, tobacco, and betel nut use among Chamorro and Philippine women on Guam. While the relationship of smoking and alcohol use to health and mortality are well known (Berkman & Breslow, 1983), the relationship of betel nut use to health is unclear. On one hand, the use of betel nut has been correlated with the occurrence of oral cancer (see Marshall, 1987, and the sources cited therein), but on the other, its use has been described as a relatively healthful and pleasurable activity (Ballendorf, 1968) that is unrelated to the development of oral carcinoma (see Haddock, Hoffman, & Williams, 1981). We elected to include betel nut in this study because (a) it has recently been shown that its use is increasing (Petrucelli, 1991); and (b) Marshall (1987) has noted that researchers have rarely paid specific attention to its use. The decision to limit our attention to women is based on preliminary reports suggesting that although females on Guam are less likely than males to drink (Pinhey, Workman, & Borja, 1992), their use of tobacco is not declining as rapidly as it is among males (see US Bureau of the Census, 1988). Because Asian and Pacific island women are significantly less likely to appear in national data sets, our purposes here are (a) to provide an estimate of some of the important variables related to their use of alcohol, tobacco, and betel nut; (b) to compare the characteristics of betel nut users with those who consume alcohol and tobacco; and (c) to provide future researchers using similar analysis techniques a starting point for the generation and testing

of more specific hypotheses. This paper therefore contributes to the literature on gender roles, substance use, and Micronesian studies.

SAMPLE AND METHODS

The data used for this analysis are taken from a Behavioral Risk Factor Survey (BRFS), which was conducted on Guam between mid-March and the end of May, 1991. The BRFS employed a random digit dialing technique to generate a probability sample for the population of Guam ($N = 402$).[3] After contacting a residence, one adult was randomly selected to be interviewed from among all the adults residing in the household. If the telephone number was found to be a nonworking number or a business number, or if the selected respondent could not be interviewed during the survey period, another telephone number was called. The resulting sample is representative of Guam's noninstitutionalized, civilian population who are 18 years of age and older. We note that the present analysis focuses only on Chamorro ($n = 101$) and Philippine women ($n = 74$) and not the entire sample. Consequently, we remind readers that because of the relatively small size of our subsamples (especially the Philippine subsample), the reported coefficients are subject to a degree of instability.

Dependent variables include respondent assessments of their monthly use of betel nut and alcohol and their daily use of tobacco. Because these variables are measured using a different metric (i.e., months and days), they have each been standardized, having a mean of zero and standard deviation of one. For each measure, high scores indicate high levels of substance use.

Because Umberson (1987) has recently shown that certain family characteristics (i.e., marriage and children in the home) have deterrent effects on health-compromising behaviors, we include in our analysis a measure of marital status, which is a dummy variable indicating whether a respondent was married (coded 1) or not married (coded 0) at the time of the interview. We also include a measure of family size (total number of household members over 18 years of age), and whether respondents currently had a child in school (coded 1) or did not have a child in school (coded 0). We expected these variables would have a dampening effect on substance use.

Because it has been argued that anxiety and stress contribute to health-compromising activities, we include a dummy variable controlling for migrant status (migrant = 1), which, as noted above, has been shown to be associated with higher stress levels. For this measure, respondents were asked where they had lived prior to residing on Guam. Those indicating places other than

Guam were considered migrants. And because we felt that individuals' current health statuses could influence their health risk behaviors, we also include in our analysis a measure of medical trauma. This variable began as a summated scale consisting of the sum of scores (i.e., positive responses) to four questions about whether respondents had suffered (a) a heart attack, (b) emphysema, (c) kidney failure, or (d) another limiting health condition. Possible responses for this measure ranged from 0 to 4 (alpha = .51). Final scores were converted into a dummy variable indicating whether or not respondents had been told by a physician that they had suffered from one of these problems prior to participating in the survey (problem = 1).

Our model also controls for age (actual years) and level of education, which was measured as follows: 8th grade or less = 1; some high school = 2; high school graduate = 3; some technical school = 4; some college = 5; technical school graduate = 6; college graduate = 7; post graduate = 8. Because smoking has been found to be more common among the working class, and alcohol use greater among those with higher incomes (US Bureau of the Census, 1988), we controlled for household income, which was measured as the logged midpoints (to account for skewness) for each of the following categories (midpoints in parentheses): less than $10,000 ($5,000); $10,000 to $14,999 ($12,499.50); $15,000 to $19,999 ($17,499.50); $20,000 to $24,999 ($22,499.50); $25,000 to $34,999 ($29,999.50); $35,000 to $50,000 ($42,500.00); above $50,000 ($55,000). Missing data for income (less than 1 percent) are coded to the mean. We measured employment status using three dummy variables indicating whether respondents worked for wages, were self-employed, or were not employed at the time of their interview. For our analysis the omitted category was "not working." Because rural residents have been shown to suffer less stress than urban residents do (Lowe & Armstrong, 1991), we also control for village size. Finally, respondents were asked to indicate their ethnicity and gender.

Ordinary least squares (OLS) regression was used to estimate six models within Chamorro and Philippine ethnic categories for females only. This statistical method allows us to control simultaneously for the effects of each of the independent variables described above (see Table 1 for descriptive statistics). For the regression portion of our analysis we report unstandardized regression coefficients, the standard error for each measure (in parentheses), and R^2 as an indication of goodness-of-fit (see Table 2). Probabilities for two-tailed t-tests are reported to assess the significance of the unstandardized regression coefficients. Although not shown here, we

Table 1 *Descriptive Statistics for Chamorro and Philippine Women*

Variables	Chamorro	Philippine
DEPENDENT:		
Betel nut (monthly)	13.38 (40.98)	.17 (1.39)
Alcohol (monthly)	1.84 (4.17)	1.05 (4.22)
Tobacco (daily)	5.92 (10.59)	.68 (3.36)
INDEPENDENT:		
Age	38.9 (16.9)	38.5 (14.5)
Education (median category)	High School Grad	Some College
Income (median)	$22,500.00	$17,500.00
Self-employed	.05 (0.2)	.08 (0.3)
Works for wages	.48 (0.5)	.50 (0.5)
Married	.52 (0.5)	.68 (0.5)
Household size	2.52 (1.5)	3.03 (1.8)
Child in school	.48 (0.5)	.29 (0.5)
Migrant status	.02 (0.1)	.09 (0.3)
Village size (median)	8,846	16,673
Medical trauma	.06 (0.2)	.04 (0.2)
N of cases	101 (58%)	74 (42%)

Note. Unless stated otherwise, reported statistics are mean scores. Standard deviations are in parentheses and statistics for the dependent variables and income are calculated on nontransformed measures. We remind readers that the mean for a dummy variable can also be interpreted as the percent of cases in nonzero categories.

also calculated zero-order correlations among all the independent variables described above. None were correlated above .4; we therefore concluded that multicollinearity is unlikely to be problematic in our multivariate model.

RESULTS

Although the descriptive statistics in Table 1 clearly indicate that Chamorro women are far more likely to smoke cigarettes and consume betel nut than Philippine women are, we are unable to discern from these data which variables are most strongly related to the use of these substances. As suggested above, we expect certain family characteristics to reduce to a sig-

Table 2 *Unstandardized OLS Regression Coefficients of Licit Drug Use Measures by Independent Variables for Chamorro[a] and Philippine[b] Women*

	Betel Nut		Alcohol		Tobacco	
Variables	Chamorro	Philippine	Chamorro	Philippine	Chamorro	Philippine
Age	.014*	−.0004+	−.005	.0006	−.006	1.313
	(.006)	(.0002)	(.003)	(.004)	(.006)	(.002)
Education	−.058	.001	−.036	−.061+	−.151*	−.037+
	(.058)	(.001)	(.037)	(.033)	(.063)	(.020)
Income (logged)	.286	−.017+	.302	−.245	.595	−.123
	(.337)	(.010)	(.213)	(.200)	(.364)	(.120)
Self-employed	−.171	−.024	−.118	−.180	.208	.001
	(.446)	(.015)	(.282)	(.300)	(.482)	(.184)
Works for wages	−.141	.001	−.037	.318+	.397+	.110
	(.216)	(.008)	(.130)	(.169)	(.233)	(.102)
Married	−.023	.006	−.116	−.352*	−.348	−.153+
	(.214)	(.007)	(.135)	(.152)	(.230)	(.091)
Household size	.038	.004+	.012	.024	−.111	.023
	(.065)	(.002)	(.041)	(.044)	(.070)	(.026)
Child in school	.001	.005	−.144	.148	−.160	.108
	(.208)	(.008)	(.131)	(.166)	(.225)	(.099)
Migrant	.122	.041***	−.285	.080	2.416**	−.032
	(.700)	(.011)	(.442)	(.229)	(.755)	(.137)
Village size	−.010	−.0007	−.018	−.029+	−.009	.007
	(.018)	(.0008)	(.011)	(.017)	(.019)	(.010)
Med. trauma	.061	−.007	.157	.314	−.906*	.025
	(.415)	(.018)	(.262)	(.350)	(.448)	(.210)
Constant	−1.3937	−.1494*	−.9079	1.3446	−1.2213	.0431
R^2	.107	.283	.111	.231	.229	.161

Note. Standard errors are in parentheses. [a]$n = 101$. [b]$n = 74$. +P<.10. *P<.05. **P<.01. ***P<.001.

nificant degree health-compromising behaviors, and we suspect that migrant status and other stress-related measures will be associated with higher levels of substance use. We turn to Table 2 and our multivariate analysis of the possible effects of these variables.

Older Chamorro women are significantly more likely to use betel nut than younger Chamorro women, which suggests that the former are closer to the traditional substances of their culture (see Table 2). Indeed, age is the only variable to have a significant relationship with the use of this substance for this subsample grouping. Philippine women who use this substance tend to be migrants and younger, to have lower incomes, and to reside in larger households. It is clear that they, too, are closer to the substances of Guam's traditional culture. However, because female migrants to Guam tend to be relatively young (Rubinstein & Levin, in press), the data suggest that the custom of using betel nut comes with this group from the Philippines to Guam. This interpretation does not lend support to the anxiety thesis discussed above.

In keeping with Umberson's (1987) findings, married Philippine women are significantly less likely to consume alcohol. Higher levels of education are also associated with lower alcohol consumption for this group. However, working class Philippine women who reside in larger villages are significantly less likely to drink than are their counterparts. Given that rural residence has been shown to be associated with reduced stress levels, this finding is the opposite of what we would expect, given the assumptions of the anxiety thesis. Interestingly, none of the variables used in our model are statistically related to the use of alcohol among Chamorro women.

Higher educational levels are significantly associated with lower levels of smoking among both Chamorro and Philippine women, suggesting the value of education in the reduction of health risk behaviors. And again, in keeping with Umberson's (1987) perspective, marriage is significantly associated with a reduced likelihood that Philippine women will use tobacco. Although being told by a doctor that they had suffered a medical trauma was significantly related to lower levels of tobacco use among the Chamorro women, migrant status was highly related to higher levels of tobacco consumption in this subsample.

CONCLUSIONS

The goal of this analysis has been to provide an estimate of important variables related to the use of alcohol, tobacco, and betel nut among Cha-

morro and Philippine women on Guam. We also wanted to compare the characteristics of betel nut users with the characteristics of women who used alcohol and tobacco. Drawing from the extant literature, we anticipated that certain family characteristics would be associated with reduced health-compromising behaviors and that stress-inducing situations would be associated with tobacco, alcohol, and betel nut use. In this regard, our results diverge from the findings described in the current literature. On one hand, the association of marriage and low levels of alcohol use and smoking among Philippine women lent support to the social integrative effects of family ties. But our parenting measure (having a young child in school) failed to be significantly associated with reductions in health-compromising behaviors in either ethnic group.

Our findings provide almost no support for the anxiety thesis. Although migrant status (a stress-inducing situation) was found to be related significantly to the use of betel nut among younger Philippine women, it was clear that this could not be attributed to anxiety brought on by a stressful move. Rather, we suspect that migrants from the Philippines simply bring the custom of chewing betel nut with them to Guam. We also found that Philippine women who live in smaller villages were significantly more likely to use alcohol than respondents living in larger villages. Again, this finding is the opposite of what would be expected from the anxiety thesis.

In support of the anxiety thesis, however, was our finding of a positive and significant relationship between migrant status and tobacco use among Chamorro women reporting that they had moved. Given the large numbers of Micronesians currently moving to Guam (see Rubinstein and Levin, in press), this relationship may deserve additional research attention. And finally, we note that medical trauma was found to be related significantly to reduced tobacco use among the Chamorro subsample. Because it can be argued that anxiety can be an outcome when physicians inform individuals that they have suffered a heart attack or a similarly serious medical condition, we argue that under some circumstances stress may be positively related to a reduction in health risk behaviors.

We also found that the socioeconomic variables usually associated with alcohol and tobacco use failed to operate for our sample in ways predicted from the literature. Moreover, socioeconomic measures were related in only a limited way to betel nut use. The data did show, however, that education was significantly and negatively associated with tobacco use among both Philippine women and Chamorro women, and also with the frequency of alcohol consumption by Philippine women.

It appears that the measures traditionally used to predict health risk behaviors were of only limited use when applied to our subsamples of Chamorro and Philippine women. Because adequate numbers of Asians and Pacific islanders are far less likely than other ethnic groups to appear in US national data sets (for example, see Davis & Smith, 1991), additional studies similar to the BRFS are clearly indicated. For these reasons we urge future researchers to examine more closely the relationships among family structure, stress, and health-compromising behaviors. We also urge that additional and more specific hypotheses describing the possible relationships among these variables be systematically tested on appropriate samples drawn from the population described here.

Acknowledgments

This project was funded by the Centers for Disease Control, Project Grant Number R48/CCR903111-03, and carried out in conjunction with the University of Hawai'i's School of Public Health and International Center for Health Promotion and Disease Prevention Research. The authors express their appreciation to Donna Lewis Pinhey, Paul Callaghan, and four anonymous referees for their insightful reactions to earlier versions of this paper. Our appreciation is also extended to Gary M. Heathcote for bringing various references to our attention, and to the University of Guam's Community Development Institute and Secondary Analysis Research Center for making the data available for this analysis. Some of the data reported here were included in a paper presented at the University of Guam's 13th Annual College of Arts and Sciences Research Conference, April 1992, Mangilao, Guam.

Notes

1. The sociological and anthropological literature almost universally assumes that heavy alcohol use is a response to stress, tension, and anxiety. For a general discussion of the relationship of stress and anxiety to alcohol consumption, we direct readers to Akers (1985, pp. 158–60) and to Marshall (1979, pp. 99–111) for a description of "anxiety theory," the latter of which includes reviews of studies conducted in Micronesia. Also see Lindstrom's (1987) recent overview of drug use in the Western Pacific, which includes discussions of tobacco use, alcohol, kava, and betel nut. And finally, see Marshall (1974; 1977) for early research bibliographies on alcohol and kava studies in Oceania.

2. There are also several articles that focus on the relationship between migration and mental well-being. For example, see Danna (1980), Morrison (1973), and Rendon (1974). See Gallagher (1987) for a general discussion of the sociology of mental well-being and the relationship between stress and migration.

3. For the Guam BRFS, the Centers for Disease Control in Atlanta, Georgia, devised a sampling frame stratified by the Island's telephone exchange. Lists of random telephone numbers were then

generated within each exchange. The resulting lists were used to contact respondents. We estimate that approximately 84 percent of Guam's residents have telephones.

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WOMEN-CENTERED RESEARCH AGENDA FOR MICRONESIA

Participants
1989 Women-Centered Research Methodology Workshop
University of Guam

Following the 1989 Women of the Pacific Conference at the University of Guam, 62 women, predominantly indigenous Micronesian women, worked in a credit-bearing research course to develop a women-centered research agenda for Micronesia. The agenda and topic priorities are presented in this note, as well as an interpretive description of topic clusters and detailed research needs or interests within each cluster. The note concludes with a description of related events in the period following the development of the research agenda and of some of the tasks that remain before the women of Micronesia will be empowered to research their own women-centered agenda.

Following the spring 1989 Women of the Pacific Conference at the University of Guam, 62 conference participants enrolled in a credit-bearing course on women-centered research methodology. Over 50 of these participants were indigenous Micronesian women. The course was offered in response to requests from conference organizers and participants who wanted Micronesian women to be empowered to chart the direction for future women-centered research in their own islands and to enable them to participate actively in that research. The purpose of this short research note is to share the visions and priorities for future women-centered research that this work group developed over an intense two-day period of discussion, writing, and review. This note should not be construed as a rigorous empirical study itself. It makes no claims to scientific sampling or generalizability. Rather, it should be regarded as a chronicle of the perceptions that this particular group had of the topics of importance to the domains of women and therefore, the most deserving of systematic research attention in their islands. As this was probably the largest and most diverse group of Micronesian women ever assembled for the specific purpose of discussing their own perceived research needs, their views bear consideration by anyone planning to conduct research on, about, or presumed to be relevant to Micronesian women.

At the beginning of the course, eight teams formed to identify, describe, and rank research needs. In some cases, the teams were ethnically mixed and in other cases they were composed of women from a single ethnicity, island, or political entity. Some of the ethnically mixed groups chose to work together because they shared interests in one or two themes. The groups identified themselves by colorful names, including the *Taotaomona* Group (the Commonwealth of the Northern Marianas—CNMI); The Seven Sisters (Saipan, Guam, Palau, Chuuk, and Kosrae); WIP'n, or Women Inspired *Para ta na Maolek!* (Women Inspired to Make Things Right!) (Guam); The Natural Sisters (Guam, Ulithi, Saipan, and Hawaii); The A-Team (Guam and Pohnpei); The Rock Island Sisters (Palau); *Takmo'na Palauan* (Women in the Forefront) (Guam, CNMI, and Palau); and The Fruit Salad Group (Guam, Palau, Yap, and Saipan).

At the outset, several women explained their perspective that Micronesian women have responsibilities for their entire community; therefore, a Micronesian women-centered research agenda should not be expected to speak solely of women and women's needs. Instead, the research agenda would have to embrace women's responsibilities as well as their

needs, and address both traditional as well as contemporary expectations and pressures. Their final research agenda reflects the roles of Micronesian women in their families as wives, mothers, aunts, sisters, and daughters; in their communities as managers, leaders, supporters, and advocates; in traditional roles dealing with agriculture, medicine, teaching, music and dance, resource allocation, and protection of the land; and in contemporary roles as members of the salaried work force, as professionals, and as politicians. In reviewing the research agenda that resulted, it is important to keep in mind that the teams developed it with the view that they or other Micronesian women would be the researchers, or would at least be major collaborators in research undertaken on the agenda.

RESEARCH AGENDA

A comprehensive list of the 10 highest priority research topics enumerated by each of the 8 agenda teams is presented in Table 1, allowing a view of the frequency with which a particular topic was indicated by different teams. A score of 1 indicates a topic was rated as the highest priority. In this list, a topic receiving a score of 10 is also important because these topics are all self-generated as topics deserving research. Unimportant topics were not listed at all.

A content analysis of the detailed research agenda notes developed by the teams yielded six overlapping topic clusters. The ideas within each cluster sometimes represent succinct research questions, data collection needs, specifications for needed documentation, and descriptions of resource information needed to inform the research enterprise. At other times, the notes reflect more diffuse queries needing further thought and refinement. The six topic clusters are (a) the home domain, (b) personal development of women, (c) women's health, (d) the roles that women play, (e) who are we and what do we want, and (f) women's roles as cultural leaders, and as community, political, and global forces.

The Home Domain

In this cluster of research agenda topics, team members emphasized (a) concerns regarding family well-being in general; (b) the incidence and causes of domestic violence (including spouse abuse, child physical abuse, and in-

Table 1 *Women-Centered Research Agenda with Priority Ratings*

Research Agenda Topic	Research Agenda Teams[a]							
	A	B	C	D	E	F	G	H
Education of women (general & specific topics)	1			2	4			1
Battered & abused women/wives	2			3		3		
Sexual harassment	3							
Maternity leave & child care for women working outside the home	4,5			10				
Marriage & family counseling	6							
Women's role in the workforce	7			8				6
Child abuse	8							
Women's skills development	9							7
Pacific women coping with leadership roles	10							4
Food & tradition		1					10	
Maternal teaching of language/culture		2			2			8
Chronic disease among women		3						
Women as traditional healers		4					3	2
Traditional song & dance		5	10					5
Women's organizations		6						
Older Micronesian women		7						
Men's reactions to women's assertiveness		8						
Literacy among women		9						
Developing political awareness in young girls		10						
Violent crimes against Pacific women			1					10
Effects of tourism on Guam			2					
Micronesian women's perceptions about tourism					3			
Micronesian women's "herstory"			3				1,6	
Access to comprehensive compilation of information on specific islands or entities						1		
Incest			4					
Effects of militarism on Guam			5		9			
Role of Micronesian women in self-determination			6		8			
Status of indigenous languages			7					
Effects of Americanization on indigenous people			8					

continued

Table 1 *continued*

Research Agenda Topic	Research Agenda Teams[a]							
	A	B	C	D	E	F	G	H
Effects of welfare & foodstamps on women			9	9				
Pacific women & politics				1	1	7	5	
Micronesian women's visibility				4				
Women's nutrition and health				5				
Restrictions on Micronesian women's public activity				6				
Teenage pregnancy				7				
Natural resources of Micronesia & the Pacific					5			
Drug & alcohol abuse					6			9
Attitudes about & effects of contraception among Micronesians				7				
Strategies for dealing with foreign powers					10			
Micronesian women's agriculture						2		
Current & traditional gender roles for Micronesian women						4,6	8	
Aspirations of contemporary Micronesian women						5		
Land ownership: documentation of traditions & current status							9	
Impact of rapid social change on Micronesian families							2	
Census of women in Micronesia							4	
Micronesian women & sexuality							7	
Micronesian women's family & child rearing attitudes & behaviors, past/present							8	3
Abortion in Micronesia							9	
Micronesian women's self-image							10	

Note. A score of 1 indicates the team gave a topic the highest priority. A topic rated 10 is also important because these are self-generated research topics, all deserving research attention. Unimportant topics were not listed. Some topics have two priorty ratings, indicating that the team listed two research ideas that are both subsumed under the general topic title.

[a]A = *Taotaomona* Group; B = The Seven Sisters; C = Women Inspired *Para ta na Maolek;* D = The Natural Sisters; E = The A Team; F = The Rock Island Sisters; G = *Takmo'na Palauan;* H = The Fruit Salad Group.

cest), and potentially effective interventions for preventing or ending it, and the obstacles to the implementation of interventions; (c) teenage suicide; (d) teenage pregnancy and approaches to preventing it and to providing an appropriate safety net when it occurs; (e) child care issues stemming from current societal changes; (f) the incidence of alcohol and drug use by women and the effects of these substances on family health; (g) family access to material resources and the effects of nontraditional governmental assistance in forms such as welfare payments, food stamps, and feeding programs; (g) women's treatment of other women, such as daughters or daughters-in-law; and (i) gender relationships of men and women in a changing societal environment.

Personal Development of Women

Research interests within this domain included the documentation and exploration of (a) both the content and process of women's education, (b) leadership and skill training opportunities, (c) the status of Micronesian women's literacy, (d) the development of young women's political awareness, and (e) the adequacy of the school systems in promoting the development of women's full potential as opposed to encouraging their "invisibility." Factors that contribute to Micronesian women's limited visibility and open expression were voiced by a number of participants and by several teams. Also of concern was how to ensure that women (especially tradition-oriented women) can participate in conferences or women's activities away from home. Other research needs in this area included documentation of the kinds and extent of discrimination that limits Micronesian women's professional development and their ability to obtain higher positions, and factors associated with adult education needs of Micronesian women, such as for courses in the English language.

Women's Health

Research questions and needs in this cluster included (a) issues associated with reproductive health, childbearing, and artificial contraception; (b) the nature of Micronesian women's health and nutrition needs and the roles they play in the health and nutrition of their children and extended families;

(c) the incidence and nature of various chronic diseases among Micronesian women; (d) the traditional healing approaches to various conditions; and (e) Micronesian women's attitudes toward contemporary or Westernized health care options (e.g., periodic gynecological examinations).

The Roles That Women Play

Within the extensive attention given to this research area, teams indicated the need to document the multiple roles that women of the various Micronesian cultures play, describing distinctions between women's work and men's work. More specifically, they advocated researching and carefully preserving the details of (a) Chamorro women's work as *suruhana* and of other Micronesian women who are traditional medical practitioners and healers; (b) the lives and work of women in political office; (c) the work of women who are composers of chant and song and the cultural meanings of these; and (d) the lives of influential Micronesian women, including those who stay behind the scenes and exercise their influence through the men in their lives (e.g., the *Maga Haga* behind the *Maga Lahi* in Chamorro culture). Need for research attention was also directed to the social impact on families of women entering the salaried labor force, and to the collateral issues of maternity leave, child care, and the challenges brought to family relations when women have a regular paycheck. The need to document the lives and roles of bereaved, widowed, and divorced women in Micronesia was specified as well.

A major subtopic of this cluster of research questions is that of women and food. Of research interest are the following: (a) women's work in gardens, taro patches, and on farms; (b) the cultural relevance of this work, as well as the effects on family and community health and nutrition; (c) social changes that have an impact on this domain of women's work, including global ecological threats such as rising sea levels and the greenhouse effect; and (d) the effects of Westernized diets on the health of women and their families. The teams recommended documentation of (a) Micronesian food traditions, (b) women's roles in these, (c) women's roles in food distribution, and (d) the significance of these roles in the different Micronesian cultures.

Who Are We and What Do We Want

Closely associated with research needs on the roles of Micronesian women were intensely felt needs to begin the filming, recording, and preservation of existing records of Micronesian women's lives. This should include older women and traditional ways, as well as documentation of women living in the current period of rapid social change, developing new strategies for living and adjusting to change. Establishing records of women's traditional art and work forms were cited as high priorities for research and documentation. One team expressed the importance of beginning with a census of Micronesian women that would document age, marital status, household composition, skills, level of education, professions, numbers of dependents, income, and assets. Also of concern to this team was the perception that some Western census questions and research methodologies trivialize or make invisible the authentic authority that Micronesian women have within an extended household (e.g., conducting the census survey with a male, and asking questions that are inappropriate to a complex extended Micronesian family, such as "Who is the head of this household?").

Women's Roles as Cultural Leaders and Community, Political, and Global Forces

Research needs were identified for documenting and exploring women's village and island organizations, the organizational and structural elements of these, as well as their perceived strengths and weaknesses. Also of research interest is women's increasing interest in the promulgation of laws and rule making that regulate conditions they see as relevant to their responsibilities (e.g., domestic violence, alcohol and drug abuse, working conditions affecting women's new roles in the salaried work force, rape and other forms of violence against women). Special importance was placed by several teams on documenting women's contributions to the continuity of language and culture during the early childhood years. Other groups emphasized the need to research the roles women have to play and their educational and information needs so that they can play effective roles relative to rapid economic development and social change—including tourism, militarism, exploitation of land and marine resources, political self-determination, foreign policy, and tactical approaches to negotiations with foreign powers. These interests extended to the needs of indigenous women re-

searchers for access to comprehensive collections of information on political and cultural history, history of land ownership, and for current and historical economic data on their own Micronesian islands or political entities. Encompassed within this cluster of topics was also a need to explore empirically a range of questions about Micronesian women and change: What kinds of change do we expect and are we preparing for? How much are we willing to change? What kinds of services, conditions, and assistance do we need to accomplish the desired change?

CONCLUSION

A fitting conclusion to this research note might be a description of the research that has been undertaken on the proposed women-centered research agenda since it was developed. Shortly after the course was concluded, one of the instructors (Souder) led a group of Palauan women in an environmental impact survey on Palau that addressed some of the issues touched upon in the cluster concerning women's roles as a community force. The following year, one of the other instructors (Spencer) developed *Psychology of Women* as a regular course offering in the psychology program at the University of Guam. It is a course that requires an original research project. Currently this is the only women studies course offered at the University.

Little else can be reported now in the way of concrete research products or mechanisms resulting from the course or the women-centered research agenda. More evident, on one hand, is effort by women in Micronesia to build their *capacity* to conduct women-centered research; on the other hand, also evident is a discouraging scarcity of the resources to engage adequately and expediently in such capacity building. Within a year of the course in which this research agenda was produced, two of the instructors and several course participants left the region temporarily to obtain graduate or postgraduate school training, which will better enable them to conduct research in Micronesia. Remaining as important tasks in the capacity-building process, which will empower women of Micronesia to research their own agenda, are needs for (a) additional workshops and courses on research methods that are conducted in local settings in the various political entities of Micronesia, (b) mechanisms for providing emergent women researchers access to documentation and library holdings needed for their review of the literature as they design and conduct their research projects, and (c) ongoing networking

and support group structures throughout their involvement with a research activity.

Note

1. Instructors for this course were Vivian Dames, Laura Souder, and Mary Spencer. A typed manuscript of the handwritten research agenda documents of each team is available from the third instructor upon request. To present the agenda and priorities as topic clusters, an interpretive process was required. If the discussion here of topic clusters misrepresents the intent of the team members, the third instructor accepts responsibility for such errors and apologizes.

CONCERNS AND GUIDELINES FOR OUTSIDER RESEARCH IN MICRONESIA[1]

Participants
1989 Women-Centered Research Methodology Workshop
University of Guam

This set of guidelines was developed during a workshop on women-centered research methodology that was attended by over 50 women of the indigenous cultures of Micronesia. The participants envisioned themselves—as insiders—conducting research in the future on a wide-ranging research agenda. In preparing for their own research activities, they reviewed their previous experiences with outside researchers. They articulated these guidelines as a means of improving both the quality of research conducted in Micronesia and the ways their respective communities experience the research enterprise. These indigenous researchers generally recognized that the fulfillment of their own research agendas would benefit in some instances from collaboration or, possibly, reciprocal mentor relationships with outside researchers. Thus, the guidelines that follow, although they

appear restrictive on the surface, actually chart a course for the outside researcher and are intended to foster a successful research process and valid research results. The guidelines are offered from the perspectives of these particular women as *local Micronesian women* and from their belief that similar perspectives are held by other local women of their acquaintance on their islands.

GUIDELINES

1. Local women who assist outside researchers should receive some kind of credit for having done so.

2. If someone is going to talk about the women of the Micronesian region, it should be Micronesian women, and it should be recognized that there are important differences between and among the cultures of Micronesia.

3. Careful consideration should be given to the following two questions: (a) For what purpose is the research being done? (b) Who is going to read the results of this research? Answers to these questions should be supplied to local women before any proposed research is initiated by outsiders. Local women will need advance information so that they can deliberate the appropriateness of the proposed research and the extent to which it should be permitted.

4. The researcher should provide a list of research questions to local women (if any of them are expected to be involved or affected by the research) so that they may discuss these questions among themselves in the context of their own community. This recognizes the fact that, in most of the cultures of Micronesia, no single individual has the right to authorize outsider research.

5. Local women need to be able to consider whether or not the researcher may violate cultural values and norms. Outside researchers should be fully aware of the taboos of each culture and understand that respect of these is essential to their opportunity to do research in that culture. Local women feel that outsiders intending to do research in their communities should become well informed about the culture and the community before they arrive. At a minimum, they should explain in their research proposal how they intend to develop their understanding of the local culture, language, and community.

6. Some knowledge is private by cultural definition, and researchers are expected to be aware of this and to respect it. This is especially true of such things as family histories and certain village stories.

7. Arrangements should be made for the collaboration of local people in the proposed research. The credibility of research results will be suspect if the research is conducted entirely by an outsider.

8. Local women want to have the right to review research reports prepared by outsiders prior to the submission of these reports by researchers to outside agencies or for publication. They are also concerned about what they can do about the use of information that has been provided falsely or incorrectly. They would like a forum for reviewing and responding to such information.

9. Local women would like to prevent unsolicited researchers from just "showing up" in their communities and expecting everyone to cooperate with their research.

10. Local women would like to discourage the attitude of some outside researchers that the latter have a great unasked-for benefit to bestow on the community. For example, the outside researcher who comes into the community and asks "Do you meet the requirements for the (unsolicited) research I am planning to do here?" should be encouraged to adopt a more enlightened attitude and possibly be discouraged from doing research in that community.

11. Local women would like a centralized clearinghouse to be developed for the purpose of registering all women-centered research being planned or conducted in the region, with the additional responsibility of disseminating and applying the policies for outsider research presented here.

12. Local women of Micronesia emphasize the following guideline for outside researchers: "You must earn the right to learn."

Note

1. Instructors for this course were Vivian Dames, Laura Souder, and Mary Spencer.

PROMOTING LITERACY IN MICRONESIA

Jennifer Blackman Rush
Yigo, Guam

The first attempt of the US Department of Education to promote literacy in the indigenous languages of Micronesia came shortly after the formation of the Government of Trust Territories of the Pacific Islands. Under the gifted leadership of Dr. Robert E. Gibson, a policy of teaching the first three grades in the local languages was instituted. However, this policy proved difficult to implement because of the unavailability of both materials and first language teachers.

Decades of struggle ensued between policy makers who wished to ban the indigenous languages from the classrooms and those who believed that the maintenance and development of the Micronesian languages was an important responsibility. These years saw a decline in the use of and respect for the indigenous languages.

In recent years many have awakened to the great loss that has taken place, and language policies and related measures have been introduced in different areas of Micronesia to promote literacy in the indigenous languages. The main thrust has been to promote first language literacy within the public school systems and to encourage the use of these languages within government offices.

How effective have these means been in reaching the general public? Count the number of publications written in the indigenous languages of the five political entities of Micronesia—the Territory Guam, the Republic of the Marshall Islands, the Commonwealth of the Northern Mariana Islands, the Trust Territory of Palau, and the Federated States of Micronesia. *The Arongorong,* the *Marshall Islands Recorder,* and very recently, a Kosraean language newsletter are the only regularly published first language print news materials in Micronesia. Added to these are sporadically published government agency bulletins or newsletters of a bilingual nature, but these are rare.

One of these publications *The Arongorong,* is a monthly newsletter published on Guam by Jesus M. Elameto for the purpose of promoting literacy in Micronesia in both the first languages and English. Initially estab-

lished by Elameto in 1977 as a Carolinian language newsletter to promote literacy within the Carolinian community on Saipan, *The Arongorong* has grown to include English and all Micronesian languages.

It was while Elameto was working throughout Micronesia with the Bilingual Education Assistance in Micronesia Project of the University of Guam that he saw that the need for bilingual literacy did not apply solely to his people. As a result he expanded the scope of *The Arongorong* in an effort to encourage and assist all speakers of Micronesian languages to be literate in both English and their own languages without relying on pidgin versions of either.

Although *The Arongorong* now represents all Micronesian cultures, the original Carolinian name has been retained for its appropriateness and out of respect for the wishes of its founder. Elameto felt it was important that the newsletter retain a Micronesian name, and *arongorong,* a Carolinian term meaning "to give forth the news, to broadcast," is a mutually intelligible word throughout the Caroline Islands of Micronesia.

The Arongorong provides a forum for the publication of Micronesian news and viewpoints. Currently, only English, Carolinian, and Chamorro articles are published monthly. The long-range goal is to have every Micronesian language represented on a regular basis. Recent coverage in English has included an essay on Guam's quest for commonwealth status, a reporting on recent educational symposiums held on Guam, and a review of Francis X. Hezel's work on suicide prevention in Micronesia. A new addition to the English language content has been the column, "Writing from the Heart," by veteran writer JoAnn Zarling. Zarling, a published writer with 30 years of experience and a writing teacher, writes a monthly column that aims specifically to encourage and train writers and prospective writers. Recent Carolinian articles have covered such topics as Carolinian and Chamorro music composers, the value changes that have taken place in the Carolinian culture under the US administration, and a report on the progress of the new Carolinian dictionary recently published by the Public School System of the Commonwealth of the Northern Mariana Islands. We are indebted to the Chamorro Language Commission for permission to reprint articles in Chamorro from their newsletter, *Igaseta.*

Contributions written in English or any Micronesian language are welcomed, especially articles about cultural preservation and events having an impact on Micronesia. An evaluation of the benefits of eco-tourism or a comparison of free association and commonwealth are topics that would also

interest readers of *The Arongorong.* Material on subjects of special interest to the individual cultures within the region are also invited.

In 1992 *The Arongorong* was underwritten in part by a grant from the Guam Humanities Council in cooperation with the National Endowment for the Humanities. Subscriptions have been complimentary during the grant period, and, if sufficient funds are raised, the complimentary subscriptions will continue through 1993. Back issues are available through November of 1990 for $1.00 each.

For article submissions, subscriptions, back issues, and all other communications, write to: Jennifer Rush, Editor, *The Arongorong,* P.O. Box 389 PBC, 970 So. Marine Drive, Tamuning, Guam 96931.

CULTURAL RESOURCE MANAGEMENT IN THE REPUBLIC OF THE MARSHALL ISLANDS 1990–1991

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Historic Preservation as a formal concept was introduced to Micronesia in 1975 following the 1974 amendment to the US National Historic Preservation Act of 1966. Initially, there was a Historic Preservation Office (HPO) located on Saipan, the administrative center of the Trust Territory of the Pacific Islands, and local offices called Historic Preservation Committees were established in all the districts. After the Compact of Free Association between the United States and the Republic of the Marshall Islands (RMI) was implemented in 1986, the administration of cultural heritage for the RMI came to rest with the RMI Historic Preservation Office.

Cultural resource management in the RMI was in the hands of the Alele Museum, (Library and National Archives), until 1991 when a structural rearrangement of the organization, mandated by legislation (see below), separated the HPO from the Museum. The newly formed Historic Preservation Office is directed to formulate historic preservation management

policies, draft national and local historic preservation plans, coordinate the nationwide historic preservation program, and enforce historic preservation legislation to ensure the well being of archaeological, historical, and traditional sites. The Alele Museum is the executive arm of the HPO in all other aspects of historic resources management and will act as the main repository for information and artifacts.

The HPO is supervised by the Advisory Council of Historic Preservation, which sets policies and initiates regulations. The Advisory Council also supervises compliance activities and decides on HPO compliance decisions when they have been challenged by applicants. The Advisory Council for Historic Preservation consists of seven regular voting members; they may seek assistance from technical or other advisers or government agencies as necessary to assist in the performance of the functions of the Council.

In the upcoming 5-year plan period, Atoll Resource Protection Officers (ARPOs) will be designated to act as liaison between the national HPO and the certified local government Councils. Technical expertise, such as trained archaeological personnel, will be sent out from the national HPO as required, and the ARPOs will coordinate historic preservation activities in the atolls.

TYPES OF ARCHAEOLOGICAL AND HISTORICAL RESOURCES

Archaeological resources in the Marshall Islands comprise the following categories. The common prehistoric sites are coral gravel spreads (gravel scatters around households), shell middens and other kitchen middens, fish traps, gardening features, burials and cemeteries, and coral-faced platforms. The common historic sites are burials and cemeteries, coral gravel spreads, coral-lined paths, coral-faced platforms, fish traps, gardening features, and middens. There are also many World War II sites, including airfields, bunkers, generator buildings, and other military installations. Artifacts from that period include ammunition, coastal defense and antiaircraft guns still in their emplacements, and wrecks of trucks, tanks, and aircraft.

Submerged resources are mainly shipwrecks, but there are also aircraft, vehicles, moorings, artifacts, and submerged sections of otherwise surface sites such as stretches of Marston matting for seaplane ramps. The majority of the sites date to World War II but, based on archival data, prewar resources also are thought to be present.

REGISTER OF SITES

The RMI Historic Preservation Office has started a Register of Archaeological and Historical Sites in the Republic of the Marshall Islands. It will include all archaeological, historical, and traditional sites that fulfill one or more of the following conditions: possession of architectural excellence or representativeness, historical ambience, archival archaeological value, research archaeological value, or cultural, interpretive, aesthetic, social, social historical, or particularistic historical value. Each of these conditions has been defined by a set of criteria.

All archaeological and historical sites are ranked at one of four significance levels according to their individual preservation and overall occurrence on the atoll and the Marshall Islands as a whole. A significance level of "significant" or "very significant" affords a site a high level of protection from destruction. Traditional sites are not ranked at all; they are assumed to be significant or very significant.

TRADITIONAL SKILLS AND ORAL HISTORY

Traditional skills in the Marshall Islands are gradually disappearing. Some skills such as traditional tattooing are extinct, while others such as traditional navigation or weather forecasting are nearly so. Still others, such as traditional canoe-building skills, have diminished; although many canoes are still being built, only a few boat builders have mastered the skills of traditional proportional measurements and canoe designs.

The Alele Museum has been involved in a documentation program of the traditional canoes (*Waan Aelōñ-Kein*/Canoes of our Islands) conducted by a professional wooden boat builder, Dennis Alessio. The plan is to build a complete canoe if possible, but an alternative is to build a scale model. The goal is to document through text, photographs, and audio and visual recordings all construction details, including hull design and lashings, and the associated stories and explanations.

Canoe-recording projects have been carried out on Namorik, Likiep, and Ailuk (Aelok) atolls, and one canoe, a Jaluit model, was built and recorded on Majuro (Mājro) Atoll. The project is expected to continue for another 2 or 3 years, by which time the focus will shift toward vocational training of young people.

Traditional food production techniques have been recorded by the Alele Museum using video clips designed as educational programs for broadcasting on the local educational television station. The Museum has completed documentaries on the production of breadfruit and arrowroot, formerly a staple crop in the northern Marshalls.

To help stem the continuous decline of traditional skills, the Historic Preservation Act of 1991 calls for the establishment of the title *Dri Kabeel* 'living national treasure' as an official recognition of persons possessing traditional knowledge and skills. The title will be bestowed by the president of the Republic in person upon those Marshallese men and women who are recognized as unsurpassed masters in their fields. The selection process will ensure that the number of male and female Dri Kabeel is approximately the same. The selection of candidates will take into account their knowledge in the skills to be honored, the applicability of such skills in modern society, and most important, their willingness to train young apprentices.

PREDICTIVE MODELING

The staff of the Historic Preservation Office has carried out two predictive modeling projects. One was a settlement model focused on the location of prehistoric and historic settlements on hitherto unsurveyed islands, and the other was undertaken to forecast the impact that population growth on Majuro Atoll will have on cultural resources. The settlement model was developed using data collected on Majuro Atoll and data reported in the literature. It was field tested on reconnaissance surveys. The model takes into account wind and current patterns, the geomorphology of the atoll, the geomorphology of the individual islet, the soil patterns, ground water availability, vegetation zonation, and the suitability of the land for gardening and food production. Based on the model a decision-making chart has been developed for later computerization.

Detailed projections of the increase in number of households and burials, and the space required to accommodate them, have been calculated using Majuro Atoll as an example. From the historic preservation point of view, the figures are quite frightening. If the number of persons per household remains stable at 8.8, then by the year 2000 there will be 1,257 new households on Majuro, which will take up over 55 hectares of additional land. A more conservative prediction using a household size of 9.5 persons yields a land requirement of 51 hectares by the year 2000 and 125 hectares

by the year 2010. The total area required for burials would be 8,755m² by the year 2010. Unless radically different methods of disposing of human remains are contemplated, such as cremation or burial at sea, it is likely that some archaeological sites will be damaged or destroyed.

The predictive model of the impact of population increase has major implications for the planning of historic preservation activities on Majuro Atoll. It can be foreseen that housing needs will become pressing and that very little time and effort will be spent on historic preservation issues. It is clear that the Historic Preservation Office, in conjunction with the Majuro local government, must develop housing regulations, permitting procedures, and regional zoning, as provided for in the Marshall Islands Revised Code of 1989. Regulations, procedures, and zoning criteria should be well established before population pressure necessitates new housing. On the whole, the implications of population increase on Majuro apply to outer islands too, especially to those atolls that are designated for development and that are likely to experience an intensified population increase because of internal migration.

UTILIZATION OF DATA

The Historic Preservation Office has been providing information to interested parties involved in the economic development of the Republic. Tour guide leaflets, with text and drawings, are available for visitors to the historic World War II sites on Tōrwa Island, Maloelap Atoll, and Mile Island, Mile Atoll. Leaflets for Wotje (Wōjjā) and Likiep atolls are in preparation.

Submerged historic resources, such as the wreckage of ships and aircraft, can provide growth data for several coral species because the submersion dates are known. Coral growth rates on these submerged resources may also provide useful information in assessing whether corals can keep up with the anticipated rise in relative sea level caused by global warming.

LEGISLATIVE EFFORTS

The Compact of Free Association provides that former Trust Territory laws be in effect until replaced. Thus, compliance with the US Historic Preservation Act of 1966 (as amended) is ensured, but legal opinions vary con-

cerning its enforceability on US federal agencies that undertake large-scale construction projects.

In 1989 the RMI Environmental Protection Authority passed a set of regulations concerning earth-moving activities that requires commercial developers to file an application with the HPO in advance of development and to implement mitigation procedures if necessary. In 1990 the *Nitijeļā* (Parliament) adopted A Resolution to Provide for the Preservation of the Cultural and Historic Heritage of the Republic of the Marshall Islands. During the 1991 fiscal year the Nitijeļā passed An Act to Promote the Preservation of the Historic and Cultural Heritage of the Republic of the Marshall Islands. Five regulations designed to implement the Historic Preservation Act of 1991 were adopted by the Cabinet in January 1992.[1]

PROJECTS UNDERTAKEN

The Cultural Resource Management Program of the RMI is largely reactive, owing to a shortage of staffing and funding, and the majority of the HPO activities have focused on Majuro Atoll. The geographical realities of the Marshall Islands—atolls separated by vast distances, with most of the islands within the atolls accessible only by boat—create substantial logistical problems. Interatoll transportation is mainly by domestic air services, provided by AIRMarshall Islands, and intra-atoll transportation relies on boats and, more importantly, on gasoline, the availability of which is unpredictable. These problems are compounded by the cost of field trips, which are few due to budgetary limitations.

The field of proactive archaeology encompasses research excavations, surveys in advance of development, and other activities. While the number of research excavations has been limited, several reconnaissance surveys have been carried out in conjunction with the Independent Nationwide Radiological Survey on Erikup, Wotje, Arṇo, Aur, Maļoeļap, Mile, and Ṇadikdik. Special emphasis was placed on the assessment of the overall vegetation patterns and the geomorphology situation because both factors have been shown to be important to understanding the prehistoric and early historic settlement patterns in the Marshall Islands.

Reactive archaeology in the Marshall Islands comprises mainly assessments of applications for construction permits—assessments either for earth-moving permits from the Environmental Protection Authority (EPA) or of draft environmental impact statements such as for the development planned

at the US Army Kwajalein Atoll missile range. The number of EPA earth-moving permits has been increasing gradually, and the amount of contractor/developer compliance work is expected to rise sharply soon. The number of earth-moving and construction assessments to be conducted by the HPO staff will increase dramatically with the new regulations now in force.

OUTREACH ACTIVITIES

Outreach activities are an important part of historic preservation. If the sites and traditions are to be protected for generations to come, then the present generation needs to be aware of them. Because a large percentage of the population is under 18 years of age, the HPO staff has made several presentations to the senior class of the Marshall Islands High School. One history lecture on World War II in the Marshall Islands was given at a historic site, the Japanese seaplane base at Djarrit (Jarōj) Islet, Majuro Atoll, and others have been given at the Alele Museum. The HPO staff was also involved in the 1992 Peace Corps In-Country Training Program for new volunteers. Two lectures were presented to the trainees on the historical foundations of the Marshall Islands and on traditional settlement, food production, and burial patterns. The HPO Chief Archaeologist has given lectures at the College of the Marshall Islands on the settlement patterns of prehistoric and early historic Marshall Islanders and on burial customs of commoners and chiefs through time.

The Historic Preservation Office often provides the local newspaper, the *Marshall Islands Journal,* with historic photographs and photographs of traditional artifacts, including extensive captions, to use as fillers. Also, on behalf of the Alele Museum the newspaper runs a weekly series of selected Marshallese *(Kajin Ṃajeļ)* words that are less commonly used now and that have no meaning to the younger generation.

The Alele Museum operates Majuro Educational TV (METV), which produces educational videos and retells oral traditions. Although the TV antenna reaches only part of Majuro Atoll, it does reach about 50 percent of the population of the Republic. METV (the only operational TV station in Majuro), in collaboration with the oral historian of the Alele Museum, collects a wide range of oral traditions and records them on video tape.

Archaeological sites in the RMI are under threat from development of various kinds. To alert the general public to the existence and nature of archaeological sites, a training video was completed by the HPO. This video,

Archaeology in the Marshall Islands, What is it all About?, has been produced in Marshallese; an English language version and a 4-minute public service announcement are in production.

CHALLENGES AHEAD

The increase in population will bring about substantial pressures on the physical environment, thereby threatening many archaeological, historical, and traditional sites. Inventories of such sites are needed to expedite systematic decision making in the event of construction. The legal basis has been laid in the Historic Preservation Act of 1991 and in regulations recently adopted by the cabinet.

The increasing Westernization of Marshallese culture, brought about by videos and Marshallese returning from overseas, among other influences, is likely to undermine the remaining traditional culture. Both systematic recording of the extant information and systematic but selective fostering of traditional skills and practices are needed. To this end, the HPO has surveyed opinions of the local governments and is drafting a comprehensive historic preservation development plan, "Target '96," for the next 5-year plan period. The HPO is committed to ensuring that cultural resources and modern development can tolerate one another, if not live together, for the benefit of the people of the Republic of the Marshall Islands.

Note

1. The regulations adopted in 1992 govern (a) access to prehistoric and historic submerged resources, (b) land modification activities, (c) the disposition of archaeologically recovered human remains, (d) the taking and export of artifacts, and (e) the conduct of archaeological and anthropological research in the Republic.

Revue française d'anthropologie

L'HOMME

avril-décembre 1992 N° 122-124

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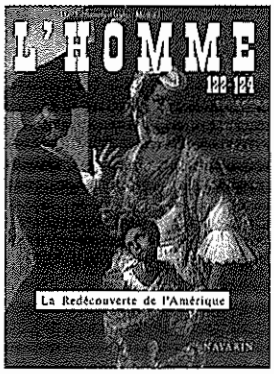

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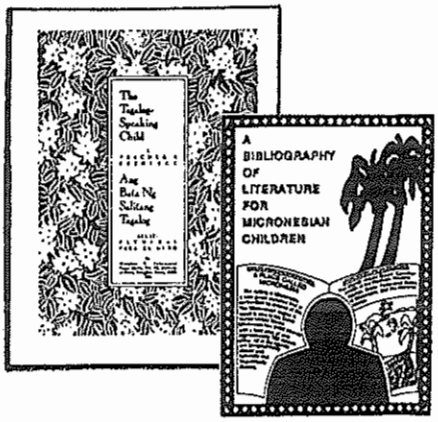

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ISSN 1054-9390