PACIFIC STUDIES

A multidisciplinary journal devoted to the study of the peoples of the Pacific Islands

SEPTEMBER 1995

Anthropology
Archaeology
Art History
Economics
Ethnomusicology
Folklore
Geography
History
Sociolinguistics
Political Science
Sociology

PUBLISHED BY

THE INSTITUTE FOR POLYNESIAN STUDIES
BRIGHAM YOUNG UNIVERSITY-HAWAI'I

IN ASSOCIATION WITH THE POLYNESIAN CULTURAL CENTER

Articles and reviews in *Pacific Studies* are abstracted or indexed in *Sociological Abstracts, Linguistics and Language Behavior Abstracts, America: Histoy and Life, Historical Abstracts, Abstracts in Anthropology, Anthropological Literature, PAIS Bulletin, International Political Science Abstracts International Bibliography of Periodical Literature, International Bibliography of Book Reviews,* and *International Bibliography of the Social Sciences.*

PACIFIC STUDIES

Editorial Policy: *Pacific Studies* is published quarterly by The Institute for Polynesian Studies, Brigham Young University-Hawai'i, Lā'ie, Hawai'i 96762-1294, but responsibility for opinions expressed in the articles rests with the authors alone.

Subscription rate is U.S. $30.00, payable to The Institute for Polynesian Studies. Articles submitted to the editor must not be submitted elsewhere while under review by *Pacific Studies* and should be the original typewritten copy, completely double-spaced (including quotations, references, and notes). Authors may write to the editor for a style sheet and information on computer-disk submissions. Books for review should also be sent to the editor.

The Institute for Polynesian Studies is an organization funded by Brigham Young University-Hawai'i. The Institute assists the University n meeting its cultural and educational goals by undertaking a program of teaching, research, and publication. The Institute cooperates with other scholarly and research institutions in achieving their objectives, It publishes monographs, produces films, underwrites research, and sponsors conferences on the Pacific Islands. Further information on the activities of the Institute may be obtained by writing to the editor.

This publication is printed on acid-free paper and meets the guidelines for permanence and durability of the Council on Library Resources.

ISSN 0275-3596

Volume 18 September 1995 Number 3

CONTENTS

Articles

Book Review Forum

Reviews

Books Noted

PACIFIC STUDIES

Vol. 18, No. 3 September 1995

PEARL FARMING IN THE TUAMOTUS: ATOLL DEVELOPMENT AND ITS CONSEQUENCES

Moshe Rapaport
University of Hawai'i at Manoa

The black-lipped pearl oyster *(Pinctada margaritifera),* naturally abundant in the remote atolls of the Tuamotu Archipelago, became almost extinct following a century of overexploitation. Surviving stocks now provide the basis for an innovative pearl-farming industry, attracting investors and return migrants from Tahiti. There are now concerns that intense exploitation will result in deelining profitability and perturbation of lagoon ecosystems. Disputes are also increasing over the relative rights of local communities, external entrepreneurs, and the Tahitian administration. As pearl farming is one of the few viable development opportunities on Pacific atolls, the potentially problematic consequences need to be carefully addressed by governments and development agencies.

THE BOOMING GROWTH of the black-pearl-farming industry seems out of place in the sun-drenched, windblown, and storm-prone atolls of the Tuamotu Archipelago, French Polynesia. Work sheds and platforms line lagoon shores, while lagoon interiors brim with millions of cultivated oysters suspended by miles of rope, buoys, and inflated plastic drums. Cargo boats are constantly working their way through narrow reef passes unloading construction materials, aluminum boats, outboard engines, scuba equipment, and other supplies. Small airplanes arrive weekly on formerly remote atolls, serving the needs of visitors, investors, returning migrants, and well-to-do pearl farmers.

Cultured production of the black pearl, high-priced on the international market, was pioneered in the Tuamotus based in part on techniques previously developed in Japan and Australia for white pearls.[1] Over the past few decades, pearl farming has become a highly successful industry, and it is currently a vital element in French Polynesia's drive for self-reliance. Following

the French initiative black-pearl-farming ventures have also been launched in the Cook Islands, and trials are under way in other Pacific islands. The potential importance of this industry was recently underscored by an international conference on pearls held in Honolulu, attracting some five hundred participants from around the world (Fassler 1994:325-354).

This newly emerging industry is particularly worthy of academic scrutiny because it is one of the few successful development efforts on coral atolls (see Connell 1986:41-58). Raised only a few feet above sea level, with virtually no soil and limited groundwater supplies, and highly vulnerable to hurricanes and tsunamis, atoll communities rely largely on copra, external aid, and (to a variable extent) subsistence gardening and fisheries. Pearl farming provides a remarkable example of transition between a rudimentary gathering industry (mother-of-pearl diving) and a highly sophisticated aquacultural technology. This article, based on written sources and personal fieldwork, describes how, when, and through whom the transition was accomplished.

This article also documents the unanticipated cascade of socioeconomic, political, and ecological changes that followed the introduction of pearl farming. The new industry has served as an economic magnet, attracting a rapid influx of migrants from Tahiti. Dense farming of pearl oysters has raised concerns about oversupply and has been related to epidemic mortality in mollusc populations. Competition over pearl farming has also resulted in a struggle among native islanders, alien entrepreneurs, and the Tahitian administration over the control and allocation of lagoon space.

Biology and Ecology in Brief

Aspects of the biology and ecology of the black-lipped pearl oyster *(Pinctada margaritifera)* have been discussed in several reviews (Ranson 1962:43-69; Intes 1982:36-38). The species is found throughout the Pacific Islands, as well as in the Indian Ocean, the Persian Gulf, and the Red Sea. The oyster generally reaches a diameter of fifteen centimeters and is easily recognized through the iridescent nacre ("mother-of-pearl") that layers the shell internally. When stimulated by a foreign body (such as a parasite), the intrusion is sealed off, creating a pearl. Perfectly rounded natural pearls are highly valued, but they are generally extremely rare.

The pearl oyster becomes sexually mature at about the age of two years, often followed by a sex reversal from male to female. Millions of eggs are released by a single oyster, but there is extremely high mortality owing to vagaries of current flow and predation. Eggs that survive and become fertilized float with the plankton. When large enough, they settle to the bottom and attach to a hard substrate, such as dead coral, with a muscular foot.

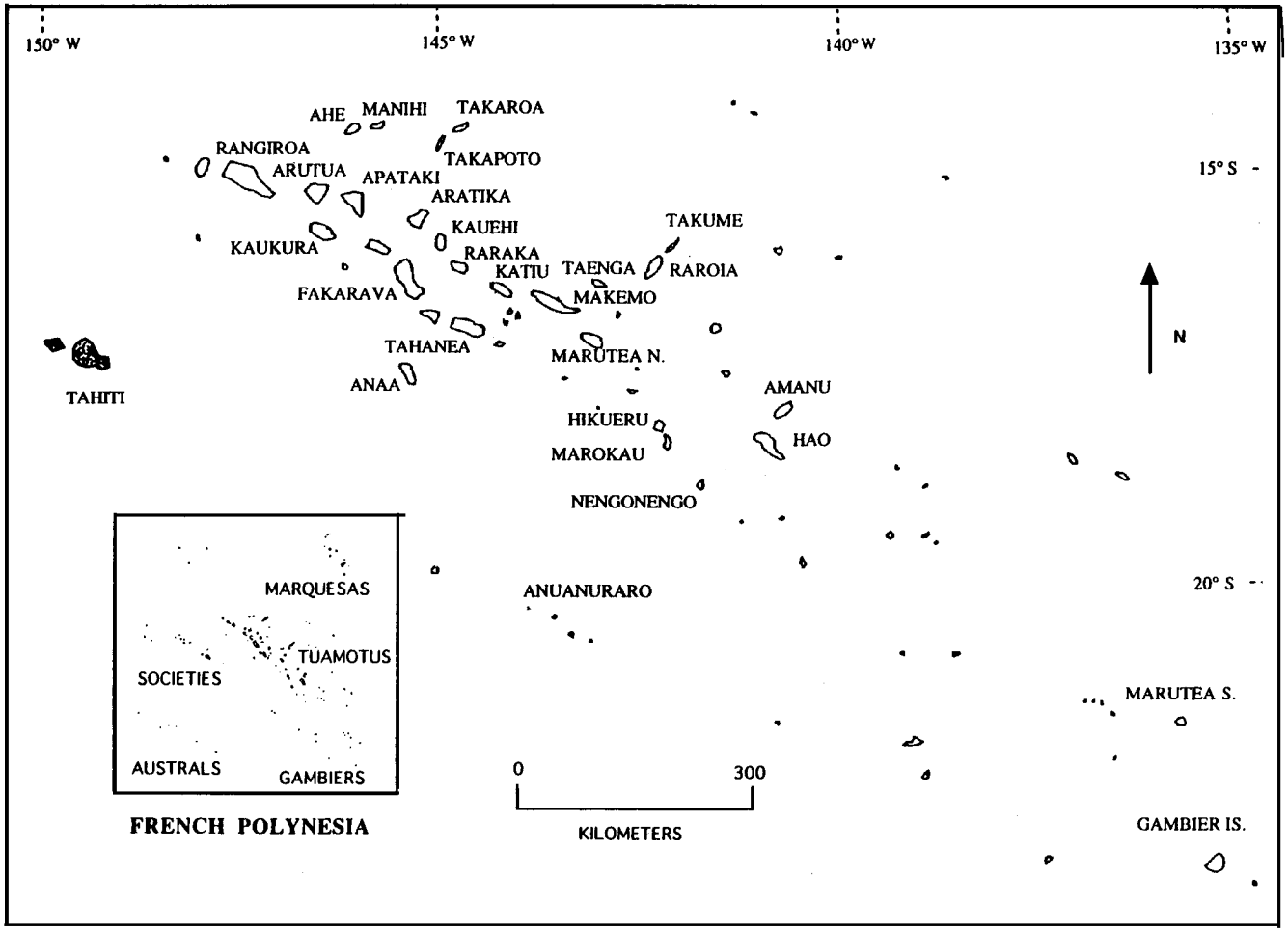


FIGURE 1. **The Tuamotu Archipelago.**

Then sessile, the growing pearl oyster is a filter feeder, ingesting planktonic food and organic detritus. It may live for ten years or more.

Reproductive losses and sessile habits of the adult individual constrain dispersal and limit population size. The abundance of pearl oysters varies greatly. Abundant patch reefs, adequate current flow, and narrow passes favor oyster growth and reproduction. Lagoon size is also a significant factor. In the Tuamotus, the largest oyster populations generally occur in lagoons with an area ranging between forty and a hundred square kilometers. Over millions of years, genetically distinct populations of pearl oysters have evolved on individual islands in the Tuamotus and other groups.

The Mother-of-Pearl Industry

The Tuamotuan mother-of-pearl industry was launched in the early nineteenth century by traders from Europe, South America, and Australia (Kunz and Stevenson 1908:189-198; JPS 1954:117-120). Though pearls were occasionally found, shells were the principal object of commerce, marketed in Europe for high-quality buttons and inlay work. Typically, a trader contracted an interpreter and a native diving team, sailed to a propitious atoll, and set out to work in isolated and rugged conditions. The lagoon floor was scanned with a glass box, divers descended quickly on a weighted line, and oysters were hauled to the surface. Sustained lack of oxygen sometimes led to motor and sensory dysfunction (Herve 1933:1401-1431).

Atolls with deep ocean passes were preferred because ships could set anchor in protected lagoons. When accessible stocks of pearl oysters became exhausted, the ship would move to another atoll. The permission of the atoll residents was not always secured, and altercations were frequent. On several occasions trading ships were pillaged by the islanders and their crews threatened with death (Beechey 1831:280-283; FitzRoy 1839:530-535; Moerenhout 1837:335-369). In 1842 the French Protectorate had become established in Tahiti and began regulating the mother-of-pearl diving industry.

Colonial regulations were based on recommendations from French oyster biologists who visited Tahiti intermittently. On a yearly basis, certain lagoons would be opened to diving, others would be opened only in certain portions, and still others would be closed until stocks began to regenerate. Minimum-size limits were placed on the oysters, depending on the size at maturity, and diving was restricted to certain seasons. Natural reserves were set aside in several lagoons. Underwater diving machines (“scaphanders”) were licensed in several lagoons, particularly those thought to be dangerous or inaccessible to free divers (*JOEFO,* 28 August 1890:301-303).

But management of the diving industry on remote atolls proved more illusory than real. Traders carrying undersized shells could easily evade government scrutiny and could bypass Papeete altogether. Native islanders claimed traditional rights to their lagoons and resented external intervention. The use of diving machines by entrepreneurs from Tahiti was strongly resisted by the Tuamotuans owing to the potential for overexploitation. Objections were particularly strident when the administration announced a Tuamotuan settlement plan for French oyster farmers (*PVCG, Pièces annexes* 1, 1888:123-138).

By the turn of the century, conditions in the diving industry had become less rugged and, in some cases, positively enjoyable. The opening of a dive season on one of the oyster-rich atolls has been described as "Rabelaisian" (Baruch 1936:45-47). Schooners and boats packed with divers and their families, dogs, pigs, chickens, canoes, and other goods would arrive day and night. Within days, an atoll that had barely held a hundred people would receive thousands. A tiny village suddenly became a huge agglomeration of traders, divers, and other workers. Wine, rum, and champagne flowed in unlimited quantities. There would be traveling theaters and shops that were stocked with trade goods as well as any store in Papeete.

After several weeks to several months, pearl oysters would become increasingly rare, and the divers would move on to another atoll. Some thirty-five atolls formed part of this vast archipelagic circuit (Figure 2),[2] about a third of which would be opened for diving for a several-month interval (data tabulated in SP n.d.). The divers and their families were funded by advances from Chinese-Tahitian entrepreneurs, covering the expenses of transport, housing, and subsistence. These entrepreneurs also ran the local shops, frequently at high markup values. Unless a pearl of exceptional value was found, the diver would not save very much from his several months of work and would often wind up in long-term debt to the entrepreneurs (Herve 1933:1413-1414).

Intensive exploitation by divers in underwater gear during World War II was apparently the last straw for natural stocks. By the 1950s, production of pearl shells had begun a dramatic decline in virtually all atolls (Ranson 1962: 56-57). In lagoon after lagoon, the Tuamotuan pearl oyster stocks reached the point of extinction, until only a handful of lagoons still contained stocks worth exploiting. With the help of French administrative aid, overseas biologists and technicians, and local entrepreneurs, a new industry was developed based on the capture of postlarval oysters ("spat collection"), rearing to maturity ("oyster culture"), and induction of pearl formation ("pearl culture").

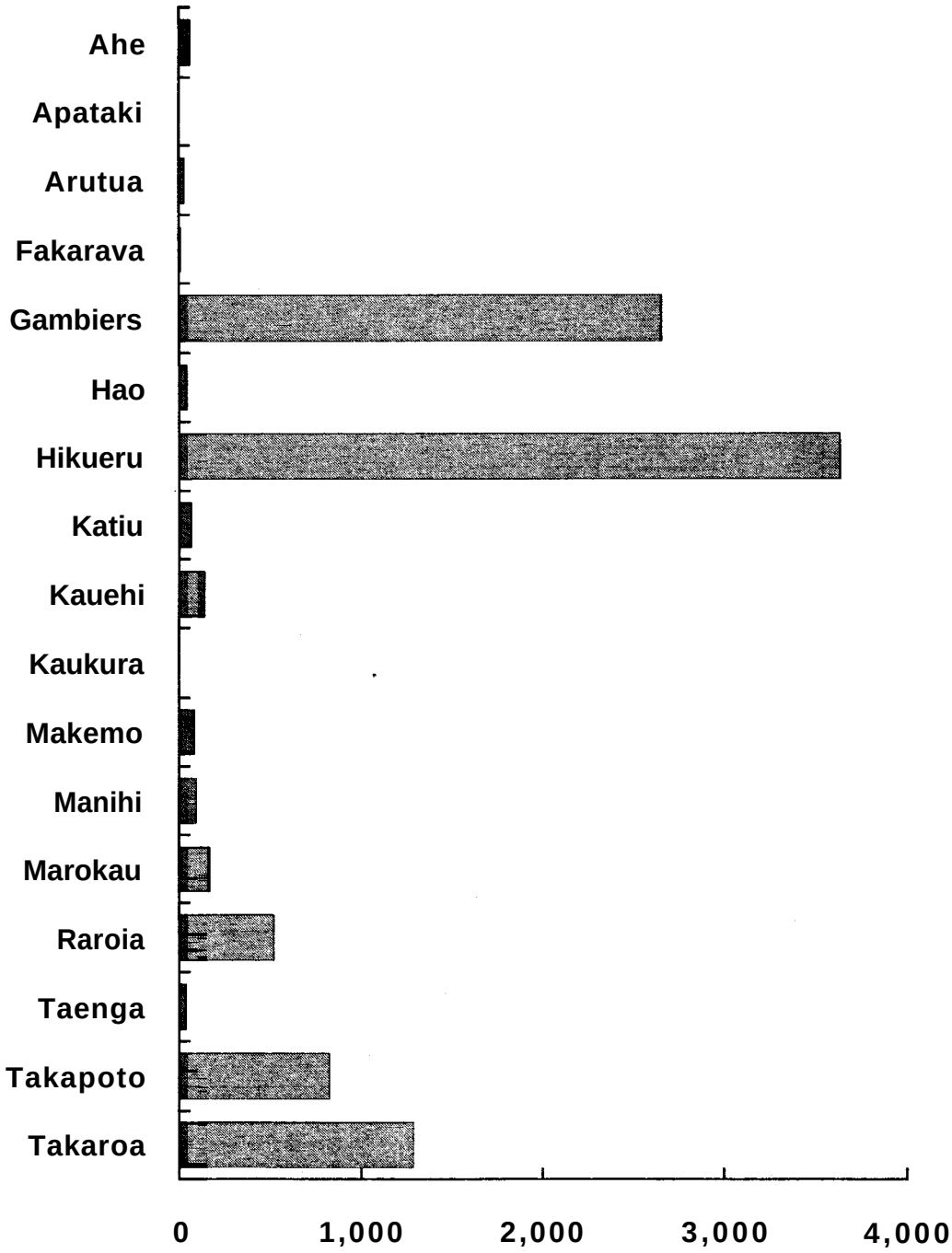


FIGURE 2. **Shell production (tons), 1946-1969.**

Spat Collection

The introduction of spat collection in the Tuamotus is credited to the pioneering efforts of Gilbert Ranson, a French oyster biologist. Ranson was called to Tahiti in the 1950s by the colonial administration when it became apparent that oyster catches were declining precipitously. Ranson con-

ducted surveys in the most promising lagoons, recording water temperatures and salinities, collecting plankton, and studying the growth of the pearl oyster at various depths, the nature and conditions of the bottom, and the direction of the currents. Ranson also conducted studies on pearl oyster biology and reproduction (1962:43-69).

Ranson found that only a minute fraction of the eggs produced by mature pearl oysters manage to become successfully fertilized, to evade being consumed by predators, to keep from being swept out into the ocean, and to find a suitable substrate. Fortuitously, he had learned of a tremendous enrichment of the natural pearl oyster stocks following hurricanes, which swept a large amount of debris onto the lagoon floors. Divers reported that trees on the bottom of certain lagoons had been covered by as many oysters as they had formerly had leaves. This suggested that artificial substrate might be utilized as well (Ranson 1962:65-66).

Ranson chose to experiment on Hikueru, an atoll that had long been a mecca for the diving industry (1962:7). He suspended thousands of bundles of local hardwoods beneath the lagoon surface, hoping to induce settling of spat (postlarval oysters). Ranson's efforts were successful, and Hikueru became the center of a trial pearl-farming project by the administration. In this early stage, however, relatively few oysters were needed, and these could be gathered by divers from the lagoon floor without necessarily endangering the natural stocks.

Ultimately, spat collection did replace diving. As pearl culture expanded, natural stocks were not sufficient. A simplified, efficient means of spat collection was devised using inexpensive, synthetic materials that required less maintenance and yielded oysters that could be easily collected at maturity. By the mid-1970s spat collection became the principal source of juvenile ("seed") oysters for pearl farming. Spat collection relieved the pressure on natural oyster stocks and produced oysters that were better suited for pearl farming (Coeroli and Mizuno 1985:551-556).

In 1970, Hikueru's lagoon had experienced an algae bloom, resulting in high mortality rates of pearl oysters. Takapoto, also rich in pearl oyster stocks, took its place as the center of experimental efforts in spat collection and pearl farming. By 1980, practically every household on Takapoto had spat collection stations scattered across the lagoon. Much of the yield was ultimately transshipped to pearl farmers on oyster-poor atolls. In general, native farmers did the diving and the spat collection, while the French and Chinese-Tahitians dominated in pearl culture.

Spat collectors are now manufactured primarily from opaque black polyethylene film sheets (see Coeroli, de Gaillende, and Landret 1984:45-67). The sheets are cut into narrow lengths and woven into twisted, flowerlike strips yielding abundant protected surface for spat fixation. The strips are

suspended at the lagoon surface with a series of floats and weights. These spat collection "stations" are set in a deep part of the lagoon at the change of seasons (April or October) when pearl oyster spatfall is highest relative to that of competing mollusc species. The stations are left to settle several meters below the lagoon surface, protecting the oysters from wave action.

Since spat collection is dependent on the abundance of natural oysters as well as the variable conditions of lagoon bathymetry and current flow, attempts have been made to produce spat through the more controlled conditions of on-land hatchery culture. Hatchery trials in Japan and Australia have met with serious setbacks, apparently because the protracted larval stage has precise, and not yet fully understood, physiological and nutritional requirements (Sims 1988:15). Other problems relate to difficulty with spawning induction and large numbers of abnormal larvae.

A pilot hatchery effort was launched by the Tahitian Institute for Aquaculture Development (EVAAM) on Rangiroa Atoll in 1987 (Cabral 1992). In sterile, well-oxygenated tanks of salt water, supplemented by nutrient unicellular algae, mature female oysters were induced to spawn through exposure to thermal and chemical shock. Fertilized eggs successfully developed into larvae, collected on substrate, and were nurtured in breeding tanks. When large enough, the oysters were transferred to lagoons. By 1990, fifty thousand spat were being produced through hatchery culture. Although mortality rates have been high, success has reportedly been achieved (the status of hatchery work in other regions is reported in Fassler 1994: 325-354).

Regulation of spat collection has proved difficult for the administration in Tahiti. To promote spat collection, concessions were authorized by the administration without fees. But following the disease problems, the administration decided to cut down on the number of spat collectors. To accomplish this, a fee was charged for every meter occupied, a fifty-meter maximum length was placed on all stations, and the number of stations was limited to three per individual (SMA 1987:1-3). These limits are seldom observed in practice.

It is also difficult to force islanders to keep within authorized concession locations (MM 1988:4). The stations are usually situated "chaotically" in the middle of the lagoons, and the islanders themselves have difficulty remembering where they were deployed and frequently move them to new, unauthorized locations. Some stations are deployed by islanders who do not reside on the atoll and only come once a year to deploy new stations or sell old ones. Consequently, in the long intervals between administrative surveys, it is difficult for anyone to keep track of what is going on in the center of the lagoons.

Oyster Culture ("Grow-Out")

Within half a year, young oysters have typically grown to six centimeters, large enough to be removed from the stations, cleaned from fouling algae, and transferred for rearing closer to the shore. The live oysters are pierced through the border of their shells and attached on floating lines (Coeroli, de Gaillende, and Landret 1984:60-62). An alternate method is to place the oysters in mesh pockets or wooden boxes. Some farmers do not move their oysters near shore, leaving them attached to the spat collection stations for direct use or sale to pearl farmers. These oysters are sold for lower prices, since they still require sorting, cleaning, and preparation for grafting.

During the first decade of pearl farming, oyster culture took place on fixed, metallic tubular platforms raised several meters above the lagoon bottom. These platforms were later suspected to be detrimental to the oysters because of heavy-metal leaching, detritus buildup, and crowding-related malnutrition. Accordingly, it was recommended that the farmers switch to floating, synthetic lines, similar (but more sturdy) to those employed in spat collection (EVAAM 1986:95-97). The growing oysters soon become quite heavy and are supported by large plastic drums filled with compressed air.

Transshipment of oysters between atolls is hazardous, as the oysters will die if they remain out of oxygenated salt water for more than half an hour. The preferred means of transport is by small plane, usually making numerous trips back and forth between an oyster-rich atoll and a neighbor. The less expensive but more risky means of transport is by boat, typically a twenty-four-hour journey or more to one of the neighboring atolls. The oysters are kept in large drums and periodically replenished with fresh sea water. In either case, mortality is to be expected. Most worrisome, however, is the potential for spread of infectious oyster disease (SMA 1987:4).

Pearl Culture

Pearl culture was first developed in Japan in the early twentieth century (Calm 1949:8-12). With the demise of the mother-of-pearl industry in French Polynesia, Japanese technicians were contracted by the administration to apply their methods to Tuamotuan pearl oysters. The first experiments, conducted in the early sixties, were successful, but the effort stalled for several years for lack of an international market for these pearls. Having developed a market for the white pearl, Japanese pearl dealers (generally also producers or closely allied with producers) were not eager to promote a competing product.

In the mid-1960s, following a request for investments by the Tahitian administration, a French jeweler began an experimental pearl farm on Manihi, in the Western Tuamotus. By the mid-1970s, other private investors from Tahiti had launched pearl-farming enterprises in other atolls and had established links to the American market. Eventually, the Japanese dealers also became interested in marketing the black pearl, providing a major stimulus for Tuamotuan pearl farming. By the early 1980s, the black pearl auction in Papeete had become an annual event that was well attended internationally (Salomon and Roudnitska 1986:123-150).

The details of pearl induction are still a trade secret, but the basic technique is as follows: A live pearl oyster is opened slightly. An incision is made through the mantle and a round nucleus (made from a thick mollusc shell) is implanted into the gonad of the oyster together with nacre-producing mantle tissue from a donor oyster. The oyster is then returned to the lagoon, and concentric rings of nacre are gradually secreted around the nucleus. Within a year or two, a coating of nacre will have sufficient thickness, color, and luster for the pearl to be profitably marketed (Grand et al. 1984:192-193).

The grafting operation (also called "seeding") is performed by experienced Japanese technicians and, more recently, by a few native islanders, who are accommodated by client farmers and are the most highly paid individuals in the industry. The technician may be paid a daily salary of around CFP 25,000 (approximately US$250)[3] or, alternatively, a percentage of the harvest (usually 50 percent). The graft takes place in a small hut, usually constructed on pilings in the nearshore lagoon. Meanwhile, workers are continuously busy selecting and cleaning donor and host oysters, and moving the oysters between the technician and a holding platform.

A few large-scale pearl farmers hire their own grafters and laborers from Tahiti, paying for transport and other necessities. Most pearl farmers in the Tuamotus run small-scale family operations, generally grafting fewer than five thousand oysters annually. The rest of the year is spent taking care of the oysters and the spat collection stations. Small-scale pearl farmers are eligible for support by a government cooperative (Groupement d'Intérêt Economique Poe Rava Nui), which arranges bank loans, provides technical advice and assistance with supplies, contracts Japanese grafters, and arranges for marketing during the annual pearl auction (Cabral 1989:57-66).

Experience shows that one hundred grafted oysters will yield five gem-quality pearls, fifteen "salable" pearls, twenty "unsalable" pearls, and the remaining sixty oysters will yield nothing at all. The small number of harvested pearls relates to graft rejection and oyster mortality. The expenses are considerable and do not yield any revenues for five or six years. According to one estimate (Fassler 1991:48), US$35-45 is invested for each harvested

oyster (including the cost of the oyster, nucleus, implant, other labor, equipment, transport, and buildings). This investment seems excessive since pearls have been wholesaling for approximately US$100, which (at a 20 percent success rate) would mean a considerable loss to the producer.

As with spat collection, pearl-farming concessions are allocated by the administration in Tahiti. These concessions are easier to monitor than the spat collection stations, since pearl farms are situated closer to land and the concession location can be specified clearly in relation to known reference points on land. Concession fees are proportionate to the lagoon surface area occupied and are charged on a sliding scale (lower for the large-scale farmers). Since increasing the depth or the amount of production does not result in a higher fee, crowding of farmed oysters has unwittingly been encouraged.

Marketing

World production of pearls is estimated to be in the vicinity of one hundred tons annually, over 90 percent produced in Japan. Japan is also the world's largest importer of pearls (close to twenty tons in 1989), predominantly white pearls cultured in China and Southeast Asia. Annual black pearl production is relatively small (less than a ton), but it is several times more valuable than white pearls. Although black pearls are produced almost entirely in the Pacific Islands (French Polynesia and the Cook Islands), the Japanese have played a major role in this industry as well through their skilled overseas grafting technicians and their domination of the import-export market.

Pearls produced in the Tuamotus by large-scale farmers are sold in batches through private arrangements with black pearl wholesalers (in Japan, Switzerland, and the United States). Small-scale farmers associated with the government cooperative must market their pearls exclusively through the annual auction in Tahiti, to which the major international buyers are invited. The first export, of 6 kilograms of black pearls, took place in 1976 and was worth US$80,000. By 1983, 139 kilograms of pearls were exported, worth over US$4 million, becoming the top export earner of French Polynesia. Sales continued to increase in the following years (Figure 3), reaching 600 kilograms in 1990, worth US$37 million (McElroy 1990:4-6; SMA 1990:74; Sims 1992b:20).

Concern has been raised that increasing production of black pearls in French Polynesia and other Pacific islands (Cook Island production in 1989 was 26 kilograms, worth US$350,000) will ultimately lower the sale price of the black pearl (McElroy 1990:7). Prices per pearl have dropped by 15 percent between 1986 and 1991 (see Figure 3), but this may be related to slug-

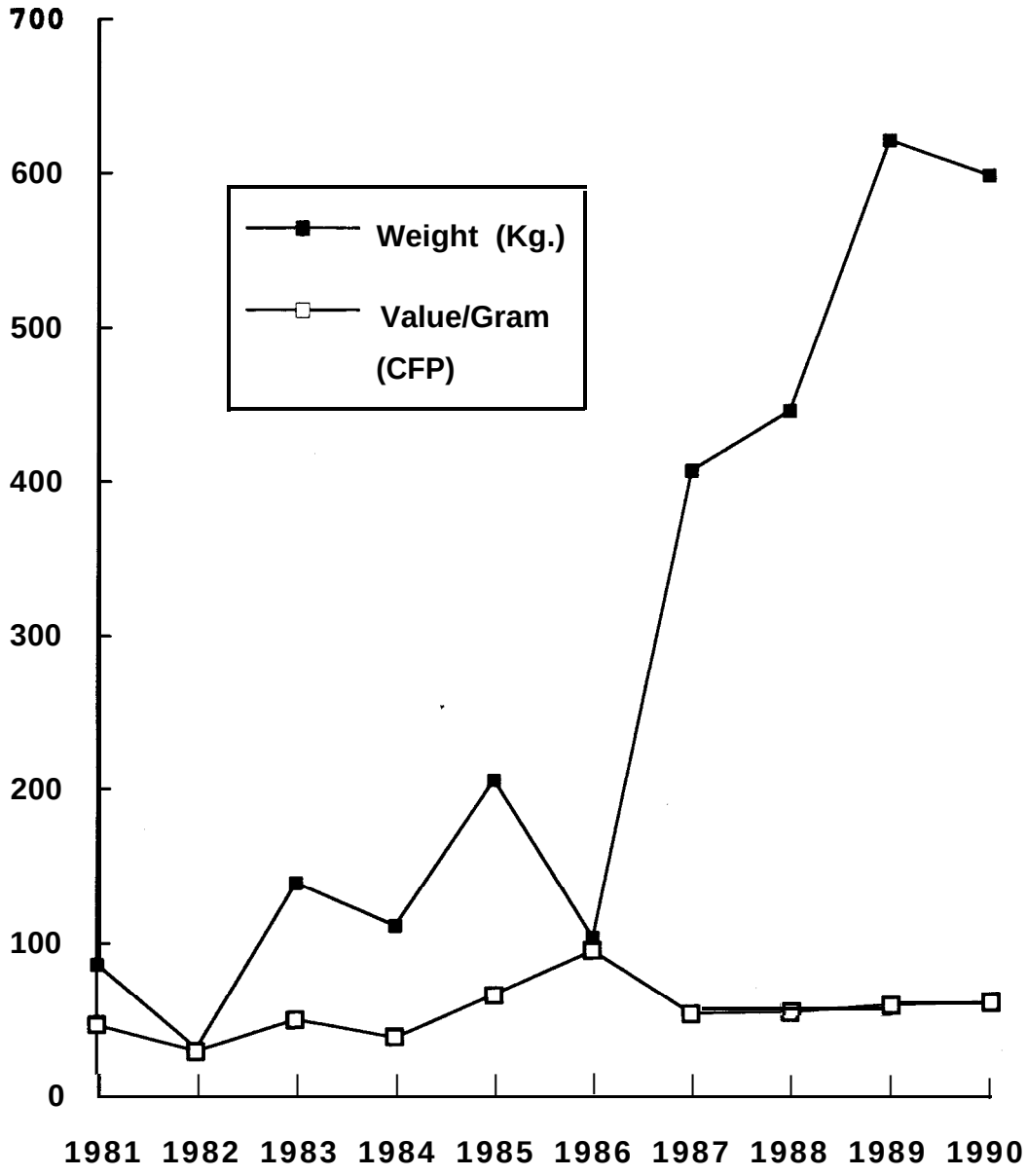


FIGURE 3. **Pearl exports, French Polynesia, 1981-1990.**

gish demand and global recession rather than oversupply. Fluctuating exchange rates over the past decade make it even more difficult to evaluate changes in sale prices. Proposed value-boosting steps have included freezing or slowing production and a concerted South Pacific trade policy to prevent price competition (Coeroli 1992:9).

Boom Growth in the Western Tuamotus

The takeoff of the Tuamotuan pearl-farming industry is attributable to several factors. Foremost among these was the success of pioneering efforts by

the administration and individual entrepreneurs in adapting spat collection and grafting technology to local oyster stocks and lagoon conditions. A major incentive was provided by grants and low-interest loans for pearl-farming development. Additional aid was allocated to help return migrants to their home atolls, assisting with transport, housing, and employment. The declining economic situation in Papeete also provided a "push" factor (Pollock 1978:133-135; Connell 1986:53-54).

An experimental pearl-farming station was built by the administration on Takapoto (Robineau 1977:19-21). Extension agents provided instruction to the population, and Takapoto rapidly became a center for supplying oysters to pearl farms on neighboring atolls. Pearl-farming cooperatives were established, employing the services of Japanese grafting specialists. An airport was built linking Takapoto and Tahiti. By 1974, migrants in Tahiti began to return to Takapoto, encouraged by the new prospects. By the mid-seventies, a long-standing trend of out-migration to Papeete had been reversed (Pollock 1978:133-135).

With the assistance of the Tahitian administration and local banks, pearl-farming cooperatives were established on several atolls in the Western Tuamotus by the late 1970s. However, spat collection was still producing meager harvests, and the majority of oysters (for pearl culture) had to be obtained through diving. The cooperatives soon became plagued with problems of financial mismanagement, treating loans like outright subsidies (Cabral 1989:63). Capital was hard to obtain for independent small-scale pearl farmers. Consequently, until the mid-1980s, the pearl industry remained moribund.

A breakthrough occurred following the series of hurricanes that ravaged the Tuamotus in 1982 and 1983. Debris deposited on the lagoon floor provided a natural substrate for oyster larvae, resulting in dramatic spat collection increases (EVAAM 1987:5). In lagoons where spat collection was most successful, juvenile oysters could be harvested after only six months, yielding a severalfold return on the initial investment. Spat collection provided an immediate source of capital and enabled islanders to acquire the seed oyster stocks, experience, and contacts necessary for pearl-culture operations.

For Tuamotuan migrants in Tahiti, many of whom had been left unemployed when the French nuclear-testing program had completed a massive program of construction work, the developing pearl-farming industry provided a welcome opportunity to return to the atolls. Many of these migrants had not seen their home atolls since childhood; some had even been born overseas (generally in Tahiti or New Caledonia). Between 1983 and 1988 (dates of successive government censuses), annual population increases of 3 percent or more were occurring on several pearl-farming atolls in the

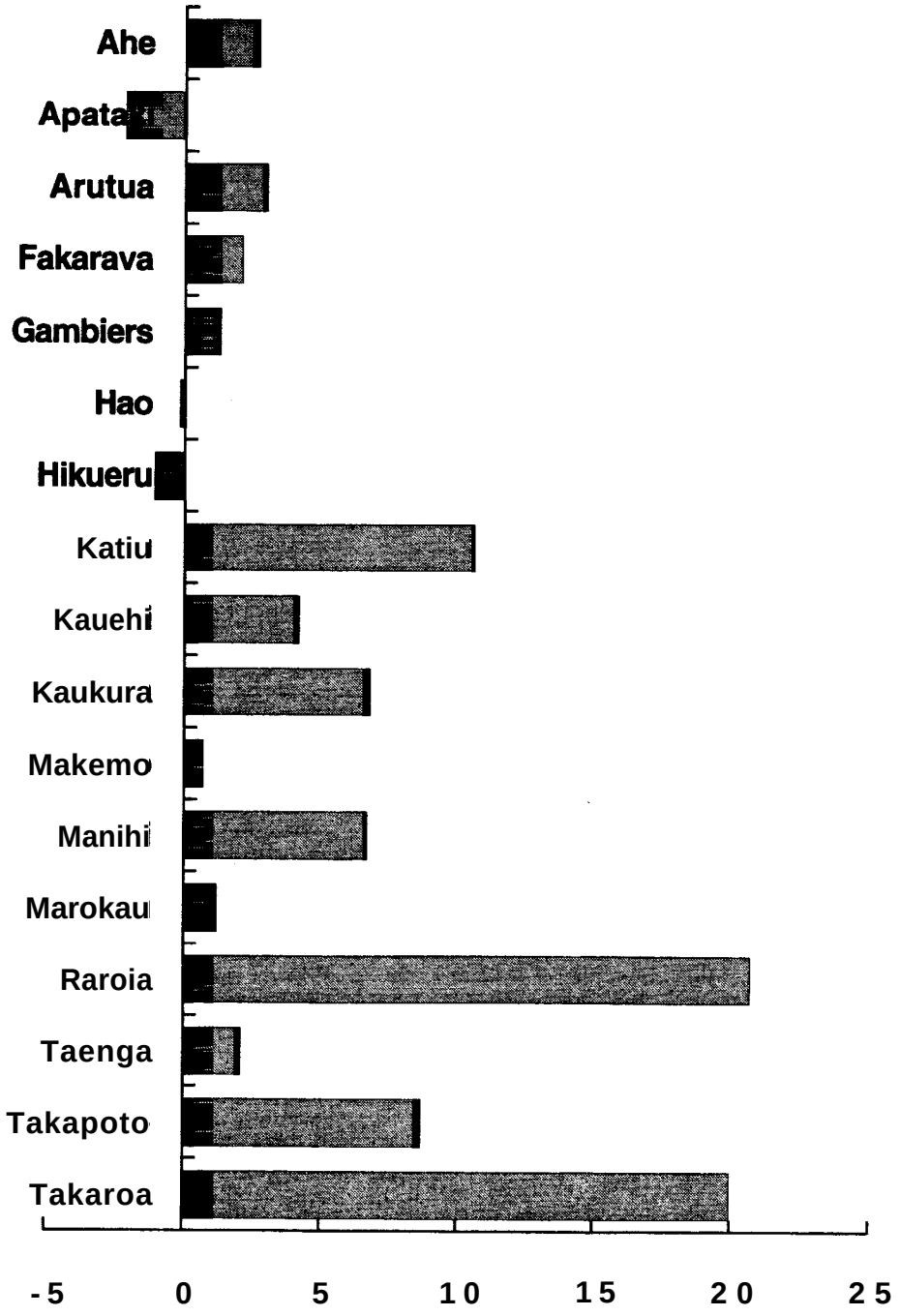


FIGURE 4. **Annual population growth rate (percentage), 1983-1988.**

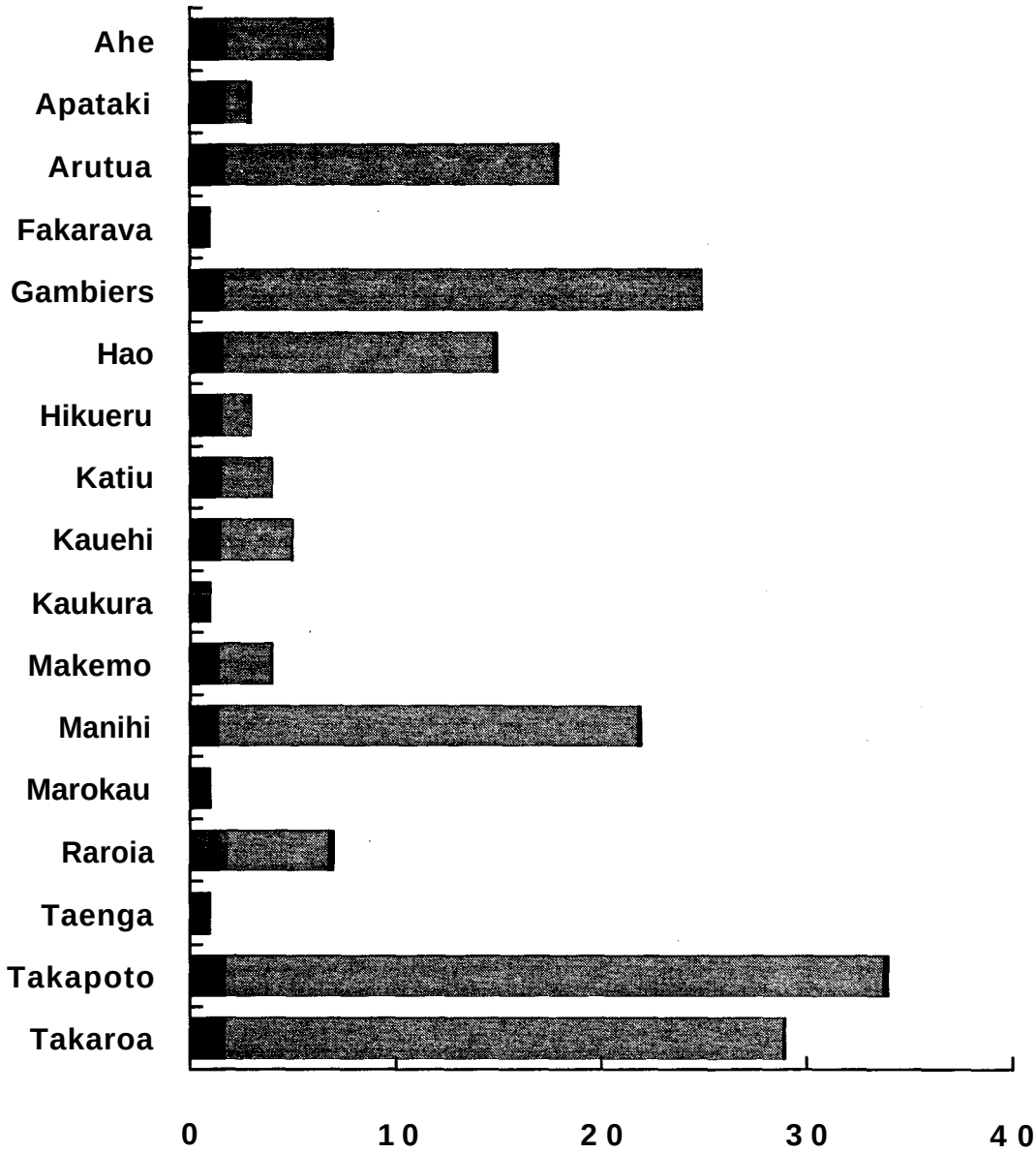


FIGURE 5. **Number of pearl-farming concessions, 1988.**

Western and Central Tuamotus (ITSTAT 1988:45; SMA 1988:22-23), reversing several decades of out-migration and population decline (compare Figures 4 and 5).

Growth rates were highest on Takaroa, which had become the center of the pearl-farming industry. They were also high on Takapoto and Manihi, the original sites of pearl-farming experimentation. These are atolls with midsized lagoons, with substrate and hydrological conditions apparently well-suited for natural pearl oyster stocks, yielding highly productive spat collection. The population change was negative for Hikueru, where natural

pearl oyster stocks had been devastated by an algal bloom during the late 1960s. Population also declined on Hao, site of a French military base, owing to the scaling down of military activities over recent years. There is no evident explanation for the population decline in Apataki, a pearl-farming atoll relatively close to Tahiti.

Pearl export statistics during the 1980s (see Figure 3) provide an indication of the dramatic increase in production. Between 1981 and 1990, exports had increased sevenfold. Detailed breakdown by atoll and by producer is not available (Table 1 provides a rough estimate based on the number of licensed grafting technicians), but it is reported that some fifteen large-scale pearl farms, run by entrepreneurs based in Tahiti, are responsible for over 80 percent of all production (SMA 1990:32; SMA n.d.:1). The remainder of the pearls are produced by small-scale pearl farmers, mostly

TABLE 1. **Estimated Pearl Production, 1990**

Proprietor	Grafters	Atoll(s)	Annual Pearl Production[a]
Total	55		385,000
R. Wan	17	Marutea S., Gambier, Nengonengo, Anuanuraro	119,000
Br. Rosenthal	6	Manihi	42,000
A. Breaud	5	,,	35,000
J. M. Domby	2	,,	14,000
M. Lys	2	,,	14,000
R. Bouche	2	,,	14,000
A. Giau	1	,,	7,000
P. Yu	4	Takaroa	28,000
J. P. Fourcade	2	Aratika	14,000
J. C. Girard	2	Takapoto	14,000
E. J. Den Breejen	1	,,	7,000
Y. Tchen Pan	2	Hikueru	14,000
L. Bellais	2	?	14,000
T. Martin	1	?	7,000
GIE[b]	5	Apataki, Arutua, Hao, Hikueru, Katiu, Kaukura, Makemo, Gambier, Manihi, Marutea N., Raraka, Raroia, Taenga, Tahanea, Takapoto, Takaroa, Takume	35,000
EVAAM (research)	1	Rangiroa	7,000

[a] Based on an estimate of 7,000 pearls per grafting technician.
[b] Groupement d'Intérêt Economique (cooperative).

native Tuamotuans affiliated with the government cooperative, with an annual production generally reaching a few hundred pearls per farmer.

Oyster Mortality

In July 1985, massive mortality suddenly struck Takapoto's pearl oysters. Annual mortality reached as high as 30 to 90 percent (normally it is only about 10 percent). The problems began in farms near the village islet, but within a few months the entire lagoon was affected by high rates of oyster mortality. Regulations were immediately promulgated banning the transport of oysters from Takapoto, depriving the population of its major source of income (transshipment of oysters to private farms on other atolls). But it was apparently too late. By 1986, high mortality rates were also reported on five other atolls (EVAAM 1987:3).

The highest increase in mortality rate occurred with adult oysters. During the height of the disease, oyster mortality increased twofold in pregraft oysters and up to fivefold in postgraft oysters, but natural oysters and related molluscs were affected as well. The pearl retention rate plummeted and many farms became financially endangered. In September, several government-supported research institutions organized a coordinated effort to study the problem and sent researchers shuttling back and forth to Takapoto and neighboring atolls.

Initial histological findings indicated no infectious agent in the affected oysters. However, abnormalities in cellular lysosomes indicated stress. One line of evidence suggested that mortality is related to heavy-metal toxins from decomposing pearl-farm platforms. Alternatively, the problem was linked to detritus buildup underneath farmed oysters. A third theory was that an excess of oysters had been produced following the deposit of debris by the hurricanes of 1983. When the suspended nutrients settled, the lagoon reverted to a lower equilibrium and the "excess" oyster population could no longer be supported ecologically (Grizel 1986:14-15; EVAAM 1986:104-119).

Although the mortality was still not fully understood, remedial measures were taken by both the administration and local pearl farmers. Takapoto was quarantined and its neighbor atoll, Takaroa, not yet affected by the epidemic, became the new center for spat collection and transshipment (close to a million oysters were reportedly sent to neighboring atolls in 1990). Exploitation of natural stocks was phased out completely. The pearl farmers removed their oysters from metal platforms to low-density longline systems. The measures were at least partially successful. By 1987, mortality rates had dropped significantly on several affected atolls (EVAAM 1987:6).

Conflict over Lagoon Control and Allocation

By the mid-1980s, French and Chinese-Tahitian entrepreneurs based in Tahiti had established large-scale pearl farms on several atolls in the Tuamotus (see Table 1). Some of these entrepreneurs had been granted lagoon concessions by the Tahitian administration; others had not. In any case, frustration mounted as newly returning migrants, and in some cases long-term resident islanders, found their concession applications delayed or refused owing to lagoon overcrowding. On several atolls, "associations of protection" were formed to resist and ward off alien entrepreneurs. Resistance has been especially evident on Takaroa.

The conflict was brought to territorywide attention by the media in 1990, when members of Takaroa's association of protection massed at the village quay seized several tons of buoys, rope, construction materials, petroleum, and other goods intended for alien pearl farmers, locking them up in the community storehouse (*DT,* 10 October 1990:13; *DT,* 14 October 1992:13). The situation was temporarily defused through a high-level visit by Gaston Flosse (president of French Polynesia), who promised to cover the expenses of reshipping the seized goods to Tahiti. In the ensuing months, the association president was arraigned on criminal and civil charges, and the goods were reshipped to the atoll. The situation remains highly volatile.

At the heart of the problem is the thorny issue of native land and lagoon rights. Current protest by Tuamotuans against administrative allocation of pearl-farming concessions is linked with claims to adjacent land. In native views, lagoon concessions should be allocated to legitimate claimants of adjacent land parcels in proportion to the land area claimed. In practice, the administration grants concessions to aliens without formal rights to adjacent land. Even where formal land rights are claimed by aliens, the allocated concessions often extend way beyond the boundaries of the adjacent land parcel, interfering with potential lagoon rights of neighboring landholders.

A second argument is that the government has no business being in charge of Tuamotuan lagoon concessions in the first place. The Tahitian administration took over reef and lagoon rights from the colonial government, but colonial lagoon claims rest on an 1890 decree that (arguably) violates previous agreements guaranteeing existing native property rights. Consequently, the view of some islanders is that authorizating lagoon concessions should be handled exclusively by local communities, not by a distant administration in Tahiti.

A discussion of the historical, political, and legal aspects of land and lagoon tenure is beyond the scope of this article and is considered in detail elsewhere (Rapaport n.d.). Briefly, the institution of the French legal system

and tenure laws in the nineteenth century, requiring privatization of land titles and government expropriation of lagoons, facilitated the alienation of highly valued land and lagoon space. In the Tuamotus, land was generally preserved under native control by failure to comply with official title and transaction procedures. Even land that had been privatized reverted to a state of collective ownership after the death of the title holders, making subsequent market transactions onerous and prohibitive.

Lagoons, however, had been declared part of the public domain by the colonial administration. Atoll populations continued to utilize their lagoon resources for the mother-of-pearl diving industry, subject to periodic lagoon closures, quotas, and licensing by the French. Control of the public domain was transferred to the territorial administration in Tahiti under the *loi cadre* (statute) of 1957. Under the autonomous Tahitian administration all citizens, regardless of ethnicity, could apply for lagoon concessions. Not surprisingly, wealthy entrepreneurs from Tahiti have increasingly gained access to large sectors of Tuamotuan lagoon space.

Conclusion

A previous article in this journal aptly summarized the difficult situation of remote and resource-poor atoll communities of the South Pacific (Connell 1986:41-58). On rural islands, lack of economic opportunity has led to outmigration, increasing external dependence, and “dying” communities. Conversely, urban islands (such as Majuro and Tarawa) face severe crowding, pollution, and unemployment. Against this seemingly hopeless backdrop, it was suggested that government support of infrastructure, pearl farming, and return migration to outer islands in the Tuamotus was apparently successful and might serve as a model for development efforts in other Pacific atolls (Connell 1986:57).

Overton considers the above issues for the Pacific Islands in general. Export crops, still “the cornerstone of development in most places” (Overton 1993:50), face unstable or contracting markets, while imported food has increasingly replaced subsistence production. Lacking economic opportunities, rural popuations have left for urban centers, placing severe strains on land and water resources and exacerbating problems of housing and employment. Overton cautions that agricultural success alone does not provide the overall solution and may lead to accumulation, dispossession, environmental degradation, and conflict over land and lagoon resources.

The situation today indicates that development efforts in outer islands of the Tuamotus have indeed borne fruit. Following initiatives by the Tahitian administration and risk-taking entrepreneurs, innovative aquacultural tech-

niques have been introduced and a highly successful pearl-farming industry has been established. Surviving natural oyster stocks on lagoon floors constitute an ecologically precarious base of the new farming industry. Floating collectors provide a substrate for the attachment of spat. The collected oysters are then grown to maturity and induced to produce pearls of high value on the international market.

It is now evident, however, that the Tuamotuan pearl-farming initiative has led to unanticipated consequences, potentially endangering the future viability of the industry. The pearl boom has attracted a wave of migrants from Tahiti, approaching population growth rates of up to 20 percent annually in some atolls. Many of the new pearl farmers are native Tuamotuans returning to their home islands, but there are also alien entrepreneurs from Tahiti, some of whom occupy large sectors of lagoon space. Intense oyster farming has been related to epidemic oyster mortality, concerns about oversupply, and conflict over the allocation of Tuamotuan lagoon concessions to entrepreneurs from Tahiti.

Similar consequences have begun to occur elsewhere in the emerging Pacific Island pearl industry (see Sims 1988:7 for comparable developments in Japan and Australia). On Manihiki, in the Cook Islands, pearl farming has been successfully established, attracting migration and investment from the main island, Rarotonga. However, pearl-farming activities have been linked with an outbreak of oyster disease (not yet fully explained). Pearl farming has also led to conflict over lagoon allocation and control. A law passed in 1982 granted island councils control over lagoon resource management, but "veto power" was reserved by the central government, which has become embroiled in disputes between local farmers, a Tahitian entrepreneur, and the island council (Sims 1992a:11-12; Dashwood 1992:29-30).

Development planners elsewhere considering expansion into the pearl-farming industry may benefit from the Tuamotuan experience.. To begin with, the distribution and abundance of natural pearl oyster stocks, potential competitors, lagoon morphology, and available nutrition should be evaluated. Experimental trials can be undertaken. If the initial results are promising, existing laws, traditions, and precedents concerning lagoon tenure bear careful investigation. A potentially rapid and chaotic influx of migrants needs to be anticipated and planned for. Above all, the needs and wishes of long-term inhabitants should be taken into account before any intervention.

NOTES

Financial funding for research fieldwork (spring 1990-summer 1991) was provided by the Fulbright Foundation, the East-West Center, and the Etablissement pour la Valorisation des Activités Aquacoles et Maritimes (EVAAM), Papeete. Thanks are due for advice,

cooperation, and generosity extended by the community and pearl farmers of Takaroa, representatives of administrative agencies and research institutions in Tahiti, and colleagues and friends in both Hawai'i and Tahiti. I also gratefully acknowledge the informative critique offered by two anonymous reviewers.

1. Pearl farming also occurs in the Gambier Islands (including Marutea Sud), which are administratively linked with the Tuamotu Archipelago. Pearl-farming trials have also occurred in the neighbor islands of Tahiti but have not yet reached productive importance. Some data from the Gambiers have been included here, but this article is primarily focused on the Tuamotus. The ground-breaking work on pearl culture in Japan and more recent successes in Australia, Southeast Asia, China, India, and the Cook Islands (George 1978; Fassler 1991:34-52; Doumenge 1992:1-52) are beyond the scope of this article.

2. Data have been aggregated for Raroia (includes neighbor atoll Takume) and the Gambier Islands (includes Marutea Sud).

3. Exchange rates have fluctuated considerably The dollar appreciated against the French Polynesian franc in the mid-1980s (the dollar attained a high of 164 francs in 1986) but depreciated toward the end of the decade (dropping to 102 francs in 1990).

ABBREVIATIONS

DT	*La Dépêche de Tahiti*
EVAAM	Etablissement Pour la Valorisation des Activités Aquacoles et Maritimes
ITSTAT	Institut Territorial de la Statistique
JOEFO	*Journal Officiel des Etablissements Français de l'Océanie*
MM	Ministère de la Mer
PVCG	*Procès-Verbaux des Séances du Conseil Général*
SMA	Service de la Mer et de l'Aquaculture
SP	Service de la Pêche

REFERENCES

Baruch, M.
1936 Tuamotu Archipelago: Amongst the Pearl Divers. *Walkabout,* 1 January, 45-47.

Beechey F. W.
1831 *Narrative of a Voyage to the Pacific and Beering's Strait.* London: Colburn and Benchley.

Cabral, P.
1989 Problems and Perspective of the Pearl Oyster Aquaculture in French Polynesia. *Advances in Tropical Aquaculture* 9:57-66.
1992 The *Pinctada margaritifera* Hatchery in French Polynesia. *Pearl Oyster Information Bulletin* 4:8-9.

Cahn, A. R.
1949 *Pearl Culture in Japan.* Fishery Leaflet 357. Washington, D.C.: U.S. Fish and Wildlife Service.

Clarke, R.
1994 Feasibility of Pearl Oyster Development on Namdrik Atoll, Republic of the Marshall Islands. Trip Report, Salston-Kennedy Project No. NA36FD0375.

Coeroli, M.
1992 Status of the Tahitian Cultured Pearl Market. *Pearl Oyster Information Bulletin* 4:9.

Coeroli, M., D. de Gaillende, and J. P. Landret
1984 Recent Innovations in Cultivation of Molluscs in French Polynesia. *Aquaculture* 39:43-69.

Coeroli, M., and K. Mizuno
1985 Study of Different Factors Having an Influence upon the Pearl Production of the Black Lipped Pearl Oyster. *Proceedings of the Fifth International Coral Reef Congress, Tahiti,* 5:551-556.

Connell, J.
1986 Population, Migration, and Problems of Atoll Development in the South Pacific. *Pacific Studies* 9 (2): 41-58.

Dashwood, J.
1992 Conflict Resolution in the Development of the Cook Islands Pearl Industry. *Pearl Oyster Information Bulletin* 4:29-30.

La Dépêche de Tahiti (DT)
1968- Papeete.

Doumenge, F.
1992 Nacres et perles, traditions et changements. In *Nacres et perles,* edited by F. Doumenge and A. Toulemont, 1-52. *Bulletin de l'Institut Océanographique, Monaco,* Numéro Spécial 8.

Etablissement pour la Valorisation des Activités Aquacoles et Maritimes (EVAAM), Papeete
1986 *Rapport annuel.* Papeete: Imprimerie du Gouvernment.
1987 Note succincte sur la production nacrière de Polynésie Française. Référence 233, 6 April 1987.

Fassler, C. R.
1991 Farming Jewels: The Aquaculture of Pearls. *Aquaculture Magazine,* September / October, 34-52.

———, ed.
1994 Abstracts of Papers Presented at Pearls '94, International Pearl Conference, Honolulu, Hawaii. *Journal of Shellfish Research* 13 (1): 325-354.

FitzRoy, R.
1839 *Narrative of the Surveying Voyages of His Majesty's Ships. . . .* London: H. Colburn.

George, C. D.
1978 The Pearl: A Report to the Government of Papua New Guinea, the Food and Agricultural Organisation of the United Nations, and the Asian Development Bank. Unpublished MS, copy in author's possession.

Grand, S., M. Coeroli, P. Siu, J. P. Landret, and S. Yen
1984 Exploitation du milieu lagonaire. In *Les écosystèmes lagonaires de la Polynésie Française: Etat et connaissances,* 1:181-195. Papeete: CORDET.

Grizel, H.
1986 Etude des mortalités de l'huître perlière, *P. margaritifera,* dans l'archipel des Tuamotu. *Rapport IFREMER* 86/01/Aq/Trin.

Herve, F.
1933 L'Huître perlière et la perle dans les lagons de l'archipel des Tuamotu. *Bulletin de l'Agence Général des Colonies* 26:1373-1431.

Institut Territorial de la Statistique (ITSTAT), Papeete
1988 *Résultat du recensement général de la population de la Polynésie Française du 6 Septembre 1988,* Volume 1. Papeete: Imprimerie du Gouvernment.

Intes, A.
1982 *La nacre en Polynésie Française (*Pinctada margaritifera *Linne, Mollusca, Bivalvia): Evolution des stocks naturels et de leur exploitation.* Notes et Documents ORSTOM, no. 16. Papeete.

Journal Officiel des Etablissements Français de l'Océanie (JOEFO)
1884- Papeete: Imprimerie du Gouvernment.

JPS [J. P. Shortfall]
1954 Birth Pangs of the Islands Pearling Industry. *Pacific Islands Monthly,* April, 117-120.

Kunz, G. F., and C. H. Stevenson
1908 *The Book of the Pearl: The History, Art, Science, and Industry of the Queen of Gems.* New York: Century Company.

McElroy, S.
1990 The Japanese Pearl Market. *Pearl Oyster Information Bulletin* 2 (November 1990): 4-8.

Ministère de la Mer (MM), Papeete
1988 Situation de la perliculture en Polynésie Française. Référence 114/CM, 17 August.

Moerenhout, J.
1837 *Voyage aux îles du Grand Océan. . . .* Paris: A. Bertrand.

Overton, J.
1993 Pacific Futures? Geography and Change in the Pacific Islands. *New Zealand Geographer* 49 (2): 48-55.

Panoff, M.
1971 The Society Islands: Confusion from Compulsive Logic. In *Land Tenure in the Pacific,* edited by R. Crocombe, 43-60. Melbourne: Oxford University Press.

Pollock, N.
1978 Takapoto: La prospérité, retour aux îles. *Journal de la Société des Océanistes* 34 (60): 133-135.

Porlier, L.
1929 *Documentation des lagons des îles Tuamotu: Propriété communale des districts.* Papeete: Imprimerie de l'Océanie.

Procès-Verbaux des Séances du Conseil Général (PVCG)
1867- Papeete: Imprimerie du Gouvernment.

Ranson, F.
1962 *Missions dans la Pacifique: Récifs coralliens, Huîtres perlières.* Papeete: Editions Paul Lechevalier.

Rapaport, M.
n.d. Between Two Laws: Tenure Regimes in the Pearl Islands. *The Contemporary Pacific,* in press.

Ravault, F.
1978 *Structures foncières et économie du coprah duns l'archipel des Tuamotu.* Papeete: ORSTOM.

Robineau, C.
1977 Takapoto: Etude socio-économique. *Journal de la Société des Océanistes* 54/55:3-37.

Salomon, P., and M. Roudnitska
1986 *Tahiti, the Magic of the Black Pearl.* Papeete: Tahiti Perles.

Service de la Mer et de l'Aquaculture (SMA), Papeete
1986- *Rapport annuel.*
1987 Réflexions concernant les concessions maritimes à vocation nacrière et perlicole. Référence 250/SMA/SC/FL, 27 February,
n.d. Nombre de greffeurs japonais exercant en P. F. trimestre 90.

Service de la Peche (SP), Papeete
n.d. Production nacrière des atolls de Polynésie Française.

Sims, N.

1988 Pearl Culture. Working Paper 4, South Pacific Commission Conference on Inshore Fisheries Resources, Noumea.

1992a News from the Cook Islands. *Pearl Oyster Information Bulletin* 4:11-14.

1992b French Polynesian Cultured Pearl Export Statistics. *Pearl Oyster Information Bulletin* 5:20.

THE LAST EXILE OF APOLOSI NAWAI: A CASE STUDY OF INDIRECT RULE DURING THE TWILIGHT OF THE BRITISH EMPIRE

Charles J. Weeks, Jr.
Southern College of Technology
Marietta, Georgia

In June 1940, the British governor of Fiji exiled Apolosi Nawai, the charismatic leader of Fijian commoners, for the third and final time. To colonial officials, he was a "disaffected native"; to the indigenous chiefly hierarchy, he was a threat to their privileged status. From the perspective of the Colonial Office in London, Apolosi epitomized the contradiction between English concepts of order on one hand and justice on the other. Placing Apolosi's exile within the context of the Robinson and Gallagher thesis of imperialism, however, Apolosi was a "proto-nationalist" who had to be removed if the collaborative arrangement between the crown and the chiefly hierarchy of Fiji was to survive. In 1940, the British opted for the expediency of indirect rule at the expense of their traditions of fairness and legality. Partially as a result, Fiji entered the post-World War II era of decolonization with indirect rule firmly entrenched.

IN JUNE 1940, Sir Harry Luke, governor of Great Britain's South Pacific crown colony of Fiji, ordered Apolosi Nawai exiled to the remote island of Rotuma for a period of ten years. By the time of his death in 1946, Apolosi, one of the most fascinating personalities to emerge in Oceania during the twentieth century, had spent over twenty-four years in confinement, although only a sentence of eighteen months had resulted from a fair trial. An outsider and a commoner of lowly status who led the only serious Fijian challenge to British indirect rule during the twentieth-century colonial period, Apolosi had to be eliminated if a harmonious relationship between crown authorities and the indigenous oligarchy of chiefs was to continue to

Pacific Studies, Vol. 18, No. 3--September 1995

prosper. As a result, three colonial governors sentenced him to exile for a combined period of twenty-seven years.[1]

Because the study of colonial rule in the Pacific islands has not yet been fully integrated into general historical theories of imperialism, it is difficult to determine what islanders have in common with their African and Asian counterparts. An examination of Apolosi's last exile provides a useful case study for examining British indirect rule in Oceania during the twilight of the British Empire. It also affords the opportunity to place these events within the context of one of the most important historical paradigms of imperialism: the Robinson and Gallagher thesis.

In their seminal study of imperialism, *Africa and the Victorians* (1961), British historians Ronald Robinson and John Gallagher sought to provide an intellectual framework for understanding the complex phenomenon of imperialism and colonialism.[2] According to these two scholars, British officialdom never planned to amass a large empire. Instead, one evolved from a desire to keep as much of the world as possible open to free trade, hence British commercial domination. Britain did not seek to gain direct control of new territory unless it was absolutely necessary, preferring to rule indirectly through the precolonial indigenous elite, who would assist in keeping the colony aligned with Britain. According to Robinson, these "collaborators . . . were concerned to exploit the wealth, prestige, and influence to be derived from association with colonial government, to increase their traditional following or improve their modem opportunities."[3] Without the help of these "collaborators," Britain simply did not have the personnel or the military resources to administer its vast empire. In many instances, however, those indigenes outside this arrangement resented the privileges accorded the "collaborators." These resisters or "proto-nationalists" eventually emerged as the challengers to indirect rule.[4]

Indirect Rule: Administrators, Collaborators, and Resisters

Although Lord Frederick Lugard, high commissioner of Northern Nigeria from 1900 to 1906 and governor of Nigeria from 1912 to 1919, is often considered the father of British indirect rule, he derived many of his ideas from a Fijian precedent.[5] Largely the work of the colony's first residential governor, Sir Arthur Hamilton Gordon (1875-1880), and his colonial secretary, John Bates Thurston, indirect rule in Fiji placed administrative control of Fijians in the hands of the traditional chiefly elite. Sir Arthur found the chiefs willing to cooperate because they obtained what they wanted most--guaranteed status and protection from further loss of land to European settlers. As a result, after the islands became a British colony, approximately 83

percent of Fiji's land remained communally owned by Fijians under the control of the chiefly oligarchy. By using the chiefs to collect taxes in kind, Gordon balanced his budget and left what he judged traditional lines of authority intact. By 1940, five chiefs, nominated by the governor, sat on the advisory Legislative Council, and the triennial meeting of the Council of Chiefs exercised control of most issues affecting daily Fijian affairs. Under this arrangement, local political power depended on heredity in a stratified society.[6]

Those Fijians outside the limit of indirect rule, however, did not fare as well. Not only did lesser chiefs, commoners, and priests of the indigenous religion fail to accrue the political and economic benefits accorded to the chiefly collaborators, but they also found Fijian "custom" altered to conform with British concepts of "civilization."[7] In a series of incisive articles, anthropologist Martha Kaplan has persuasively argued that the British constructed Fijian custom to include their own notions of hierarchy, class, religion, and order. Those who conformed to the English model were making satisfactory progress toward "civilization," but those who openly resisted were "heathens," "terrorists," "subversives," "charlatans," and promoters of "disorder." According to Kaplan, "Even the most 'pragmatic' colonial administrators viewed Fiji and Fijians in terms of a system of cultural assumptions about the social evolutionary relations of the British and 'others' and the role of the British in creating order out of disorder."[8]

Whenever Fijians appeared to threaten "order," "custom," or indirect rule, they were apt to be dealt with harshly by the colonial establishment. For instance, in 1876, when the "heathen" chief Na Bisiki resisted the encroachments of British administration and missionaries in the interior of Viti Levu, Gordon labeled him "a most determined scoundrel" and worked vigorously to put down his "rebellion." Since Na Bisiki represented a direct threat to indirect rule, he could not be permitted to elude punishment, and after his subsequent capture he was killed before he could stand trial.[9]

Not long afterward, in 1877, the British encountered what they perceived to be an even greater threat to colonial order in the person of the oracle priest Navosavakadua. Prophesying the primacy and return of Fijian gods, working miracles, and promising his followers immortality *(Tuka)*, he claimed that "all existing affairs would be reversed; the whites would serve the natives, the chiefs would become the common people and the latter would take their places." Because Navosavakadua directly challenged the very social and religious tenets on which indirect rule depended, colonial officials and the chiefly elite considered him more dangerous than Na Bisiki. As a result, colonial administrators had the colorful priest arrested, tried for disturbing the peace, and deported to a remote island. Although

Navosavakadua was permitted to return to Viti Levu in 1885, two years later he was exiled by executive order to Rotuma, where he spent the remainder of his life.[10]

But Gordon faced one major problem. In addition to protecting the Fijians from exploitation by white settlers, he had to make Fiji, a colony that Britain had annexed very reluctantly, economically viable. In attempting to do so, he made a decision that was to have profound consequences in the history of Fiji. To entice the Australian-based Colonial Sugar Company to invest in the colony, the governor began the introduction of indentured workers from India as a source of cheap and reliable labor in the cane fields. Although the indenture system officially ended in 1920, many Indians chose to remain in Fiji. In 1921 they comprised 38 percent of the population and were increasing at a more rapid rate than indigenous Fijians. Largely left out of indirect rule but vital to Fiji's economy, the Fiji Indians began to demand equal political status with the colony's European population. Also in 1921, influenced by poor world economic conditions following World War I, cane workers staged a six-month strike for higher wages that was marred by violence. Although the strike failed, the Fiji Indians continued to agitate. During the 1930s, they were pressing for a common electoral roll rather than the existing communal system of franchise in which Europeans, Indians, and Fijians voted separately to select a designated number of representatives to the Legislative Council.[11]

Meanwhile, the Fijian commoners, constrained by the traditions of their rural, village-oriented society, began to slip behind the Indians both politically and economically. Consequently, not all of Gordon's successors as governor were as enthusiastic about his system of indirect rule. Several of these colonial officers, most notably Governor Everard im Thurn (1904-1908), believed that strict adherence to the Fijian communal system would lead to a permanently stratified society in which a tiny elite ruling class would enjoy most of the political and economic benefits. During his term as governor, im Thurn attempted to enact a series of reforms designed to permit Fijian commoners to relax communal restrictions. Much to his chagrin, however, im Thurn was unable to overcome the determined opposition of Gordon, now a member of the House of Lords, and the chiefly elite.[12]

Similarly, in 1922 Acting Governor T. E. Fell, recognizing the dilemma of reconciling tradition and modernization, suggested that the colonial administration initiate a policy of encouraging "individualism" among Fijians. Fell hoped that providing the Fijians with a better education while gradually relaxing communal obligations would enable commoners to develop the skills they needed to survive in the twentieth century. During the 1920s and 1930s, several colonial governors followed policies designed to promote individualism, but these initiatives never achieved their goals. Realizing that

the relaxation of traditional bonds would weaken their authority, the chiefs vigorously opposed this new trend on the grounds that it was a "socially disruptive" Western concept that was alien to the Fijian way of life. By the time Sir Harry Luke arrived in Fiji in 1938, the chiefs were winning, and the colonial administration, worried by the demands of the Indians, was opting for the preservation of the status quo.[13]

In an attempt to ascertain conditions in Fiji on the eve of the Pacific War, United States Army Intelligence assigned Captain John W. Coulter to reconnoiter Viti Levu. Although Coulter lacked a deep understanding of the complex social and political relationships in Fiji, he immediately observed that "the Fijians could not by themselves hold their own in economic and political competition with the Indians." Coulter further reported that Britain governed Fiji

> in part by indirect rule of the native[s] as the native chiefs, supported by the British Colonial Government, exercise some of their traditional native power. It is in line with the most recent developments in native administration. The administrative body uses in part the native political structure to carry out the routine of Government. It takes natives with high titles and gives them governmental responsibility and salary. It recognizes village and district native gatherings for discussion, the traditional way of Fijian native Government.[14]

Consequently, as Europe entered World War II, life in Fiji revolved around relations among and within four major entities--Fijians, Indians, European residents, and the colonial officials. Gordon's system of indirect rule was largely intact, and Fijians retained a village-oriented, communal society based on loyalty to hereditary chiefs. The chiefly oligarchy controlled local Fijian affairs, served as provincial and district officials, and was generally well disposed to the British crown.[15] For the most part, the chiefs and the Europeans cooperated with the colonial government because of their fear of the Indians, whose demands were becoming increasingly strident. The only Fijian to challenge this relatively smooth-functioning collaborative system between 1913 and 1940 was Apolosi Nawai.

Apolosi Nawai: The Man from Ra

Apolosi--or the "Man from Ra," as he liked to refer to himself--was, according to his biographer, Timothy J. Macnaught, Fiji's "underworld hero." A man of ordinary Fijian appearance, he was able to threaten the dominance of the chiefly oligarchy by powerful oratory and sheer force of

personality. "Once he opened his mouth," recalled a Fijian villager, "your mind was no longer your own." Apolosi received an elementary education, thorough familiarity with the Bible, and practical training as a carpenter at a mission school; but he never became wholly Westernized, and he retained a deep understanding of ancient Fijian myths, traditions, and gods. He was a man with feet in both the traditional Fijian and Western worlds who was able to touch the hearts of commoners in ways that the chiefs could not. Like Marcus Garvey, the African-American leader of the 1920s, he appealed to ethnic pride and told his countrymen that they did not have to accept the crumbs allotted them by the colonial government, the European settlers, and their hereditary chiefs. As Macnaught has written, Apolosi "permanently injected the rhetoric of Fijian politics with a demand for *toro cake,* that is, progress, improvement, and a better return for their labor and resources."[16]

While working as a carpenter building a Methodist church in 1912, Apolosi devised a plan for establishing the Viti Company, a Fijian-owned enterprise designed to rival European domination of the banana trade. By eliminating European and Chinese middlemen, asserted Apolosi, Fijian commoners could keep their rightful share of the profit. Why should Fijians be content with a trifling pittance of the returns that whites reaped from the exploitation of the colony's land and labor? According to Macnaught, "these were powerful themes that spoke to a people's pride, challenged their submissiveness to the whole framework of their lives, and compounded their anxiety about the future of the race."[17]

The initial success of the Viti Company and the enthusiastic support it received from commoners evoked deep concern among those involved in collaborative indirect rule. As Apolosi's popularity increased, he began to act, speak, and receive honors in a manner customarily accorded to the chiefly elite. By 1915, Apolosi and the Viti Company were being accused of plotting a "heathen" rebellion that would inevitably degenerate into a racial war. A lack of historical evidence makes it impossible to determine Apolosi's exact intentions, but in May 1915 he was tried and sentenced to eighteen months at hard labor for resisting arrest on a charge of embezzling Viti Company funds.[18]

Much to the dismay of the colonial establishment, imprisonment only increased Apolosi's self-confidence and enhanced his standing as a popular hero among Fijian commoners. After his release, he continued to promote the Viti Company, but his vision far exceeded his business acumen. With hopeless record keeping and mounting debts, the company approached bankruptcy in 1917. At the same time, Apolosi's high-living style of life, which included expensive clothes, a bevy of adoring female attendants, a

large entourage including personal bodyguards, and frequent drinking bouts, was grist for the mill of his enemies. Hence, in November 1917, Governor Ernest B. S. Escott, on executive authority, exiled the Fijian entrepreneur to Rotuma for a term of seven years on the basis of charges that his biographer considers almost certainly invented by his opponents and the government. Escott acted on the authority granted to the governor of Fiji by the Disaffected Natives Act of 1887, which empowered him to confine any "native" he deemed "disaffected to the Queen [i.e., the crown] or otherwise dangerous to the peace or good order of the colony" for a period up to ten years.[19]

During the years immediately following his release in December 1924, Apolosi lived in relative obscurity, the Viti Company now defunct. In 1929, however, he announced the founding of a new religious sect, the Church of the New Era, which was a syncretism of Christianity and traditional Fijian mythology. The millennial belief of the new faith included the tenets that Apolosi's brother, Josevata, was the "Vicar of Jesus Christ" on earth and that Apolosi himself would one day rule the universe as "King of the World." Meanwhile, the Man from Ra's behavior became, by British standards, ever more eccentric as he took a twelfth wife, frequently offered prophecies based on his dreams, and ostentatiously affected the demeanor of a chief. As his popularity increased among commoners, Apolosi once again posed a threat to the status quo and to indirect rule. As a result, in January 1930 Governor A. G. Murchison Fletcher ordered him confined to Rotuma for an additional ten years. From this remote northern island, Apolosi did his best to keep his new movement alive, and the colonial establishment continued to view him as a serious threat to the tranquility of the islands.[20]

Apolosi versus Governor Sir Harry Luke

The prospect of Apolosi's release in 1940 troubled the reigning British governor in Fiji, Sir Harry Luke. With the Fiji Indians becoming more assertive in their demands for a common roll and higher wages from the Colonial Sugar Company and the Europeans, anxious to maintain their privileged status, complaining that Luke had "no grip on the native population," the last thing that he needed was problems with a Fijian proto-nationalist.[21] To make matters worse, the leader of the chiefly oligarchy, Oxford-educated Ratu Lala Sukuna, was openly critical of the government's recent policy of subordinating local Fijian leaders to British district commissioners and hinted that Fijians might form an alliance with Indian political leaders.[22] Meanwhile, with the outbreak of war in Europe, Sir Harry, who was fluent

in French, became increasingly involved in the struggle to align France's Pacific possessions with General Charles de Gaulle's Free French movement rather than the Vichy government.[23] As a result, Europeans now accused Luke of neglecting his duties in Fiji.

When Sir Harry Luke had arrived in Fiji in 1938 at the age of fifty-three, he epitomized the best and worst features of the British colonial service. A graduate of Eton and Trinity College, Oxford, he was a cultured, literary, and cosmopolitan civil servant who had written widely of his experiences in the colonies. During his career he had served in Africa, Palestine, Cyprus, and, for eight years before his assignment in Fiji, as lieutenant-governor of Malta. Sir Harry was well known for his generosity and lavish entertainment, and his refusal to suffer fools lightly. He was particularly unimpressed by the European residents of Fiji, whom he considered "unpolished and uncultured Antipodeans," and was almost openly contemptuous of them. Without the slightest doubt about the superiority of British culture and the righteousness of British imperial policy, he enjoyed the role of governor and gloried in the uniforms, pomp, and ceremony of his office. A contemporary journalist writing in *Pacific Islands Monthly* during 1942 alleged that the Colonial Office had sent Luke to Fiji because he was "tired after many long years of service in the restless Mediterranean area."[24] Given his somewhat pompous personality and the conditions in Fiji in 1939, Luke had little sympathy for "rabble-rousers" such as Apolosi Nawai.

In July 1939, in anticipation of Apolosi's impending release, Luke interviewed the Fijian leader for the first time during a brief visit to Rotuma. In their conversation, Apolosi, who estimated his own age to be "about sixty-one," told Sir Harry: "I realize that I have done wrong. I am sorry for the past and in the future I wish to make reparation and to obey the laws of the Government until the time of my death." Luke replied that he was pleased to learn of Apolosi's resolution and advised him to make this statement publicly on his return from exile and to disavow leadership of the New Era movement. At the conclusion of the interview, Luke informed the Man from Ra: "I am glad to have had this talk with you. You must understand definitely that unless you keep your word to abstain from all your previous activities, it will not be possible for you to remain in Fiji." Apolosi responded, "I am old now and I see with different eyes; and I have no wish to be as of yore."

On his return to the colonial capital in Suva, Sir Harry sought to prepare the way for Apolosi's return by publishing his version of the interview in the official government newspaper, *Na Mata.*[25] Later, in his memoirs, Luke recalled that Apolosi had impressed him as "a quick witted rogue with a sense of humor, possibly capable at times of self-deception but patently untrustworthy."[26]

Before consulting with London, Luke directed all colonial service district commissioners in Fiji to take measures to prevent any public meeting of Fijians to welcome the return of Apolosi. Writing for the governor on 11 November 1939, the colonial secretary informed his subordinates that "it is his Excellency's wish that this [New Era] movement . . . be suppressed."[27] Six weeks later, on 23 December, Sir Harry cabled the secretary of state for colonies in London, Malcolm MacDonald, apprising him of Apolosi's impending release and requesting permission to control the charismatic Fijian's movements under the auspices of existing wartime regulations. Specifically, Apolosi would be required to (1) remain within two miles of his residence in Suva, (2) report to a designated police station daily between the hours of 9:00 A.M. and 4:00 P.M., (3) refrain from addressing any assembly of over ten persons, and (4) not receive more than five visitors per day.[28] Such steps were necessary, explained Luke, "to avoid probable agitation among Fijians which would be most undesirable at the present time."[29]

Luke versus the Colonial Office

In London, however, the Colonial Office was beset with problems of its own. Although by 1914 Britain was already finding it increasingly difficult to administer its extensive empire, World War I provided what John Gallagher has termed "a vast bargain basement for empire builders."[30] As a result, the British acquired new colonial responsibilities in Africa, Asia, and the Middle East. So onerous were these added burdens that, by the late 1930s, Malcolm MacDonald was devoting approximately half of his time to Palestine alone. At the same time, the Great Depression had brought economic hardship to many of the colonies, and between 1935 and 1938 a series of strikes erupted in Britain's sugar-producing islands in the West Indies. These disturbances and a series of reports highly critical of health and economic conditions in the colonies revealed that many parts of the empire were not making satisfactory progress toward "civilization."[31] By the late 1930s, Britain's stated policy of preparing its charges for home rule seemed threatened throughout the empire by local discontent.

In 1940, Parliament passed the Development and Welfare Act, which provided several million pounds for developing the social, economic, and education resources of the colonies. This measure departed from the old tradition of requiring the colonies to be self-sufficient and committed Great Britain to the development of its empire. Nevertheless, within the colonial service the conflict between supporters of tradition and of reform that had marked the confrontation between Gordon and im Thurn still existed. Often, colonial governors in the field felt that they possessed a better under-

standing of "native affairs" than did bureaucrats in London. Conversely, whereas in the past the Colonial Office had largely allowed the governors to rule as they saw fit with little interference from home, now officials in London became determined to exercise a greater degree of direct supervision over internal affairs. The Colonial Office was particularly concerned about the effect that a policy promulgated in one colony might have on opinion within other colonies.[32]

The outbreak of World War II in Europe exacerbated the difficulties of the Colonial Office. By 1940, Britain had been at war for four months, but Hitler had not yet launched the blitzkrieg. Already stretched to the limit, the British government knew that it could not adequately defend Singapore, much less Fiji, a colony they considered of marginal strategic and economic importance.[33] At the same time, career civil servants in the Colonial Office realized that the beleaguered government of Neville Chamberlain might not last much longer and changes at the highest levels of the bureaucracy were in the offing. Similarly, senior officials in the Colonial Office were aware that the war would have a profound effect on the empire, but no one was quite sure what those changes would entail.

The first response of the Colonial Office to Luke's dispatch of 23 December, requesting permission to invoke wartime regulations to restrict Apolosi, was to misplace the file on the subject until 17 January 1940. This delay was unfortunate because Apolosi's official release date was 13 January, and Luke had to proceed without having received any response from his superiors to his original telegram. When bureaucrats in London finally located the file, the head of the Pacific department of the Colonial Office, A. B. Acheson, argued vigorously that Apolosi's case had nothing to do with wartime regulations, which could be applied only when there was "evidence of association with the enemy." Since there was no question of any involvement between Apolosi and Germans or Italians, argued Acheson, Apolosi "falls clearly within the category of agitators who may be obnoxious to Colonial Governments, but against whom there is no evidence of enemy association and whose actions can be quite well dealt with under existing legislation [i.e., the Disaffected Natives Act of 1877]."[34] Agreeing with Acheson, Malcolm MacDonald cabled Luke on 19 January, instructing him not to take any action on Apolosi under wartime emergency regulations.[35]

Three days later, Luke replied that, since he had received no reply to his telegram of 23 December, he had already used the wartime measures to restrict Apolosi's movements. Without disputing the Colonial Office's 'contention that Apolosi was not conspiring with any of Britain's enemies, Luke argued that action taken against him under the old Disaffected Natives Act would "undoubtedly lead to a considerable revival of feeling in his favor

especially among the younger element."[36] Luke's somewhat imperious response clearly irritated the more progressive element at the Colonial Office. Assistant Secretary of State J. A. Calder forcefully argued that since "advancing years had diminished the vitality and courage" that Apolosi had once demonstrated, he was "entitled to his freedom until there is some evidence he is abusing it."[37] MacDonald agreed with Calder and, on 30 January, informed Fiji's governor that wartime regulations "do not fit" and were not to be used for "political motives."[38]

Refusing to relinquish meekly what he deemed his prerogative as governor, Luke continued to press his case. Sir Harry now informed the Colonial Office that he and all his senior officers had little doubt that, unless Apolosi were closely supervised, there would be "acts of lawlessness and subversion." Luke also asserted that Apolosi might disrupt the colony's sugar and gold-mining industries, which he considered of "essential importance" to the defense of the empire. Under the Disaffected Natives Act, continued Luke, he could only exile Apolosi, who was still in Rotuma awaiting transportation to Suva, and he feared that an attempt to deport him as soon as he arrived would surely result in unrest and bloodshed. Worse yet, Apolosi's followers among the miners might "make common cause with the malcontent Indian [sugar] growers."[39] Since Apolosi was also accused of being an anti-Indian racist, Sir Harry's reasoning on this issue is difficult to follow, but his warning alerted the Colonial Office to the grave threat to indirect rule that an alliance between Fijian commoners and Indians would pose.

In London, the Apolosi case provoked a three-way difference of opinion within the Colonial Office. The old guard, led by Deputy Under Secretary of State Sir John Shuckburgh, a close associate of Winston Churchill, maintained that Apolosi was a dangerous "pseudo-prophet who is apt to arise from time to time among primitive people." Since Apolosi's behavior might become "prejudicial to local defense arrangements," Luke was more or less justified in limiting the freedom of this man who was "clearly three-quarters impostor."[40] A second line of reasoning, proposed by A. B. Acheson, basically agreed with Shuckburgh's assessment of Apolosi but was uncomfortable with violating the Fijian leader's civil rights without proper legal justification. Acheson considered Apolosi "not a normal human being at all . . . an unscrupulous adventurer who preys upon the superstition and ignorance of the Fijians." He concurred with Luke's proposal that Apolosi be restricted in movement and residence, but realizing that "we are dealing with a situation that cannot arise in this country," he believed that a legal justification had to be devised.[41] A third position, advocated by J. A. Calder, argued that it was unethical to condemn a man for what he might do. Apolosi had served his sentence and was therefore entitled to his freedom unless he violated an

existing law. To Acheson's quest for legal justification for restricting Apolosi, Calder responded that "it is a sorry commentary on our rule in Fiji if this elderly religious fanatic cannot be released without the terrible consequences imagined."[42]

But while Colonial Office bureaucrats disputed policy in Fiji, events in Europe overshadowed interest in the small Pacific colony. On 9 April, Hitler invaded Norway; on 10 May, the Germans crossed into the Netherlands; and by 26 May, the British army was trapped at Dunkirk. On 11 May, Neville Chamberlain resigned and was succeeded by Winston Churchill, whose desire to preserve the status quo in the empire was well known in the Colonial Office. Shortly thereafter, Churchill replaced Malcolm MacDonald with Lord Lloyd, and in all this turmoil the Colonial Office forgot about Fiji. As a result, Sir Harry Luke's restrictions on Apolosi remained in effect as a fait accompli.

Apolosi's Brief Release

Apolosi Nawai arrived in Suva on 14 March 1940, but his freedom was to last for only two months. Unable or unwilling to conform to the strict regimen of Luke's regulations, he failed to appear at police headquarters before the 4:00 P.M. deadline on ten occasions between 14 March and 27 April (although he did eventually appear for all but two of the appointments). Similarly, according to a report by Inspector W. J. G. Holland of the Fiji Criminal Investigation Department, Apolosi ventured outside the bounds of his restriction on eighteen separate occasions. Under the heading "misconduct," Holland listed several incidents in which Apolosi allegedly engaged in public drunkenness, had sexual intercourse with numerous women, and provided alcohol to "natives of various nationalities." Of all the charges in Holland's report, which Luke eventually forwarded to the Colonial Office, the only serious incident involved the allegation that Apolosi had attempted to molest his twelve-year-old niece.[43] Although Apolosi was never permitted to defend himself against any of the accusations against him and probably never knew of their existence, Luke was now determined to rid himself of the man he now labeled as "a Pacific Island Rasputin."[44]

Perhaps the most politically damning accusations against Apolosi were sworn statements by two Fijian informers who charged him with making seditious statements. According to these witnesses, Apolosi appeared at a clandestine meeting of approximately forty Fijians at about midnight during late May 1940 where he received twenty whale's teeth *(tabua),* an honor usually reserved for chiefs. As the leader of the New Era movement, Apolosi allegedly told the party: "It is very good of you to come. The Government is

unable to do anything to me at the present time. I have lit a fire which is burning throughout the world. The fire will continue until the month of March next year, when I will sit on my throne as King and rule everything and every one whether you are for me or against me."[45]

Six days later, Luke ordered Apolosi to be returned to Rotuma for a period of ten years under the provisions of the Disaffected Natives Act of 1887. Luke explained to Lord Lloyd that he had taken action because "Apolosi has, since his return from Rotuma, consistently led a life of subversive intrigue and has acted in flagrant disregard of the terms of his release." Not surprisingly, the governor received the unanimous approval of the Fijian members of the Legislative Council, all of whom were chiefs. In his final word on the case, Luke opined that, during Apolosi's two months in Suva, he had demonstrated "his quasi-religious influence over his dupes, his utter lack of scruple, his abnormally developed and sustained sexual appetite and the ease with which he secures the victims of his lust, his eloquence and faith in himself, and his persistence in evil doing."[46] On 1 June, the only Fijian that the local establishment considered a threat to the collaborative arrangement between the crown and the chiefly hierarchy was sent into exile without trial on charges that would never have held up in a British court.

In the end, Apolosi's last exile proved to be a life sentence. After the outbreak of the war in the Pacific in December 1941, Luke, fearing that the Fijian "prophet" might become a Japanese fifth columnist, interned him in New Zealand until the end of the hostilities. Once the Japanese threat had passed in 1944, however, Apolosi was allowed to return to the remote Fijian island of Yacata. Shortly before Apolosi's arrival in the Fijian Islands, paramount chief Ratu Lala Sukuma, a statesman of enormous prestige, in part because of his services to the British crown during the two world wars, wrote to the colonial secretary in Suva stating that "Native Authorities" were "strongly opposed" to granting Apolosi any freedom whatsoever.[47] A year later, Sukuna also recommended that Apolosi be transferred to an even more isolated island where ships rarely visited.[48] But in 1946, before any action could be taken on Sukuna's request, Apolosi died in a hospital on the island of Taveuni after a brief illness.[49] At last, the "Man from Ra" would threaten indirect rule no more.

Conclusion

It is perhaps too early to place Apolosi Nawai in a definitive context within the broad history of Oceania or of imperialism. To Timothy Macnaught, Apolosi was "more corrupt entrepreneur than millenarian prophet." Never-

theless, argues Macnaught, "he was a great patriot tapping the roots of Fijian pride by urging the people and chiefs to cut across the parochial limitations of their existing institutions."[50] To anthropologist Anthony B. Van Fossen, Apolosi represented the opposition of the traditional Fijian priest class to the chiefly elite as well as to Europeans and Indians.[51] To Martha Kaplan and John D. Kelly, Apolosi represents a contestant for power in the continuing "dialogue about chiefship and custom, labor and profit, citizenship, and, above all, loyalty and disaffection." To colonial officials, write Kaplan and Kelly, he was "a product of their fear of disaffection and its challenges to basic assumptions of the colonizing project."[52]

In viewing Apolosi from the imperial perspective, however, it is clear that colonial officials were on the horns of a dilemma. On one hand, they still based their ideals of "progress" and "civilization" on their own cultural assumptions regarding order, religion, and hierarchy. Colonial bureaucrats in London and Fiji, regardless of any other opinions they might have had, regarded Apolosi variously as a "rogue," "pseudo-prophet," "impostor," "unscrupulous adventurer," "fanatic," "Rasputin," "not a normal human being," and a "rabble-rouser" who promoted "lawlessness" and "subversion." Those who followed him were "primitive people" or "dupes." On the other hand, British definitions of order also included basic ideals of fairness and the rule of law. When the issue of Apolosi's deportation arose in 1940, some officials were content to see the cause of progress served by simply removing a "disaffected native," but others resisted the tactic of using dubious or illegal means to do so. The latter officials, like Governors im Thurn and Fell, realized that Gordon's scheme of indirect rule was helping to insure that the Fijian commoners could not develop the skills they needed to be successful in the capitalist environment of the twentieth century.[53]

By issuing Apolosi's last sentence in 1940, Luke not only perpetuated indirect rule, but also helped insure that the lofty goals of British colonialism would not be achieved. Instead, the objective of Gordon's system had become simply maintaining "order" by perpetuating the power of established elites. Those who benefited most--chiefs, Europeans, and colonial administrators--united to fight the threat to the status quo that Apolosi had posed when he arrived from Rotuma in 1940. In short, none of those involved in the collaborative system wanted much to change. Left out of this arrangement were the Fijian commoners and the Indians, who were separated from each other by a vast gulf of ethnic mistrust. Consequently, as Britain entered the war that would eventually result in its withdrawal east of Suez, indirect rule remained entrenched in Fiji.

In placing Fiji within the context of empire, the last exile of Apolosi Nawai generally conforms with the Robinson and Gallagher analysis.

Although British expansion into the South Pacific had little to do with free trade, and Robinson and Gallagher perhaps underestimated the role of humanitarianism, Great Britain ruled Fiji indirectly though their "collaborators," the chiefly elite. In fact, indirect rule in Fiji can be regarded as one of the most successfully operated collaborative relationships in the history of the British Empire. Apolosi was a "proto-nationalist" not because he represented an appeal to Western concepts of nationalism (which he did not), but because he threatened to disrupt this collaborative system. To Luke, he seemed a dangerous obstacle to "order," and to the chiefs, he was a rival in the contest for power. From the perspective of the Colonial Office in London, however, he appeared to differ little from "proto-nationalists" and resisters elsewhere in the empire.

In a perceptive essay originally appearing in 1972, Ronald Robinson argued that the main objective of British indirect rule between the two world wars was to prevent colonial alliances between "urban malcontents" and "populist movements."[54] In Fiji, the Indian community was organizing and threatening to disrupt the status quo. Among Fijians, Apolosi Nawai represented the populist factor in this equation and therefore had to be eliminated. Because of the collaborative arrangement in place and his unorthodox life-style, he could not be absorbed into the system. In 1930, on the eve of his second exile, Apolosi lamented with great intuition: "Had I been given a position in the Government there would have been no trouble. I am cleverer and more ingenious than any other Fijian. . . . I should have done a lot of good for the Fijians."[55] But indirect rule left no room for him within the colonial system.

NOTES

1. Apolosi died in exile after serving six years of his last ten-year sentence.

2. Ronald Robinson and John Gallagher with Alice Denny, *Africa and the Victorians: The Official Mind of Imperialism* (London: Macmillan, 1961). See also Ronald Robinson, "Non-European Foundations of Economic Imperialism: Sketch for a Theory of Collaboration," in *The Robinson and Gallagher Controversy,* ed. W. Roger Louis (New York: New Viewpoints, 1976), 53-151; and John Gallagher, *The Decline, Revival, and Full of the British Empire: The Ford Lectures and Other Essays* (New York: Cambridge University Press, 1982).

3. Robinson, "Non-European Foundations," 143.

4. It is perhaps unfortunate that Robinson and Gallagher used the word "collaborator," a term that carries a somewhat negative connotation. During World War II, a collaborator was one who cooperated with the enemy, usually for personal gain. This is not necessarily

the meaning intended by Robinson and Gallagher. Their collaborators were indigenes who believed that cooperation with the imperial authorites was the best way of promoting economic progress while, at the same time, insuring their own privileged status. Robinson and Gallagher did not consider the British to be the enemy in the same sense that the Nazis were during World War II.

5. D. K. Fieldhouse, *The Colonial Empires: A Comparative Survey from the Eighteenth Century* (New York: Delacorte Press, 1967), 298-299.

6 R. W. Robson, ed., *The Pacific Islands Yearbook,* wartime edition (Sydney: Pacific Publications, 1944), 180-181. On Sir Arthur Gordon, see J. K. Chapman, *The Career of Arthur Hamilton Cordon: First Lord Stanmore, 1829-1912* (Toronto: University of Toronto Press, 1964); Deryck Scarr, *Fragments of Empire: History of the Western Pacific High Commission* (Honolulu: University of Hawai'i Press, 1968), 24-52; C. Hartley Grattan, *The Southwest Pacific to 1900* (Ann Arbor: University of Michigan Press, 1963), 477-482, 487-488. For a general history of Fiji, see Deryck Scarr, *Fiji: A Short History* (Lā'ie, Hawai'i: Institute for Polynesian Studies, 1984), and Brij V. Lal, *Broken Waves: A History of the Fiji Islands in the Twentieth Century* (Honolulu: University of Hawai'i Press, 1992).

7. This theory was first introduced by Peter France, in *The Charter of the Land: Custom and Colonization in Fiji* (Melbourne: Oxford University Press, 1969), and J. R. Clammer, in *Literacy and Social Change: A Case Study of Fiji* (Leiden: Brill, 1976). See also Tony Chapelle, "Customary Land Tenure in Fiji: Old Truths and Middle Aged Myths," *Journal of the Polynesian Society* 78 (Spring 1978): 71-88.

8. Martha Kaplan, "The Dangerous and Disaffected Native in Fiji: British Colonial Constructions of the *Tuka* Movement," *Social Analysts* 26 (December 1989): 22-45; Kaplan, "*Luve Ni Wai* as the British Saw It: Constructions of Custom and Disorder in Colonial Fiji," *Ethnohistory* 36 (Fall 1989): 349-371; Kaplan, "Meaning, Agency, and Colonial History: Navosavakadua and the *Tuka* Movement in Fiji," *American Ethnologist* 17 (February 1990): 3-22; Kaplan, "Christianity, People of the Land, and Chiefs in Fiji," in *Christianity in Oceania: Ethnographic Perspectives,* ed. John Barker (Lanham, Md.: University Press of America, 1990), 127-147; Kaplan and John D. Kelly, "Rethinking Resistance: Dialogics of Disaffection in Colonial Fiji," *American Ethnologist* 21 (February 1993): 123-151; and Anthony B. Van Fossen, "Priests, Aristocrats, and Millennialism in Fiji," *Mankind* 16 (December 1986): 158-166.

9. Kaplan, "Dangerous and Disaffected Native," 31-34. Na Bisiki died during an escape attempt. The exact circumstances surrounding his death are unclear.

10. Kaplan, "Meaning, Agency, and Colonial History," 9; Kaplan, "Dangerous and Disaffected Native," 34-38; Kaplan, "Meaning, Agency, and Colonial History," 3-22; Van Fossen, "Priests," 161-162.

11. According to the constitution of 1937, which was in effect when Apolosi was exiled in 1940, the Legislative Council, which legally had only advisory powers, consisted of thirty-one members--sixteen nominated by the governor and fifteen "unofficial" members. The unofficial members included five Europeans (three elected by Europeans and two nominated by the governor), five Fijians (all nominated by the governor from a list submitted

by the Council of Chiefs), and five Indians (three elected by Indians and two nominated by the governor). Robson, *Pacific Islands,* 180. On the Fiji Indians, see K. L. Gillion, *The Fiji Indians: Challenge to European Dominance, 1920-1946* (Canberra: Australian National University Press, 1977); Robert Norton, *Race and Politics in Fiji* (New York: St. Martin's Press, 1977); and John D. Kelly, *The Politics of Virtue: Hinduism, Sexuality, and Counter-colonial Discourse in Fiji* (Chicago: University of Chicago Press, 1991).

12. Lal, *Broken Waves,* 17-33; Kaplan and Kelly, "Rethinking Resistance," 137.

13. Lal, *Broken Waves,* 65-74.

14. "Economic Estimate, the Colony of Fiji, November-December 1940," 22 May 1941, Division of Far Eastern Affairs, U.S. Department of State, RG 59, U.S. National Archives, Washington, D.C.

15. C. Hartley Grattan, *The Southwest Pacific since 1900* (Ann Arbor: University of Michigan Press, 1963), 388-389; "Indians vs Fijians," *Pacific Islands Monthly* 11 (August 1939): 34-35.

16. Timothy J. Macnaught, *The Fijian Colonial Experience: A Study of the Neotraditional Order under British Rule prior to World War II* (Canberra: Australian National University Press, 1982), 87, 75-92; and Macnaught, "Apolosi Nawai," in *More Pacific Islands Portraits,* ed. Deryck Scarr (Canberra: Australian National University Press, 1978), 173-192.

17. Macnaught, *Fijian Colonial Experience,* 78-79.

18. Ibid., 80-85; J. L. V. Sukuna to Secretary for Native Affairs, 12 March 1917, in Deryck Scarr, ed., *The Three-Legged Stool: Selected Writing of Ratu Sir Lala Sukuna* (London: Macmillan, 1983), 51-58.

19. Macnaught, "Apolosi Nawai," 182-186; Lal, *Broken Waves,* 48-54; "To Provide for the Confining of Disaffected and Dangerous Natives to Particular Localities in Fiji, 1887," 11 October 1887, Public Records Office, London (hereafter PRO), CO 84/2. This law was first used to deport Navosavakadua.

20. Macnaught, "Apolosi Nawai," 186-192; Kaplan and Kelly, "Rethinking Resistance," 136-138; Van Fossen, "Priests," 162-164.

21. Sir Philip Mitchell, Diary, 4 July 1942, Mitchell Mss, Rhodes House, Oxford; "Fiji Indians and the CSR Co.," *Pacific Islands Monthly* 11 (15 March 1940): 65; "Viti Cost," *Pacific Islands Monthly* 12 (September 1941): 8; "Sir Harry Luke Retires," *Pacific Islands Monthly* 12 (July 1942): 8-9. See also Gillion, *Fiji Indians,* 173-164; Robert Norton, "Colonial Fiji: Ethnic Divisions and Elite Conciliation," in *Politics in Fiji,* ed. Brij V. Lal (Sydney: Allen and Unwin, 1986), 52-69; and Scarr, *Short History,* 123-144.

22. Statement in Legislative Council by J. L. V. Sukuna, 18 December 1940, in Scarr, *Three-Legged Stool,* 265-267; Sir Philip Mitchell to Secretary of State of the Colonies, 7 September 1942, PRO, CO 83/238/12.

23. "Luke Retires," 8-9.

24. Ibid.; Mitchell to Secretary of State of the Colonies, 7 August 1942, and Notes of Tafford Smith, 10 August 1942, PRO, CO 83/238/12; *Who's Who, 1968* (London: Adams and Charles Black Ltd., 1968), 1881-1882.

25. Luke to Malcolm MacDonald, 9 January 1940, PRO, CO 83/230/16.

26. Sir Harry Luke, *From a South Seas Diary, 1939-1942* (London: Nicholson and Watson, 1945), 122-123.

27. J. Craig to District Commissioners, 11 November 1939, PRO, CO 83/230/16.

28. Luke to MacDonald, 23 December 1939, PRO, CO 83/230/16.

29. Luke to MacDonald, 9 January 1940, PRO, CO 83/230/16.

30. Gallagher, *Decline,* 87.

31. David J. Morgan, *The Official History of Colonial Development* (Atlantic Highlands, N.J.: Humanities Press, 1980), xiv-xxix, 23-34.

32. Ibid. See also Brian Lapping, *End of Empire* (New York: St. Martin's Press, 1985), 14-16.

33. Although in 1919 Admiral Viscount Jellicoe described Fiji as New Zealand's "immediate outpost" in his grand scheme for imperial defense in the Pacific, neither Britain nor its Pacific dominions had the resources to garrison the colony until the late 1940s. Grattan, *Pacific since 1900,* 512; and Ian Hamill, *Strategic Illusion: The Singapore Strategy and the Defence of Australia and New Zealand, 1919-1942* (Singapore: Singapore University Press, 1981), 19-21.

34. Notes on Luke to MacDonald, 23 December 1939, PRO, CO 83/230/16.

35. MacDonald to Luke, 19 January 1940, PRO, CO 83/230/16.

36. Luke to MacDonald, 22 January 1940, PRO, CO 83/230/16.

37. Notes on Luke to MacDonald, 22 January 1940, PRO, CO 83/230/16.

38. MacDonald to Luke, 30 January 1940, PRO, CO 83/230/16.

39. Luke to MacDonald, 6 February 1940, PRO, CO 83/230/16.

40. Notes on Luke to MacDonald, 23 December 1939, by Sir John Shuckburgh, 19 January 1940, PRO, CO 83/230/16. Shuckburgh conceded, however, that it was "very doubtful" if wartime regulations actually justified Luke's actions.

41. Note on Apolosi Case by A. B. Acheson, 9 February 1940, PRO, CO 83/230/16.

42. Notes on Luke to MacDonald, 22 January and 9 February 1940, by J. A. Calder, PRO, CO 83/230/16.

43. W. J. G. Holland to Police Commissioner, Suva, 9 May 1940, PRO, CO 83/233/9.

44. Luke to Lord Lloyd, 4 June 1940, PRO, CO 83/233/9.

45. Sworn Statements of Informants, 26 May 1940, PRO, CO 83/233/9.

46. Luke to Lloyd, 4 June 1940, PRO, CO 83/233/9.

47. Sukuna to Colonial Secretary, 22 June 1944, in Scarr, *Three-Legged Stool,* 327; Macnaught, "Apolosi Nawai," 191-192. On Sukuna, see Deryck Scarr, *Ratu Sukuna: Soldier, Statesman, Man of Two Worlds* (London: Macmillan, 1980).

48. Sukuna to Colonial Secretary, 12 September 1945, in Scarr, *Three-Legged Stool,* 379.

49. Macnaught, "Apolosi Nawai," 192. Ironically, the war also was Luke's undoing. After running afoul of the American naval high command over a silly jurisdictional dispute on Canton Island, he was forced to resign from the colonial service. Between 1943 and 1946, he served as the chief representative of the British Council in the Caribbean. He died in 1969. "Luke Retires," 8-9; Sir Philip Mitchell, *African Afterthoughts* (London: Hutchinson, 1954), 209-211; Negley Farson, *Last Chance in Africa* (New York: Harcourt Brace and Co., 1950), 49-51.

50. Macnaught, *Fijian Colonial Experience,* 91.

51. Van Fossen, "Priests," 158-166.

52. Kaplan and Kelly, "Rethinking Resistance," 123-150. For an interesting discussion of Fijian historiography, see Nicholas Thomas, "Taking Sides: Fijian Dissent and Conservative History Writing," *Australian Historical Studies* 24 (October 1990): 239-251.

53. Nicholas Thomas raises this issue, stating "an over generalized notion that all Europeans in the Pacific were racist invaders hardly enables one to determine the ramifications in specific island nations of the colonial experience for the present." "Partial Texts: Representation, Colonialism, and Agency in Pacific History," *Journal of Pacific History* 25 (December 1990): 147.

54. Robinson, "Non-European Foundations," 144.

55. Macnaught, "Apolosi Nawai," 189.

REGIONAL DEMOGRAPHIC CHANGE IN CHUUK STATE, FEDERATED STATES OF MICRONESIA

L. J. Gorenflo
Argonne National Laboratory
Washington, D. C.

The islands currently composing Chuuk State in the Federated States of Micronesia have experienced considerable population change since the beginning of sustained contact with non-Micronesians in the late nineteenth century The following study examines the demographic evolution of this island group, exploring changes in the number of inhabitants and their geographic distribution. First, the foreign presence in the eastern Carolines and the demographic impacts of these outsiders are briefly summarized. Shifts in the regional arrangement of population are then described, focusing on data from censuses conducted between 1920 and 1989. Data on fertility, mortality, and migration provide insights on possible causes of population change. The application of selected spatial statistics to the geographic arrangement of population indicates a high degree of consistency in the distribution of people and the persistence of geographic subregions over time. The study closes by discussing sociocultural, economic, and ecological repercussions of the regional population change experienced in this multiisland state in the heart of Micronesia.

Introduction

MOST SOCIOCULTURAL SYSTEMS in Micronesia experienced major changes following contact with Europeans. One of the most widespread consequences of this interaction, and indeed one of the most far-reaching in terms of impacts on traditional cultures, was demographic change. For most of the area the story was remarkably similar. Shortly after the beginning of frequent contact with people from outside Oceania, a period of depopulation

Pacific Studies, Vol. 18, No. 3--September 1995

commenced--often due to diseases introduced by the outsiders to islanders with no previous exposure and hence no immunity. Eventually population decline ceased and the number of inhabitants began to grow, usually as a consequence of decreased mortality resulting from some combination of improved health care and acquired natural immunity to introduced illnesses (Taeuber 1963). With the exception of particularly isolated islands and atolls, the demographic history of most of Micronesia followed this pattern, the timing and degree of change varying between places. In the case of Chuuk State in the Federated States of Micronesia (FSM), the avoidance of sustained contact with outsiders until the late nineteenth century both delayed and reduced the depopulation that occurred (compared to other parts of Micronesia).[1] Following several decades of relatively constant total population during the first half of the 1900s, Chuuk State witnessed a period of steady demographic growth, with increasing proportions of the state population residing on certain islands. By 1989 Chuuk State contained more than three times the population recorded only fifty-four years earlier, with about 80 percent of the total concentrated in Chuuk Lagoon.

The following study is the fourth in a series that explores regional demographic development in the FSM (see Gorenflo and Levin 1991, 1992: Gorenflo 1993b). As in the previous three efforts, I begin with a brief overview of interaction between islanders and non-Micronesians, providing the background necessary to understand the demographic impacts of other societies on this group of islands. The study then summarizes demographic data by municipality, focusing primarily on nine censuses conducted between 1920 and 1989. An examination of available data on fertility, mortality, migration, and population structure provides clues to possible causes of demographic change. An examination of the geographic distribution of population with selected spatial statistics, in turn, measures changes in the regional arrangement of the population. Finally, I consider ecological, economic, and sociocultural repercussions of this demographic change--notably the challenge of incorporating growing numbers of people, many of them residing in Chuuk Lagoon, within a sustainable component of the FSM.

Non-Micronesians in Chuuk State and Their Demographic Impacts

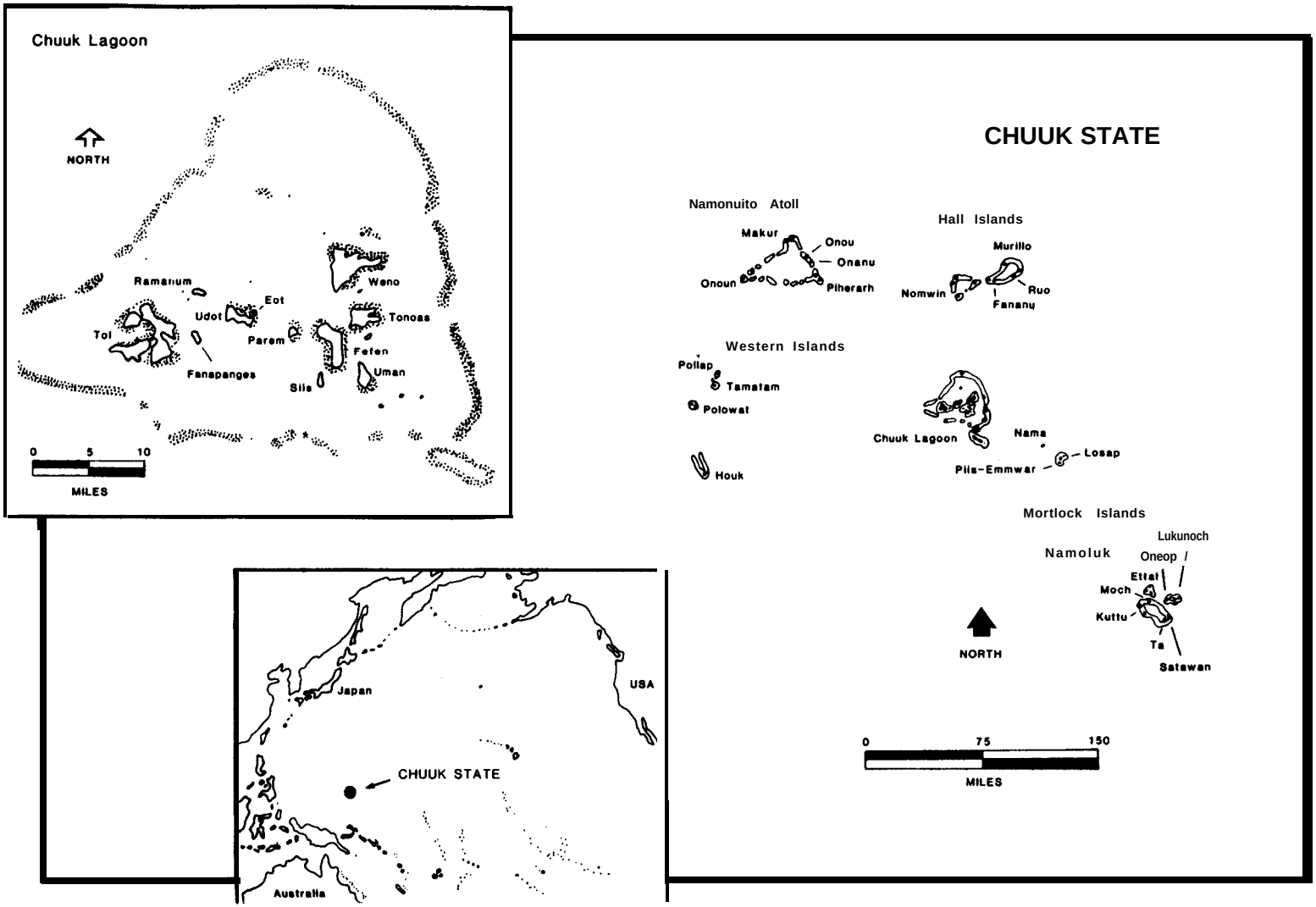
Chuuk State lies between 5° and 10° north latitude, and between 149° and 154° east longitude, in the eastern Caroline Islands (Bryan 1971). It consists of Chuuk Lagoon, a complex of nineteen volcanic islands and twenty-four coralline islands encircled by a barrier reef (Stark et al. 1958:5), and twelve coralline outer islands and atolls scattered across a broad expanse of the

Pacific (Figure 1). Geographically, Chuuk State comprises five main groups of island units: Chuuk Lagoon, the Western Islands, Namonuito Atoll, the Hall Islands, and the Mortlock Islands (with the Upper Mortlocks of Nama Island and Losap Atoll often split off from the remaining Lower Mortlocks). For the purpose of examining population change over time, I present data for eleven municipalities in Chuuk Lagoon and twenty-four municipalities in the outer islands--consistent with the reporting of demographic data for Chuuk State throughout the twentieth century.

People from Melanesia settled the eastern islands of Micronesia by about 1000 B.C., with the central Carolines occupied by groups subsequently migrating westward (see Hezel 1983:3; Kiste 1984:14; see also Gladwin 1970:4). Chuuk State's prehistory is best documented in Chuuk Lagoon, occupied as early as 500 B.C. (Parker and King 1981; see also King and Parker 1984). Following the initial settlement, an apparent temporal gap occurred, with little evidence of occupation between A.D. 500 and 1300 (Parker and King 1981:24-25). Beginning in the fourteenth century, human habitation in the lagoon resumed. Archaeological data indicate that people lived throughout the lagoon by the seventeenth or eighteenth centuries, with most inhabiting defensible inland villages--providing indirect evidence of the native conflicts that characterized much of the area during the late 1800s.

Although possibly seen by Saavedra in 1529 (Fischer and Fischer 1957: 19), the first certain sighting of Chuuk Lagoon was by the Spanish explorer Alonso de Arellano aboard the *San Lucas* in 1565 (Office of the Chief of Naval Operations 1944:18; Gladwin and Sarason 1953:39). Shortly after entering the lagoon, a flotilla of canoes from Tonoas Island surrounded and attacked the *San Lucas* (Hezel 1973:52; Hezel 1983:23-26)--the first of many recorded instances of hostile behavior against outsiders. Attacked a second time by islanders in canoes from Tol Island the following morning, Arellano decided to leave the waters of the lagoon, only to lose two members of a landing party to a native attack on Pollap Atoll one day later (Hezel 1983:25-26). For reasons unknown, cartographers included only Pollap Atoll (under the name *Los Martires*) on maps of the day; the exclusion of Chuuk Lagoon possibly helps to explain why no Western ships visited those islands for the next 250 years. With the exception of Murillo and Namonuito atolls, discovered in the mid-sixteenth century by Spanish explorers (Office of the Chief of Naval Operations 1944:17-18), the outer islands of Chuuk State remained unknown to the West until the final decade of the 1700s.

Despite its geographic prominence in the Caroline Islands, the people of Chuuk Lagoon apparently had no further interaction with non-Micronesians until the early nineteenth century. Contact resumed in 1814 when the brig


Chuuk Lagoon
NORTH
Ramanum
Eot
Udot
Weno
Tonoas
Tol
Parem
Fefen
Uman
Fanapanges
Siis
0 5 10
MILES
CHUUK STATE
Namonuito Atoll
Makur
Onou
Onanu
Onoun
Piherarh
Hall Islands
Murillo
Nomwin
Ruo
Fananu
Western Islands
Pollap
Tamatam
Polowat
Houk
Chuuk Lagoon
Nama
Losap
Piis-Emmwar
Mortlock Islands
Lukunoch
Namoluk
Oneop
Ettal
Moch
Kuttu
Ta
Satawan
NORTH
0 75 150
MILES
Japan
USA
CHUUK STATE
Australia

San Antonio, under the command of Manuel Dublon, entered the lagoon, though virtually no record remains of this brief visit (see Kotzebue 1967, 3: 116-117). Subsequent visits by more prominent explorers, including Duperrey (in 1824) and Lütke (in 1828), provided little more information on the lagoon and its inhabitants (see Duperrey 1825:vii-viii; Lütke 1835, 2:93-95, 328; Lesson 1839, 2:530-531). It was not until Dumont d'Urville's second voyage of exploration in the Pacific that the natural and cultural characteristics of Chuuk Lagoon received careful attention (see Dumont d'Urville 1843: 120-167, 309-328). Among other things, the accounts of Dumont d'Urville's crew indicate that as late as 1838 lagoon inhabitants showed virtually no indication of having interacted with people from outside Micronesia. This paucity of contact continued throughout the mid-nineteenth-century period of whaling in the central Pacific, probably due to the relative lack of natural resources, accessible female companionship, and highly productive whaling grounds compared to other parts of Micronesia (Hezel 1973:61-63), coupled with the bellicose reputation of lagoon residents. Traders similarly tended to avoid Chuuk Lagoon, with seasoned entrepreneurs such as Cheyne (in 1844) and Tetens (in 1868) running afoul of its residents and narrowly escaping with their lives (Cheyne 1852:126-128; Tetens 1958:90-92). Warnings about potential hostilities, such as those issued by Cheyne (1852:126-127; see also Doane 1881:210), undoubtedly served to reinforce avoidance of Chuuk Lagoon (Office of the Chief of Naval Operations 1944:18; Hezel 1983:256). Trading ventures did not resume in the lagoon until the 1870s, followed shortly thereafter by the first Christian mission inside the reef in 1879 (Office of the Chief of Naval Operations 1944:24; Hezel 1973:69, 72).

In contrast to the pattern of limited interaction with non-Micronesians that characterized Chuuk Lagoon, many of the outer islands apparently had contact relatively early with outsiders, despite a lack of resources that would attract Western ships. Although the French explorer Freycinet observed no Western material culture when he passed through the Western Islands in 1819, the eagerness with which islanders visited his ships, coupled with their immediate fear at the sight of cannons, indicated familiarity with Europeans (Freycinet 1829:69-72). In contrast to the single day his ship spent anchored outside the lagoon, Lütke spent three weeks in the Mortlock Islands, noting considerable evidence of European contact in the form of relatively widespread imported Western goods, a general knowledge of other Western material culture, and individuals who spoke several words of Spanish (Lütke 1835, 2:61-81, 89-108). Evidence for outside contact prior to 1825 also existed for Namonuito Atoll, in the form of Western materials and behavior (see Mertens 1830). The presence of non-Micronesian goods and customs

in certain outer islands probably was due to visits by whaling ships and traders to the islands themselves, as well as to interaction with islanders from places in Micronesia familiar with (or occupied by) Westerners (Office of the Chief of Naval Operations 1944:21; Hezel 1973:57). Nevertheless, compared to other parts of Micronesia the outer islands of Chuuk State established sustained contact with Westerners relatively late. Although traders knew of these islands (e.g., Shineberg 1971:320-321), the lack of resources usually led these entrepreneurs to focus their attention elsewhere. Missionaries also entered the outer islands relatively late, though the missions established on Lukunoch and Satawan atolls in 1874 were instrumental in gaining a foothold in Chuuk Lagoon five years later (Hezel 1983:258-259; Hezel 1991:122).

Spain claimed Chuuk State and the rest of the Caroline Islands when explorers under its flag encountered these islands in the sixteenth century. But the Spanish showed little interest in the Carolines until traders from other countries (particularly Germany) became active there in the second half of the 1800s. Although Spain attempted to administer the Carolines between 1886 and 1899, placing military personnel and administrators on selected high islands, it took virtually no notice of Chuuk State--once again possibly due to the violent reputation of lagoon residents (Gladwin and Sarason 1953:40; Fischer and Fischer 1957:172). German trading activities in Chuuk State continued throughout the brief period of Spanish presence in the Carolines, expanding during the 1880s with trading stations established on Losap, Lukunoch, Pollap, and Satawan atolls and in Chuuk Lagoon (Office of the Chief of Naval Operations 1944:22-23). Missionary activities also continued during this period, building on the ten mission stations in the lagoon established by 1884 (Office of the Chief of Naval Operations 1944:24-25).

Beyond limited economic and religious activities, the influence of non-Micronesians remained minimal throughout the periods of early contact and Spanish rule. Demographic effects similarly were limited. Relatively few foreigners resided in Chuuk State, with only one white man living in the lagoon as late as 1881 (Hezel 1973:51, 72). The diseases that decimated so much of Micronesia failed to gain an early foothold in Chuuk State, although evidence of introduced illnesses began to appear in the Lower Mortlocks, Losap Atoll, Nama Island, and Chuuk Lagoon by the late 1870s (Kubary 1880:235; Sturges 1880; see also Gladwin and Samson 1953:33; Severance 1976:54). Details on the demographic effects of these diseases unfortunately are lacking. For instance, the impact of smallpox is unknown though this malady appeared in Chuuk State during the late nineteenth century (Office of the Chief of Naval Operations 194493; see also Pelzer and

Hall 1946:12). Ultimately, the greatest demographic effects of Westerners in Chuuk State during the nineteenth century may well have been from the recruitment of labor. As early as the late 1860s, ships began taking individuals from Namonuito Atoll to work in the Northern Mariana Islands, though the figures of 604 individuals from Onoun Islet in 1867 (Driver 1976:19) and 230 individuals taken from another, unspecified islet in the atoll (Spoehr 1954:71) appear high. The notorious blackbirding ship *The Carl* also visited the area, taking 20 men from Satawan Atoll and another 27 from other parts of the Mortlocks to Fiji in 1872 (Sturges 1874:255; Hezel 1973:67-68, 1983: 238-239)--scarcely one year after a German ship had taken 80 men from the same island units to work on plantations in Samoa (Doane 1874:203-204; Finsch 1893:299-300).

The above impacts notwithstanding, the influences of non-Micronesians on Chuuk State population during the late nineteenth century probably paled in comparison to natural and cultural factors. The most important factor was typhoons. For example, the typhoon that struck Lukunoch Atoll (and probably the rest of the Lower Mortlocks; see Nason 1975b:123) in 1874 left many dead or starving, both from its initial impact and the subsequent disruption of the food supply (Logan 1881: 19; Alexander 1895:204). A typhoon that had struck the Western and Hall islands sometime earlier in the nineteenth century caused an unknown number of deaths, requiring the relocation of populations from these outer islands to Chuuk Lagoon while their home atolls recovered (Pelzer and Hall 1946:18, 27). The most important cultural factor affecting Chuuk State demography prior to the twentieth century was warfare. Conflicts between rival polities characterized most of the lagoon during the nineteenth century (Pelzer and Hall 1946: 15; Gladwin and Samson 1953:40-41; Fischer and Fischer 1957:81; Stark et al. 1958:7; Goodenough 1978:25, 206; Oliver 1989, 2:970). Warfare also occurred on the outer islands, particularly the Mortlocks. For example, warriors from Losap Atoll, aided by men and arms provided by the trader Alfred Tetens, allegedly decimated the population of Nama Island during the late 1860s (see Tetens 1958:94-96). A slightly later conflict in the Mortlock Islands about 1870, pitting residents of Ettal and Namoluk atolls against the other islanders in that group, eventually led to the deaths of between 28 and 38 individuals (Girschner 1912:171-172). Warfare even occurred within island units-such as the conflicts between inhabitants of certain islets within Lukunoch Atoll throughout much of the nineteenth century (Westwood 1905:92)--though its precise demographic impacts are unclear.[2]

Germany was one of the first nations from outside Micronesia to establish a commercial foothold in Chuuk State, with the main goal of exploiting the island group's economic potential (primarily through copra production)

(Gladwin and Samson 1953:42; Goodenough 1978:25; Peattie 1988:28; see Schnee 1920:352). German companies established permanent trading stations in Chuuk Lagoon in 1879 and 1884 (Hezel 1973:71-72). In 1885 the German government challenged Spanish authority throughout much of Micronesia, including Chuuk State, raising the German flag over the lagoon and several other high islands (Office of the Chief of Naval Operations 1944:19). Eventually Germany purchased the Carolines in 1899, following Spain's defeat in the Spanish-American War (Brown 1977). Once Germany assumed control of the lagoon in 1903 (Gladwin and Samson 1953:41; Goodenough 1978:8, 25), colonial administrators imposed their rule not through the native sociopolitical hierarchy (as employed in much of Germany's Micronesian holdings; see Office of the Chief of Naval Operations 1943:13) but by appointing a single native ruler for each high-island community (Fischer and Fischer 1957:172)--though these designated leaders often came from traditional ruling lineages. This approach helped reinforce the ban on warfare imposed by the Germans in the early 1900s (see Krämer 1932:17), established a suprafamilial leadership previously lacking in the lagoon, and largely eliminated the continual realignment of factions that had perpetuated earlier conflicts (Hezel 1973:71; see also Pelzer and Hall 1946: 21; Oliver 1989, 2:979). Similar intervention to stop interpolity warfare and modify the traditional administrative system occurred in the outer islands (see Tolerton and Rauch n.d.:46-48; Nason 1975b:121; Flinn 1990:104).

Despite the many changes introduced during the German administration, the effect on demography was minimal. Relatively few Germans or other foreigners actually moved to Chuuk State. Typhoons continued to play an intermittent though important role in shaping the population of the outer islands. A severe typhoon struck the Hall Islands and Namonuito Atoll in 1905, though its precise impact is unknown (Fischer and Fischer 1957:6). A more devastating storm struck the Mortlock Islands in March 1907: official totals noted 227 deaths on Ettal, Lukunoch, and Satawan atolls directly attributable to the storm, with another 100 dying on Satawan Atoll the following year (*Deutsches Kolonialblatt* 1907:864-865; *Deutsches Kolonialblatt* 1908:745). German ships subsequently evacuated 600 to 700 survivors from the Mortlocks to Chuuk Lagoon, Saipan, and Pohnpei Island (Hezel 1995; see also Tolerton and Rauch n.d.:7; Fischer and Fischer 1957:81; Hempenstall 1978:95; Hezel 1991:123). A few other islanders were relocated for other reasons. German administrators exiled to Pohnpei for a cooling-off period those few native leaders in the lagoon who refused to stop fighting (Gladwin and Samson 1953:41). Some labor recruitment persisted, with islanders from the Mortlocks and Chuuk Lagoon sent as contract laborers to the Angaur and Nauru phosphate mines (Yanaihara 1940:285-286; Sever-

ance 1976:55). Diseases continued to be a problem, though their effects still were not devastating. The virtual introduction in 1910 of measles, tuberculosis, and intestinal diseases by Mortlockese returning home from their evacuation to Pohnpei three years earlier attests to the isolation from Western sicknesses that persisted on many outer islands into the early twentieth century (see Tolerton and Rauch n.d.:7).

To provide data for administrative purposes during these rapidly changing times, the German administration initiated efforts to collect demographic data in a systematic manner. It is unclear precisely how the Germans obtained these data, which in some cases may represent detailed estimates rather than complete censuses, but the result nevertheless was a series of population figures for portions of Chuuk State in the early 1900s. An "official accounting" of the population in Chuuk Lagoon recorded 13,115 residents in 1903 (Krämer 1932:17), providing the first reliable figure on population in that complex geographic and cultural setting. As presented below, demographic data also are available for several outer islands at different points in the German administration, though they do not cover all of Chuuk State in any particular year.

When Germany became involved in World War I in 1914, Japanese military forces occupied German-held Micronesian territories (Kiste 1984:43; see Peattie 1988:43). In 1920 a Class C Mandate from the League of Nations officially awarded to Japan all German possessions in the Pacific north of the equator, including Chuuk State (Clyde [1935] 1967). Initially Chuuk became one of five naval districts established in this newly annexed territory; when the civilian government of Micronesia was formed in 1922, Tonoas Island became the location of the central Carolines Branch Government (Peattie 1988:68-70). Japan assumed a particularly active role in administering its new Pacific territory. With an initial goal of expanding economic development beyond the copra industry established during the German period, Japan promoted commercial fishing, agriculture, and associated ventures such as trochus, sponge, and pearl production (Office of the Chief of Naval Operations 1944:136-139; Pelzer and Hall 1946:44; Gladwin and Samson 1953:43; Goodenough 1978:26; Peattie 1988:135-140). As part of its effort to develop Chuuk and the other districts of the Mandated Territory, Japan implemented a systematic program to educate the islanders in the ways of Japanese culture. The Japanese also constructed a hospital (on Tonoas Island in 1922) and implemented a public health program specifically focused on epidemic control (Office of the Chief of Naval Operations 1944:99; Peattie 1988:87). Administrative activities were carried out through the system imposed during the German period, the Japanese adding further bureaucratic levels to the native leadership, which had to be confirmed by

colonial officials (Pelzer and Hall 1946:20; Purcell 1967:161-162). Tonoas Island and its main community, the town of Dublon, which had emerged as a government center during the German period, maintained central economic and administrative roles (Peattie 1988:182-184).

As the end of the 1930s approached, military concerns replaced economic goals in Japanese development efforts throughout the Mandated Territory. Although Chuuk Lagoon's location ensured its military importance in maritime strategy, the mountainous terrain on most lagoon islands provided few locations for airstrips (Peattie 1988:231-232). Japanese leaders began to fortify the lagoon during the late 1930s, establishing the headquarters of the Fourth Fleet and the Fourth Base Force there by December 1941 (Peattie 1988:344). Despite considerable fortifications and a large contingent of Japanese troops, once the battle fleet moved west a major aerial attack by the U.S. Navy in February 1944 soundly defeated the remaining forces. After neutralizing the lagoon and outer-island garrisons through air strikes, American forces bypassed Chuuk State in their push through the Pacific. Remaining Japanese military forces stationed there surrendered in September 1945 (Peattie 1988:303, 309).

The most immediate impact on the demography of Chuuk State during the Japanese administration was an influx of immigrants from Japan and Okinawa. By the mid-1930s, roughly 700 Okinawan fishermen and traders resided in Chuuk Lagoon, mostly on Tonoas and Tol islands; another 800 Japanese nationals lived in Dublon town about the same time (Peattie 1988:182-184; see also Goodenough 1978:26). By 1937 the number of Okinawans living in Chuuk State had increased to more than 2,300, with many of the additional immigrants serving as laborers, while the number of Japanese immigrants had increased to roughly 1,300 (Office of the Chief of Naval Operations 1944:30). During the war the number of non-natives residing in Chuuk Lagoon increased dramatically--possibly peaking at 50,000 and still in excess of 38,300 as late as June 1945 (Pelzer and Hall 1946:55; Stark et al. 1958:8-9). The Japanese established smaller garrisons on Lukunoch, Namonuito, Polowat, and Satawan atolls during the war (Nason 1970: 220; M. Thomas 1978:33; Peattie 1988:303).

In addition to bringing non-Micronesians to Chuuk State, the Japanese also relocated local residents. The main reason for such relocation was to provide labor; indeed, by the end of the Japanese administration virtually every able-bodied man on certain island units had spent at least some time working elsewhere in the Mandated Territory (see Nason 1970:213; Marshall 1975:168-169; Severance 1976:57). During the early 1920s, the Japanese sent laborers from Chuuk State to work plantations on Saipan and Pohnpei (Office of the Chief of Naval Operations 1944:142; Hezel 1995).

Administrators similarly recruited laborers to work in the phosphate mines of Angaur--particularly from the lagoon and the Mortlocks (Yanaihara 1940: 286-287; Purcell 1967:192; Nason 1970:217; see also M. Thomas 1978:44; Flinn 1992:30), though in theory each island unit was to contribute a number of workers proportional to its population (Pelzer and Hall 1946:18). During the war the movement of islanders continued. In some cases this forced migration was to insure islander safety, such as the relocation of Polowat Atoll residents to Houk Atoll (Gladwin 1970:8), the relocation of residents of Satawan and Ta islets to Kuttu Islet within Satawan Atoll (Reafsnyder 1984:104), and the relocation of Tonoas Island residents elsewhere in the lagoon. In other cases the Japanese moved islanders to places needing additional laborers, such as the 1,200 Nauruans brought to Chuuk Lagoon in 1943 (Hezel 1991:159). A few islanders also relocated during the Japanese administration to attend schools in the lagoon and on Lukunoch Atoll (Fischer 1961; Purcell 1967:230-231; Marshall 1975:168; Nason 1975b:130; M. Thomas 1978:33).

Natural disasters and diseases continued to affect the demography of Chuuk State. At least two typhoons struck during the three decades of Japanese rule: a typhoon in 1925 struck the lagoon itself, causing considerable damage but an unknown number of casualties; a second typhoon, in 1935, caused substantial damage in Chuuk Lagoon and throughout the Lower Mortlocks, although once again demographic impacts are unknown (Office of the Chief of Naval Operations 1944:6; Nason 1970:38). Introduced diseases occurred throughout most of Chuuk State into the Japanese administration. Although smallpox was virtually eradicated by World War II (Gladwin and Sarason 1953:33), tuberculosis, intestinal parasites, typhoid fever, venereal disease (particularly syphilis), and measles all persisted--the latter killing “many” during an epidemic that swept through the lagoon in 1918 (Office of the Chief of Naval Operations 1944:93-94; Goodenough 1978: 25)--challenging the proposition that the Japanese brought all epidemics (except for dengue fever) under control during their administration (Purcell 1967:243-244). Localized outbreaks of certain illnesses also occurred. For example, an unidentified disease struck Ettal Atoll in 1927, killing an unspecified number of individuals, and a highly contagious respiratory disease killed 50 to 60 persons on Namoluk Atoll a decade later (Marshall 1975:161, 166, 170; Nason 1975b:130-131).

One of the most serious sources of demographic change during the Japanese period was depopulation associated with World War II, although once again particulars are unfortunately scarce. The general tendency for depressed fertility throughout Micronesia during the war (Fischer and Fischer 1957:79) probably holds for Chuuk State as well. Attacks by U.S.

military forces in 1944 no doubt killed some islanders, particularly in Chuuk Lagoon, though precise numbers are unknown and the relocation of the native population from the coast to the interior of many islands probably minimized the number of casualties (Stark et al. 1958:7). Following the attacks on Japanese military installations in 1944, a U.S. blockade cut off the area from supply lines--causing great hardship in some parts of the state, particularly the lagoon, but an unknown number of deaths (Gladwin and Sarason 1953:45; Goodenough 1978:25; Marshall 1979c:26). Near the war's end the Japanese allegedly developed a plan to execute all Micronesians in the lagoon, though never implemented it (Peattie 1988348). Despite the many sources of potential impacts on population during the Japanese administration, the number of islanders in Chuuk State remained at about 15,000 between 1920 and 1935. Data from the lagoon indicate a decline of more than 3,100 persons between the first systematic German survey in 1903 and the first Japanese census in 1920. Available figures indicate a decline in population both in Chuuk Lagoon and the outer islands between 1935 and 1946, with the total number of islanders falling by about 1,260 to fewer than 13,300 in the latter year (Pelzer and Hall 1946:tables 1, 3).

U.S. military forces bypassed Chuuk State in 1944, occupying the area following the Japanese surrender in 1945 (Peattie 1988:303). The U.S. government repatriated Japanese civilians and military personnel, as well as other Pacific Islanders, shortly thereafter. In 1947 the island units in Chuuk State became part of the Trust Territory of the Pacific Islands (TTPI), a strategic area established by the United Nations and administered by the United States (Shinn 1984:303-305). The TTPI administration promoted democratic government and generally removed controls on relocation within the territory. Moreover, for the first time modern health care became widely available, which, coupled with the advent of antibiotics, enabled the control of many diseases that had persisted until the end of World War II (see Pelzer and Hall 1946:12; Fischer and Fischer 1957:67). Although natural disasters such as typhoons continued (see Nason 1970:38), early warnings, increased preparation, and organized disaster relief helped to minimize their effect on population (e.g., J. Thomas 1978:6; M. Thomas 1978:36; Marshall 1976, 1979b). Under successive administrations by the U.S. Navy (1945-1951) and the U.S. Department of the Interior (1952-1986), the population of Chuuk State grew rapidly. Between the last Japanese census in 1935 and the first TTPI census in 1958 the total population increased by nearly 5,000 persons; by 1980 the Chuuk State population had grown by another 17,400.

In May 1979 Chuuk and three other Caroline districts of the TTPI (Kosrae, Pohnpei, and Yap) approved a constitution and became a nation

separate from the rest of territory: the Federated States of Micronesia (Shinn 1984:323). The U.S. government ratified a Compact of Free Association in 1986, defining future relations between the FSM and the United States. One consequence of the compact was that FSM residents were granted the right to migrate to the United States or any of its territories--an opportunity that many Chuuk State residents quickly took advantage of to relocate to Guam and the Commonwealth of the Northern Mariana Islands beginning in the late 1980s (Hezel and McGrath 1989; Rubinstein and Levin 1992). Despite this emigration, the sustained population growth that characterized Chuuk State during the U.S. administration persisted throughout the 1980s. By 1989 the population had increased to nearly 48,000 persons.

Changing Regional Demography in Chuuk State

The demography of Chuuk State was poorly documented before the Japanese Nan'yo-cho (South Seas Bureau) conducted its first systematic census of the Mandated Territory in 1920. Limited population information is available beginning in the early nineteenth century for the lagoon and a few outer islands in the form of estimates made by explorers, usually compiled after relatively brief visits (see Lütke 1835, 2:326-328; Gulick 1862:362). Figures for Chuuk Lagoon vary widely, as one might expect given the limited presence of outsiders there prior to the 1870s. The earliest estimate comes from Lütke's 1828 expedition, although the minimal attention he focused on the lagoon coupled with an admitted lack of information from other sources greatly reduce the credibility of his proposed total of 1,000 inhabitants (Lütke 1835, 2:328). The much larger figure of 35,000 lagoon residents in 1830, cited by several sources (though occasionally attributed to 1824 or 1827; see Lesson 1839, 2:197; Krämer 1932:24; Office of the Chief of Naval Operations 1944:27; Pelzer and Hall 1946:6; Goodenough 1978:25), comes from the writing of trader Benjamin Morrell (1832:424). Given Morrell's limited time in the lagoon (totaling a few days on three different visits) and the suspect quality of his other observations there (see Hezel 1973:64), this figure also is highly questionable. Equally dubious for its lack of any clear foundation is the figure of 5,000 lagoon inhabitants dating to the mid-nineteenth century (Gulick 1862:362; see Finsch 1893:299). The first believable estimates of lagoon population date to the 1880s, with the figure of 10,000 to 12,000 in 1881 (Doane 1881:210) and that of 12,000 in 1887 (Kubary and Krause 1889:55), both proposed by individuals much more familiar with the area than their predecessors. Based largely on figures from missionaries, by the early 1890s an estimated 14,000 to 16,000 people

TABLE 1: **Early Population Estimates for Chuuk State**

Area	1819	1828[a]	1850	1860[b]	1874[c]	1877[d]	1891[e]	1896	1901	1903	1907	1909	1910	1914
Chuuk Lagoon				5,000		12,000		10,000	12,000	13,115	13,514			11,000
Outer Islands														
Fananu												162		
Murillo												126		
Nomwin				50								204		
Ruo												123		
Ettal				200	600	500	500		344		150			
Lukunoch[f]				200	1,500				1,165					
Namoluk		40		300	400		350		264				200	
Satawan[f]				500	1,500				1,573					
Losap[f]		80		200	500		350		434	430				
Nama					175		500		326	320				
Makur												10		
Onanu												86		
Onou												67		
Onoun												68		
Piherarh												63		
Houk	900		350						300	300		177		
Pollap									550			60		
Polowat	2,000			100					1,100	1,100				
Tamatam	100			200								120		

Sources: Freycinet 1829; Lütke 1835; Cheyne 1852; Gulick 1862; Doane 1874; Schmeltz and Krause 1881; Kubary and Krause 1889; Finsch 1893; Christian 1899; Seidel 1905; *Deutsches Kolonial-Handbuch* 1909; Hermann 1909; Girschner 1912; Krämer 1932, 1935; Damm and Sarfert 1935.

b), and 300 in 1901 (Lütke 1835, 2:326; Gulick 1862:362; *Deutsches Kolonial-Handbuch* 1909:328). Reference to the population of "Fananu" in 1901 provided in *Deutsches Kolonial-Handbuch* (1909:328) probably is to Nomwin Atoll, which contains an islet called Fananu (which differs from Fananu Municipality [part of Murillo Atoll] as used in this study). The population of Namonuito Atoll (Makur, Onanu, Onou, Onoun, and Piherarh municipalities) was reported at roughly 200 persons in 1800, 150 in 1828 (Lütke 1835, 2:326–327), 50 in 1860 (see note *b*), 271 in 1901 (the figure referring to "Olo," which likely represents Ulul—denoted Onoun in this study—and probably refers to the entire atoll; see Hermann 1909:627), and 272 in 1903 (Krämer 1935:192, 219).

[a] Although Lütke (1835, 2:326) reported the population of "Fananou" as 150 persons, it is unlikely that he referred to the part of Murillo Atoll denoted in this study as Fananu Municipality, probably instead meaning Nomwin Atoll. Note that Lütke also reported the population of the Mortlocks as "300 fit men" and makes a nebulous reference to the population of the "islands viewed by Captain Freycinet" in 1819 (the Western Islands) as 100 persons (Lütke 1935, 2:327). After acknowledging the lack of reliable information on the demography of Chuuk Lagoon ("Roug"), Lütke estimated a population of about 1,000 based on its physical characteristics (1935, 2:328).

[b] Populations reported by Gulick (1862:362–363) are associated with no certain year. Many probably represent estimates made prior to 1860 by various explorers and traders that Gulick cites in his table of geographic and demographic information, though this is uncertain as well. Because these data provide some insights on mid-nineteenth population of various outer islands, I present them in this table—under 1860 for the sake of consistency, though recognizing that this date may be incorrect for some (or all) places noted.

[c] Doane (1874:204–205) estimated the Namoluk population at 300 to 500 in 1874 (which I report here as 400) and the population of Nama Island at 150 to 200 (reported here as 175).

[d] A resident missionary estimated the "whole population" of the Mortlocks at about 3,500 in 1877 (*Missionary Herald* 1877:202). The particular islands to which he referred are uncertain, though based on other references in the text they probably consist of the Lower Mortlocks.

[e] Based on the *Annual Mission Report* of 1891, Finsch (1893:299) noted a population of 4,450 for the Mortlocks as a whole and 1,500 for Lukunoch and Satawan atolls combined.

[f] Some of the geographic references in this table are inconsistent with the geographic focus used for population data in the remainder of the study, signifying entire atolls instead of parts of atolls (designated for census purposes as individual municipalities). Unless specifically noted, the above data refer to municipalities. In a few instances, data were available for an entire atoll but not for its individual populated components. Thus Satawan *in this table* represents the entire atoll, consisting of Kuttu, Moch, Satawan, and Ta municipalities (as reported in subsequent tables); Lukunoch here comprises Lukunoch and Oneop municipalities; and Losap here comprises Losap and Piis-Emmwar municipalities.

TABLE 2. **Population of Chuuk State by Year, Showing Population Change between Census Years: Select Years**

Year	Population	Change from Previous Listed Census Year	Average Annual Change from Previous Listed Census Year	Source
1920	**14,788**	**...**	**...**	**Nan'yo-cho 1937**
1925	**14,961**	**173**	**0.2%**	**Nan'yo-cho 1927**
1930	**15,200**	**239**	**0.3%**	**Nan'yo-cho 1931**
1935	**15,129**	**-71**	**-0.1%**	**Nan'yo-cho 1937**
1946	13,867	...	...	Pelzer and Hall 1946
1949	14,936	...	...	U.S. Dept. of the Navy 1949
1950	15,617	...	...	U.S. Dept. of the Navy 1950
1951	15,788	...	...	U.S. Dept. of the Navy 1951
1952	15,848	...	...	U.S. Dept. of the Interior 1952
1954	16,946	...	...	U.S. Dept. of State 1955
1956	17,477	...	...	U.S. Dept. of State 1957
1957	18,605	...	...	U.S. Dept. of State 1958
1958	**20,124**	**4,995**	**1.2%**	**Office of the High Commissioner 1959**
1959	21,010	...	...	U.S. Dept. of State 1960
1960	21,401	...	...	U.S. Dept. of State 1961
1961	21,309	...	...	U.S. Dept. of State 1962
1962	22,564	...	...	U.S. Dept. of State 1963
1963	23,344	...	...	U.S. Dept. of State 1964
1964	24,521	...	...	U.S. Dept. of State 1965
1965	25,820	...	...	U.S. Dept of State 1966
1967	**25,107**	**4,983**	**2.5%**	**School of Public Health n.d.**
1968	26,368	...	...	U.S. Dept. of State 1969
1969	27,453	...	...	U.S. Dept. of State 1970
1971	29,334	...	...	U.S. Dept. of State 1972
1972	32,732	...	...	U.S. Dept. of State 1973
1973	**31,609**	**6,502**	**3.9%**	**Office of Census Coordinator 1975**
1975	33,040	...	...	U.S. Dept. of State 1978
1976	34,120	...	...	U.S. Dept. of State 1978
1977	35,220	...	...	U.S. Dept. of State 1978
1978	36,350	...	...	U.S. Dept. of State 1979
1979	37,400	...	...	U.S. Dept. of State 1980
1980	**37,488**	**5,879**	**2.5%**	**U.S. Bureau of the Census 1983a**
1984	44,596	...	...	U.S. Dept. of State 1985
1989	**47,871**	**10,383**	**2.8%**	**Office of Planning and Statistics 1992a**

Notes: Census years in **boldface.** Data for 1920-1935 are for Pacific Islanders only. Intercensal estimates generally are de jure population; census data are de facto population. For all tables, "-" denotes zero or a percentage that rounds to less than 0.1; "NA" = not available; ". . ." = not applicable.

resided in the lagoon and the Mortlocks (Finsch 1893:299). As noted above, German administrators obtained careful population counts for parts of Chuuk State between 1900 and 1909 (see Yanaihara 1940:29), including the lagoon in 1903 and 1907, and several outer islands in 1901, 1903, 1907, and 1909 (*Deutsches Kolonial-Handbuch* 1909:328; Hermann 1909:627-628; Krämer 1932:17; Damm and Sarfert 1935:20; Krämer 1935:169-173, 195-196) (Table 1).[3] In some cases German officials collected this information, while in others native chiefs or missionaries provided the desired data (see Finsch 1893:299; Bollig 1927:225). Unfortunately, no single set of demographic estimates or census is available for all of Chuuk State at one time prior to the Japanese administration.

Ten systematic censuses of Chuuk State were conducted during the twentieth century: four by the Japanese South Seas Bureau (1920, 1925, 1930, and 1935), two by the TTPI administration (1958 and 1973), one by the U.S. Peace Corps in conjunction with the University of Hawai'i School of Public Health (1967), two by the U.S. Bureau of the Census (1970 and 1980), and one by the FSM Office of Planning and Statistics (1989). The U.S. military commissioned what appears to be a fairly accurate estimate

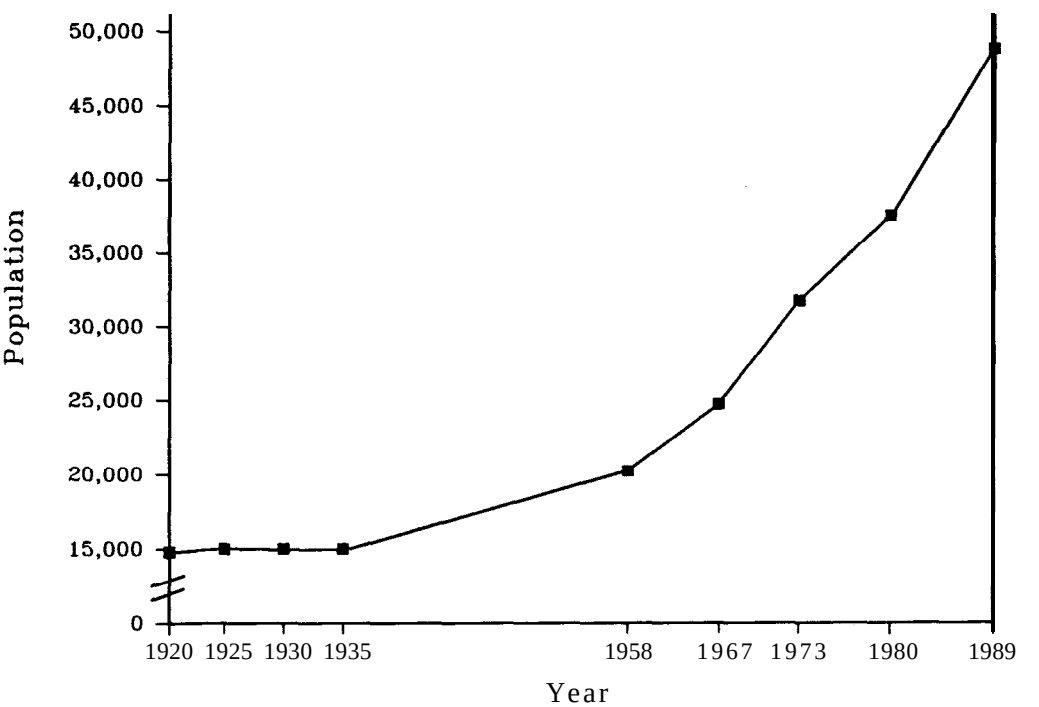


FIGURE 2. **Change in the population of Chuuk State over time (1920, 1925, 1930, and 1935 are Pacific Islanders only).**

TABLE 3. **Population by Municipality: Census Years**

Area	1920[a, b]	1925[b, c]	1930[c]	1935[c]	1958	1967	1970	1973	1980	1989[d]
Chuuk State	14,788	14,961	15,200	15,129	20,124	25,107	NA	31,609[e]	37,488	47,871
Chuuk Lagoon	9,822	9,836	10,162	10,180	14,084	18,141	NA	24,216	28,328	38,341
Eot	NA	NA	120	102	184	217	237	192	181	279
Fanapanges	NA	171	186	173	261	306	312	341	401	447
Fefen	1,623	1,173	1,221	1,236	1,546	2,042	1,688	2,478	3,076	3,902
Parem	NA	151	135	134	101	134	181	203	225	350
Ramanum	446	306	289	229	240	283	305	375	462	679
Siis	NA	149	143	112	180	244	197	241	324	438
Tol	2,284	2,416	2,508	2,367	3,624	4,486	2,211	5,439	6,705	8,346
Tonoas	1,340	1,456	1,443	1,923	1,528	2,021	2,090	2,558	3,223	3,870
Udot	649	615	535	517	623	874	558	930	1,082	1,513
Uman	913	856	969	974	1,430	1,621	1,588	1,891	2,298	2,895
Weno	2,567	2,543	2,613	2,413	4,367	5,913	NA	9,568	10,351	15,622
Outer Islands[f]	4,966	5,125	5,038	4,949	6,040	6,966	NA	7,350	9,160	9,530
Fananu	NA	126	132	114	104	155	159	179	235	238
Murillo	NA	102	118	118	171	235	239	203	325	296
Nomwin	NA	110	106	101	226	279	292	293	322	386
Ruo	NA	92	107	105	133	184	168	180	293	398
Ettal	NA	309	283	238	268	298	84	266	446	420
Kuttu	NA	371	357	330	478	496	506	383	483	423
Lukunoch	NA	635	496	476	493	549	554	505	666	745
Moch	NA	300	278	270	392	515	425	443	632	604
Namoluk	329	340	322	287	250	306	384	263	324	310
Oneop	NA	378	333	405	411	427	489	404	480	534
Satawan	NA	300	264	280	421	508	430	826	767	885
Ta	NA	116	142	149	188	249	334	330	295	294

Losap	NA	310	311	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Nama	NA	382	389	405	689	534	NA	702	1,021	897
Piis-Emmwar	NA	196	225	235	181	213	236	226	240	320
Makur	NA	NA	NA	NA	31	50	73	66	97	121
Onanu	NA	90	64	72	41	37	27	47	75	80
Onou	NA	65	58	55	40	38	54	41	59	91
Onoun	NA	140	131	122	187	242	271	375	434	513
Piherarh	NA	45	52	49	59	67	83	111	118	139
Houk	NA	155	226	222	235	290	331	265	205	346
Pollap	NA	156	159	153	207	304	322	316	427	315
Polowat	NA	287	364	335	288	410	378	435	441	477
Tamatam	NA	120	121	102	94	128	159	154	188	226

Sources: Nan'yō-chō 1927, 1931, 1937; Office of the High Commissioner 1959; School of Public Health n.d.; U.S. Bureau of the Census 1972, 1983a; Office of Census Coordinator 1975; Office of Planning and Statistics 1992a.

[a] Fefen included Parem and Siis, and Tol included Fanapanges.

[b] Udot included Eot.

[c] Onoun included Makur.

[d] Tol consisted of populations reported for Tol (4,846), Patta (1,299), Polle (1,327), and Wonei (874) municipalities; Weno, in turn, comprised populations reported for Weno (15,253) and Fono (369) municipalities.

[e] Includes 43 individuals whose place of residence was "not specified."

[f] For all tables, the order of outer-island municipalities incorporates geographic and cultural groupings for the Hall Islands (Fananu, Murillo, Nomwin, and Ruo), the Lower Mortlock Islands (Ettal, Kuttu, Lukunoch, Moch, Namoluk, Oneop, Satawan, and Ta), the Upper Mortlock Islands (Losap, Nama, and Piis-Emmwar), Namonuito Atoll (Makur, Onanu, Onou, Onoun, and Piherarh), and the Western Islands (Houk, Pollap, Polowat, and Tamatam).

TABLE 4. **Population Density by Municipality: Census Years (Persons per Square Mile)**

Area	1920	1925	1930	1935	1958	1967	1970	1973	1980	1989
Chuuk State	299	303	307	306	407	508	NA	639	758	968
Chuuk Lagoon	254	254	262	263	364	469	NA	625	732	990
Eot	NA	NA	632	537	968	1,142	1,247	1,011	953	1,468
Fanapanges	NA	201	219	204	307	360	367	401	472	526
Fefen	NA	226	236	239	298	394	326	478	594	753
Parem	NA	199	178	176	133	176	238	267	296	461
Ramanum	1,487	1,020	963	763	800	943	1,017	1,250	1,540	2,263
Siis	NA	648	622	487	783	1,061	857	1,048	1,409	1,904
Tol	NA	159	165	156	238	295	145	358	441	549
Tonoas	379	411	408	543	432	571	590	723	910	1,093
Udot	NA	210	183	176	213	298	190	317	369	516
Uman	454	426	482	485	711	806	790	941	1,143	1,440
Weno	341	338	347	321	581	786	NA	1,272	1,376	2,077
Outer Islands	463	478	470	462	563	650	NA	686	854	889
Fananu	NA	1,260	1,320	1,140	1,040	1,550	1,590	1,790	2,350	2,380
Murillo	NA	392	454	454	658	904	919	781	1,250	1,138
Nomwin	NA	129	125	119	266	328	344	345	379	454
Ruo	NA	657	764	750	950	1,314	1,200	1,286	2,093	2,843
Ettal	NA	423	388	326	367	408	115	364	611	575
Kuttu	NA	3,373	3,245	3,000	4,345	4,509	4,600	3,482	4,391	3,845
Lukunoch	NA	629	491	471	488	544	549	500	659	738
Moch	NA	2,727	2,527	2,455	3,564	4,682	3,864	4,027	5,745	5,491

Namoluk	*1,028*	*1,063*	*1,006*	*897*	*751*	*956*				
Oneop	NA	2,100	1,850	2,250	2,283	2,372	2,717	2,244	2,667	2,967
Satawan	NA	259	228	241	363	438	371	712	661	763
Ta	NA	193	237	248	313	415	373	382	492	485
Losap	NA	939	942	988	1,373	1,370	NA	1,327	1,779	1,439
Nama	NA	1,317	1,341	1,397	2,376	1,841	NA	2,421	3,521	3,093
Piis-Emmwar	NA	2,800	3,214	3,357	2,586	3,043	3,371	3,229	3,429	4,571
Makur	NA	. . .	. . .	. . .	172	278	406	367	539	672
Onanu	NA	900	640	720	410	370	270	470	750	800
Onou	NA	542	483	458	333	317	450	342	492	758
Onoun	NA	143	134	124	191	247	277	383	443	523
Piherarh	NA	145	168	158	190	216	268	358	381	448
Houk	NA	144	209	206	218	269	306	245	190	320
Pollap	NA	538	548	528	714	1,048	1,110	1,090	1,472	1,086
Polowat	NA	219	278	256	220	313	289	332	337	364
Tamatam	NA	1,333	1,344	1,133	1,044	1,422	1,767	1,711	2,089	2,511

("head count") of residents in 1946 (Pelzer and Hall 1946:6, tables 1 and 3), but due to uncertain data collection methods and the lack of island-specific estimates for the lagoon I do not discuss these figures with the censuses.[4] The demographic data available indicate that Chuuk State population increased throughout most of the twentieth century, the slow growth (including a brief period of slight decline) in total native inhabitants between 1920 and 1935 contrasting sharply with more rapid growth over the next five decades (Table 2; Figure 2).

Demographic change varied between individual island units in Chuuk State (Table 3). In part, these differences corresponded to the major geographic division between Chuuk Lagoon and the outer islands, pointing up the increased concentration of people in the lagoon, particularly in Weno Municipality after the war. Changes in population density over time document further the contrasting demographic change in different places, with many lagoon and outer-island municipalities featuring dense populations (Table 4).

Let us now briefly examine the demographic evolution of Chuuk State in regional terms, organized in six sections. The first discusses demographic data from the Japanese period, examining the four censuses between 1920 and 1935 when the population remained relatively constant. Each of the remaining five sections deals with one of the post-World War II censuses (excluding 1970), encompassing a period when the population grew substantially and became more concentrated in Chuuk Lagoon. In the interest of brevity, this discussion is confined to key data, drawing attention to likely causes of population change when possible.

Regional Demography during the Japanese Period: 1920, 1925, 1930, and 1935

In 1920 the Japanese South Seas Bureau conducted its first census of Chuuk State (then the Truk District of the Mandated Territory; see Nan'yo-cho 1937). The South Seas Bureau conducted similar censuses in 1925, 1930, and 1935, providing an extremely detailed demographic data base for the period of Japanese administration. These data describe an essentially constant population, growing slightly between 1920 and 1930 at average annual rates of 0.3 percent or less before declining slightly over the first five years of the 1930s. I discuss the four Nan'yō-chō censuses briefly below, focusing on Pacific Islanders and for the most part excluding any examination of resident Japanese.[5]

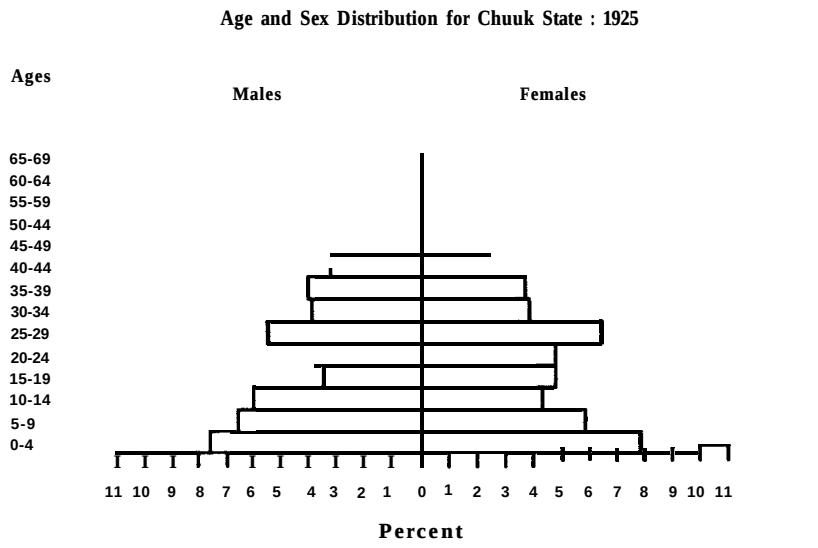
The 1920 census recorded nearly 14,800 Pacific Islanders in Chuuk State, with roughly two-thirds residing in Chuuk Lagoon (see Table 3;

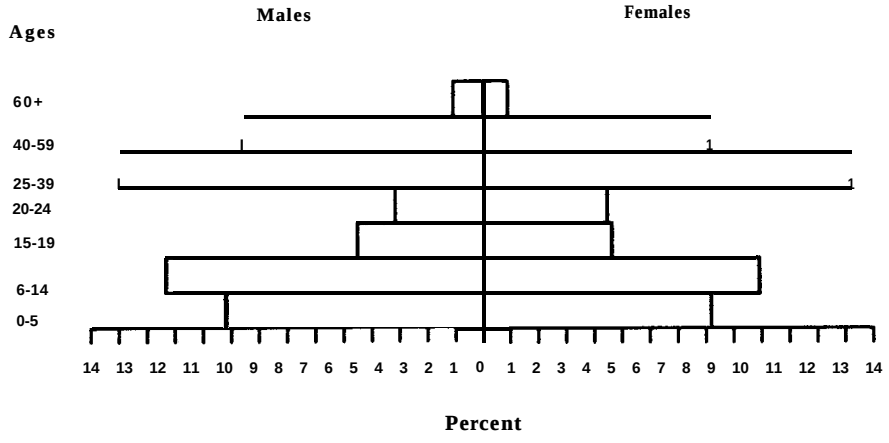
Nan'yo-cho 1937). Although reliable population figures for the entire state are unavailable for earlier years, demographic data for Chuuk Lagoon during the German period indicate that depopulation occurred between the early 1900s and 1920. Despite a lack of population data for all lagoon municipalities, clearly most residents in 1920 lived in Weno and Tol municipalities. Apart from Namoluk Atoll, population data are unavailable for the outer islands in 1920.

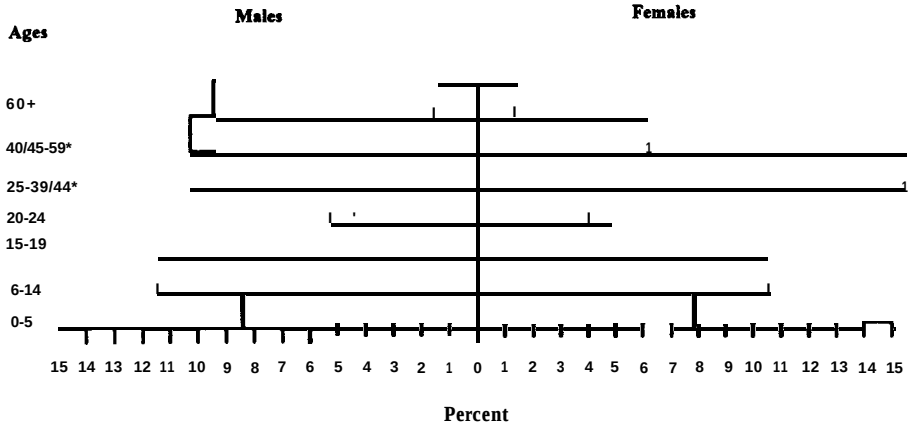
The number of Pacific Islanders living in Chuuk State grew by 173 persons between 1920 and 1925, the result of 0.2 percent average annual growth (see Table 2; Nan'yō-chō 1927). The 1925 census recorded the population of each municipality in Chuuk State with the exception of Eot and Udot in the lagoon, which it combined, and Makur and Onoun islets in Namonuito Atoll, which it also combined (see Table 3). Once again, nearly two-thirds of the total population resided in Chuuk Lagoon, though the demographic dominance of the lagoon declined slightly from that recorded in 1920, and again, the largest number of lagoon residents lived in Weno and Tol municipalities. Most outer islands had small populations in 1925; Lukunoch, the outer-island municipality with the largest number, had only 635 persons--about 4.2 percent of the state total. In addition to the number of Pacific Islanders residing in various portions of Chuuk State, the 1925 census also recorded information on the age and sex composition of the state population. Males slightly exceeded females in 1925 (Figure 3), with the median age for the entire population 22.1 years.

The Pacific Islander population continued to grow slowly over the second half of the 1920s, the 0.3 percent average annual rate of increase resulting in a total of 15,200 resident islanders by 1930 (see Table 2; Nan'yo-cho 1931). Slightly more than two-thirds lived in the lagoon (see Table 3). The lagoon population increased slightly between 1925 and 1930, as did the populations of most component islands, with the largest numbers once again residing in Weno and Tol municipalities. In contrast, the population of the outer islands declined slightly during the same five years. The 1930 census once again recorded the age-sex composition of the Pacific Islander population, the overall breakdown and median age (21.6 years) being similar to 1925 (see Figure 3). In addition, the 1930 census provided for the first time information on age (and sex) composition of individual municipalities (Table 5). In general, the lagoon contained relatively fewer young (less than 15 years of age) and old (60 years or older) than either the outer islands or the state as a whole. The age composition of municipalities varied considerably, particularly those with small populations.

Little information on births, deaths, and mobility is available for the years of Japanese administration. The general fertility rate varied between 1923







*DIFFERENT AGES USED FOR MALES (25-39, 40-59) AND FEMALES (25-44, 45-49).

FIGURE 3. **Population pyramids (Pacific Islanders only): 1925, 1930, 1935.**

TABLE 5. **Pacific Islander Population by Age and Municipality: 1930**

Area	Total Persons	Age Group (Percentage) <15	15-24	25-59	60+
Chuuk State	15,200	38.5	16.7	42.9	1.9
Chuuk Lagoon	10,162	38.0	17.0	43.3	1.6
Eot	120	40.8	16.7	41.7	0.8
Fanapanges	186	37.6	17.2	43.5	1.6
Fefen	1,221	36.5	15.2	45.4	2.9
Parem	135	20.7	20.7	57.8	0.7
Ramanum	289	31.8	16.6	50.9	0.7
Siis	143	35.0	17.5	47.6	-
Tol	2,508	39.4	14.7	44.1	1.9
Tonoas	1,443	41.0	23.4	34.8	0.8
Udot	535	30.7	18.9	48.4	2.1
Uman	969	42.3	15.8	40.0	1.9
Weno	2,613	37.2	16.6	44.9	1.4
Outer Islands	5,038	39.6	15.9	41.9	2.6
Fananu	132	34.8	12.1	53.0	-
Murillo	118	35.6	9.3	54.2	0.8
Nomwin	106	36.8	16.0	46.2	0.9
Ruo	107	38.3	13.1	46.7	1.9
Ettal	283	37.8	15.9	41.0	5.3
Kuttu	357	45.9	15.7	35.0	3.4
Lukunoch	496	46.2	12.3	37.3	4.2
Moch	278	43.2	16.2	39.6	1.1
Namoluk	322	36.6	19.9	40.1	3.4
Oneop	333	43.8	12.9	40.8	2.4
Satawan	264	38.6	17.0	41.3	3.0
T a	142	36.6	15.5	42.3	5.6
Losap	311	40.5	18.3	36.0	5.1
Nama	389	44.0	14.4	40.1	1.5
Piis-Emmwar	225	42.2	22.2	31.1	4.4
Onanu	64	42.2	15.6	42.2	-
Onou	58	34.5	19.0	44.8	1.7
Onoun[a]	131	44.3	13.7	41.2	0.8
Piherarh	52	32.7	30.8	36.5	-
Houk	226	30.1	23.5	44.7	1.8
Pollap	159	31.4	15.7	52.8	-
Polowat	364	29.1	12.9	57.4	0.5
Tamatam	121	43.8	15.7	40.5	-

Source: Nan'yo-cho 1931.

Note: In this and following tables, percentages may not sum to 100.0 due to rounding. Others reasons for not summing to 100.0% are noted in each case.

[a] Included Makur in 1930.

and 1930, ranging from a low of 91.0 in 1929 to a high of 130.7 in 1930 for women aged 15 to 50 years (Yanaihara 194035). The crude birth rate averaged 23.8 for the years 1925 through 1929 inclusive, exceeded slightly by the crude death rate of 24.1 over the same five years (Yanaihara 1940:46).[6] More detailed data on mobility are available for 1930, through comparing residence in 1930 with place of registration (Table 6). These data indicate that the vast majority of the 1930 Pacific Islander population of Chuuk State resided in the same municipality where registered, with most of the remainder registered elsewhere in the state.

Chuuk State population declined slightly between 1930 and 1935, the total number of Pacific Islanders decreasing by 71 individuals during the five-year period (see Table 2; Nan'yō-chō 1937). This decline occurred in the outer islands. The lagoon population actually increased slightly during the early 1930s (see Table 3), accounting for about 67 percent of the total state population in 1935. Although Weno and Tol continued to feature the largest numbers of Pacific Islanders of any municipalities in the lagoon, both experienced population declines between 1930 and 1935. Population growth on Tonoas Island more than compensated for these declines, as Dublon town grew both in size and importance. Most outer islands also experienced slight decreases in population over the first five years of the 1930s.

The age composition of the 1935 Pacific Islander population generally resembled that found in the previous two censuses (see Figure 3), a median age of 21.3 years indicating an increasingly youthful total population. Data on age composition by municipality, also available for 1935 (Table 7), underscore the minimal demographic changes that occurred during the preceding five years. Chuuk Lagoon continued to contain a larger proportion of persons in the two central age groups (15-24 and 25-59 years) than the outer islands, possibly an indication of individuals coming to the lagoon to work or attend school. The age composition of Tonoas Island is particularly noteworthy in this regard, with nearly 29 percent of its Pacific Islander population aged 15-24 years (compared to about 18 percent for the state as a whole). The age composition of many other municipalities varied widely, with the greatest variability once again evident in places with relatively small populations.

Data helping to explain the population change between 1930 and 1935 once again are scanty. Both fertility and mortality apparently remained low, with crude birth rate (30.1) slightly exceeding crude death rate (27.8) in 1935 (Yanaihara 1940:46; note that the 1935 crude birth rate calculated from fertility data [Japan 1936] yields a value of 30.4). Data on mobility comparable with those presented for 1930 unfortunately are unavailable.

TABLE 6. **Pacific Islander Population by Municipality, according to Place of Registration: 1930**

Area	Total Persons	Place of Registration (Percentage)			
		Same Locality	Same District[a]	Other District[a]	Other Location[b]
Chuuk State	15,200	89.0	10.3	0.5	0.1
Chuuk Lagoon	10,162	86.6	12.7	0.5	0.2
Eot	120	82.5	17.5	-	-
Fanapanges	186	93.0	7.0	-	-
Fefen	1,221	79.0	19.1	1.1	0.7
Parem	135	83.0	16.3	0.7	-
Ramanum	289	96.5	3.5	-	-
Siis	143	91.6	8.4	-	-
Tol	2,508	95.1	4.9	-	-
Tonoas	1,443	65.8	33.1	0.5	0.6
Udot	535	80.6	18.9	0.6	-
Uman	969	92.8	7.1	0.1	-
Weno	2,613	91.1	8.2	0.8	-
Outer Islands	5,038	93.8	5.5	0.7	-
Fananu	132	83.3	15.9	-	0.8
Murillo	118	90.7	9.3	-	-
Nomwin	106	91.5	7.5	0.9	-
Ruo	107	94.4	5.6	-	-
Ettal	283	95.8	3.9	0.4	-
Kuttu	357	95.8	4.2	-	-
Lukunoch	496	97.8	2.2	-	-
Moch	278	96.8	3.2	-	-
Namoluk	322	92.9	7.1	-	-
Oneop	333	96.1	1.8	2.1	-
Satawan	264	91.7	7.6	0.4	0.4
Ta	142	73.9	26.1	-	-
Losap	311	98.7	1.3	-	-
Nama	389	98.5	1.5	-	-
Piis-Emmwar	225	98.2	1.8	-	-
Onanu	64	87.5	10.9	1.6	-
Onou	58	70.7	29.3	-	-
Onoun[c]	131	64.9	32.1	3.1	-
Piherarh	52	63.5	34.6	1.9	-
Houk	226	95.6	-	4.4	-
Pollap	159	99.4	0.6	-	-
Polowat	364	98.1	-	1.9	-
Tamatam	121	98.3	1.7	-	-

Source: Nan'yo-cho 1931.

[a] Refers to major island districts within the Mandated Territory (e.g., Truk District).

[b] Refers to locations outside the Mandated Territory.

[c] Included Makur in 1930.

TABLE 7. **Pacific Islander Population by Age and Municipality: 1935**

Area	Total Persons	Age Group (Percentage)			
		<15	15-24	25-59	60+
Chuuk State	15,129	37.8	18.4	41.0	2.8
Chuuk Lagoon	10,180	36.9	18.9	41.3	2.9
Eot	102	40.2	13.7	42.2	3.9
Fanapanges	173	39.9	16.2	42.2	1.7
Fefen	1,236	38.3	18.0	40.2	3.4
Parem	134	30.6	14.9	53.0	1.5
Ramanum	229	31.0	14.4	52.0	2.6
Siis	112	36.6	18.8	42.0	2.7
Tol	2,367	40.1	16.3	41.0	2.6
Tonoas	1,923	31.6	28.5	38.9	1.0
Udot	517	33.3	17.4	45.8	3.5
Uman	974	41.5	16.0	38.5	4.0
Weno	2,413	36.6	16.9	42.4	4.0
Outer Islands	4,949	39.7	17.2	40.5	2.6
Fananu	114	29.8	20.2	47.4	2.6
Murillo	118	39.0	10.2	47.5	3.4
Nomwin	101	40.6	10.9	47.5	1.0
Ruo	105	35.2	12.4	50.5	1.9
Ettal	238	39.5	15.1	42.9	2.5
Kuttu	330	41.5	21.5	34.5	2.4
Lukunoch	476	44.5	18.9	33.6	2.9
Moch	270	41.5	14.8	42.2	1.5
Namoluk	287	40.1	16.0	41.8	2.1
Oneop	405	47.7	18.0	31.6	2.7
Satawan	280	37.9	17.5	40.7	3.9
Ta	149	38.3	16.1	41.6	4.0
Losap	326	41.7	16.0	39.3	3.1
Nama	405	41.5	18.0	39.0	1.5
Piis-Emmwar	235	45.1	19.1	33.2	2.6
Onanu	72	37.5	23.6	36.1	2.8
Onou	55	32.7	16.4	49.1	1.8
Onoun[a]	122	36.9	21.3	41.0	0.8
Piherarh	49	34.7	18.4	46.9	
Houk	222	32.9	18.0	45.0	4.1
Pollap	153	38.6	12.4	47.1	2.0
Polowat	335	26.0	17.3	52.5	4.2
Tamatam	102	43.1	15.7	40.2	1.0

Source: Nan'yo-cho 1937.

[a] Included Makur in 1935.

Regional Demography in 1958

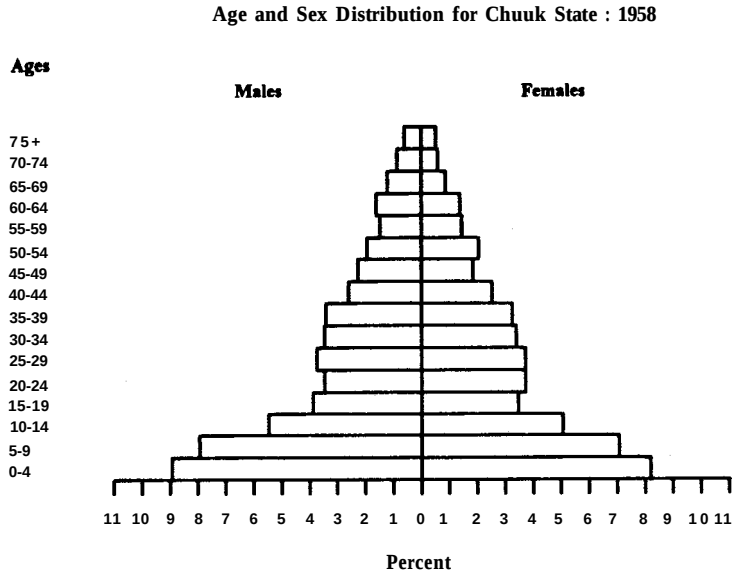
It was not until 1958 that another census of Chuuk State occurred, conducted by the TTPI administration (Office of the High Commissioner 1959). Resulting data indicate that the population increased by nearly 5,000 individuals over the total recorded by the previous census twenty-three years earlier, at an average annual rate of 1.2 percent (see Table 2). Of course, the period between 1935 and 1958 includes World War II and the likely depopulation that occurred then. If the 1946 population estimate mentioned earlier of nearly 13,900 is accurate, the average annual rate of population growth between that year and 1958 increases to 3.2 percent.

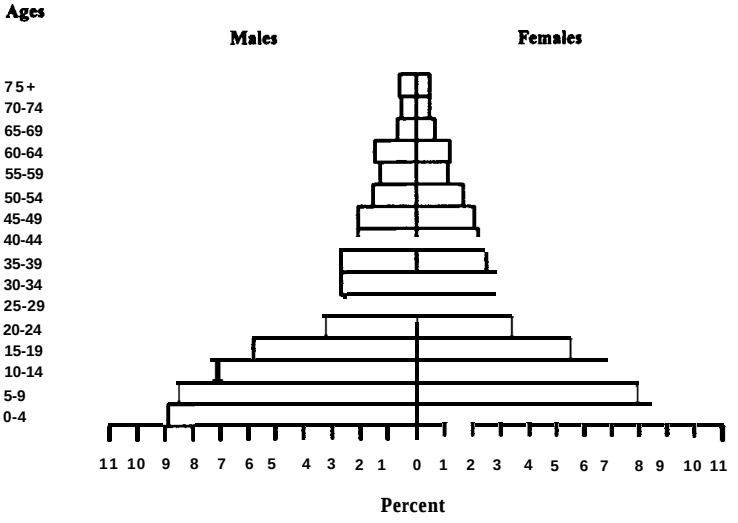
Although the population of both Chuuk Lagoon and the outer islands increased between 1935 and 1958, most growth occurred in the lagoon (see Table 3). In 1958 the lagoon contained 70 percent of the state population, a slight increase from prewar levels. Weno and Tol municipalities continued to dominate state demography, together accounting for nearly 40 percent of the total; the population of Tonoas Island, in contrast, declined by nearly 400 persons between 1935 and 1958. The outer-island population grew more slowly between 1935 and 1958 than that of the lagoon, though most municipalities witnessed an increase. Males continued to outnumber females slightly and the median age declined to 20.3 years (Figure 4). This increasingly youthful population suggests that natural growth (births minus deaths) played an important role in the demographic increase that occurred between 1935 and 1958. Unfortunately, reliable data on fertility, mortality, and migration all are lacking for 1958.

Regional Demography in 1967

The 1967 census indicates that the population of Chuuk State continued its post-World War II growth, the addition of nearly 5,000 more people representing a 2.5 percent average annual increase since 1958 (see Table 2; School of Public Health n.d.). The lagoon experienced the greatest demographic growth, accounting for more than 72 percent of the total state population (see Table 3). The populations of all lagoon municipalities increased between 1958 and 1967, with the combined populations of Weno and Tol totaling nearly 42 percent of all Chuuk State inhabitants. The population of all but four outer-island municipalities also grew over this nine-year period.

Two 1958 characteristics continued into 1967: a slight excess in males over females, and a (particularly) youthful population, with the median age (islanders only) declining to only 16.0 years (see Figure 4). Data from the 1967 census on age composition by municipality highlight the changes in





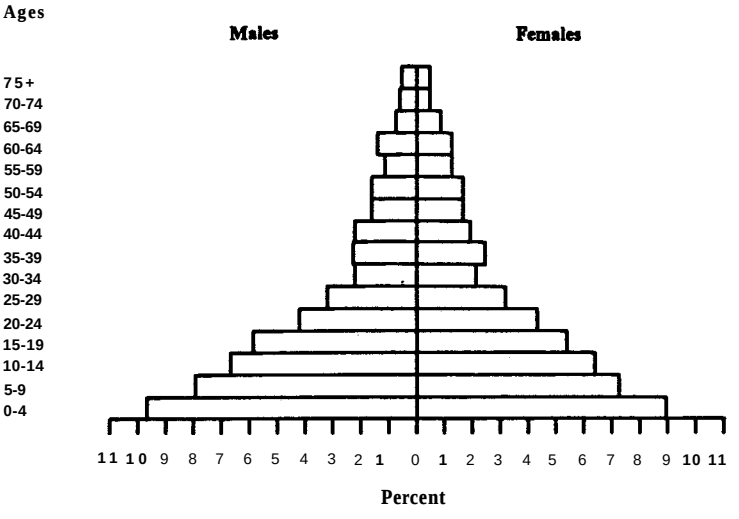


FIGURE 4. **Population pyramids: 1958, 1967, 1973.**

age structure that had occurred throughout the state since the Japanese administration (Table 8). The lagoon age composition generally resembled that of the outer islands--with the latter containing relatively fewer individuals aged 15-24 years and relatively more aged 60 years or greater. The age structure of municipalities varied, with the composition of places with larger populations (Fefen, Tol, Tonoas, Uman, and Weno) broadly similar to one another.

Fertility data in 1967 indicate a crude birth rate only slightly higher than that recorded in 1935 (Table 9). Considered with general and total fertility measures, the crude birth rate indicates moderate-to-high fertility that generally is comparable to other parts of Micronesia (see Levin and Retherford 1986). Fertility measures calculated from a different source than that used for Table 9 indicate a slightly higher level of reproduction for Chuuk State as a whole in 1967, with the highest fertility found in Chuuk Lagoon (Table 10). Three of the five most populated municipalities featured natality in excess of that for the state as a whole. Fertility for smaller populations varied considerably--mainly a function of the small numbers involved and providing only limited insights on reproductive levels. Mortality data indicate that most deaths involved individuals aged 5 years or younger and 70 years or older (Table 11). The low crude death rate compared to the crude birth rate suggests that natural increase played a key role in population growth (Table 12). Unfortunately, mobility data for 1967 are unavailable, although intrastate movement likely played an important role in many municipalities--such as the emigration from Ramanum that helped counter natural population growth on that island (Goodenough 1978:198).

Regional Demography in 1973

The U.S. Bureau of the Census conducted its first census of the TTPI in 1970 (U.S. Bureau of the Census 1972). Unfortunately, recording, editing, and tabulation errors made the resulting data of questionable use for most of the Trust Territory in general and Chuuk State in particular--with populations for several municipalities, as well as the state as a whole, unavailable (and other figures of questionable accuracy) (see Table 3). Because of these problems another census was conducted in 1973 (Office of Census Coordinator 1975).

The 1973 census recorded more than 31,600 residents, an addition of more than 6,500 persons since 1967 as a result of average annual growth reaching 3.9 percent (see Table 2). Much of this growth occurred in Chuuk Lagoon, where the 1973 population had increased to account for nearly 77 percent of the state total (see Table 3). Weno and Tol municipalities contin-

TABLE 8. **Population by Age and Municipality: 1967**

Area	Total Persons	Age Group (Percentage)[a] <15	15-24	25-59	60+
Chuuk State	25,107	45.4	17.0	27.9	5.6
Chuuk Lagoon	18,141	45.4	17.2	27.6	5.3
Eot	217	44.7	16.6	22.6	4.6
Fanapanges	306	41.8	18.6	22.9	4.6
Fefen	2,042	48.8	15.8	27.6	5.4
Parem	134	46.3	9.0	31.3	12.7
Ramanum	283	43.5	19.1	32.9	3.2
Siis	244	45.9	16.0	25.8	8.2
Tol	4,486	46.5	16.8	26.8	5.4
Tonoas	2,021	46.3	17.8	27.6	6.5
Udot	874	45.4	15.3	28.6	7.2
Uman	1,621	47.3	17.8	26.4	5.1
Weno	5,913	42.9	17.9	28.6	4.5
Outer Islands	6,966	45.4	16.5	28.6	6.2
Fananu	155	50.3	18.7	24.5	4.5
Murillo	235	48.5	21.3	24.3	5.5
Nomwin	279	46.2	22.9	24.4	5.4
Ruo	184	51.6	16.8	24.5	5.4
Ettal	298	41.9	19.8	29.9	7.4
Kuttu	496	46.0	19.2	28.4	5.6
Lukunoch	549	46.6	14.6	28.4	6.9
Moch	515	39.0	21.0	31.3	6.6
Namoluk	306	44.8	21.2	26.1	6.9
Oneop	427	43.1	16.6	23.0	7.0
Satawan	508	43.7	20.7	28.0	6.3
Ta	249	45.8	15.3	29.3	2.4
Losap	452	48.9	17.3	26.5	6.6
Nama	534	49.3	14.2	27.0	8.6
Piis-Emmwar	213	48.4	18.3	23.9	8.0
Makur	50	50.0	18.0	30.0	2.0
Onanu	37	40.5	10.8	10.8	-
Onou	38	42.1	18.4	18.4	-
Onoun	242	44.2	11.2	36.8	6.2
Piherarh	67	43.3	10.4	10.4	-
Houk	290	46.2	10.7	38.3	2.8
Pollap	304	52.3	9.9	32.9	4.3
Polowat	410	35.9	6.8	39.0	9.0
Tamatam	128	50.0	12.5	28.1	8.6

Source: School of Public Health n.d.

[a] Percentages may not sum precisely to 100.0 due to exclusion of 749 individuals whose ages were "not specified" and 286 individuals who were "foreign born" (whose ages similarly were not specified).

TABLE 9. **Measures of Fertility for Chuuk State: Select Census Years**

Year	Total Persons	Total Births	Crude Birth Rate	General Fertility Rate	Total Fertility Rate
1967[a]	25,107	803	32.0	161.3	5,633
1973	31,609	855	27.0	131.0	4,383
1980[a]	37,488	1,167	31.1	145.5	4,751
1989[b]	47,871	1,596	33.3	157.8	5,312

Sources: School of Public Health n.d.; U.S. Bureau of the Census 1972, 1983a; U.S. Dept. of State 1981, 1982; Office of Planning and Statistics 1992a.

[a] Measures for 1967 and 1980 differ from those presented in Table 10, due to conflicting data. The data here are reported births in all of Chuuk State for each year and thus should be comparable across years. Unfortunately, these same data are not available for each municipality, requiring the use of different data sources for Table 10.

[b] General fertility rate and total fertility rate calculations for 1989 excluded 9 births to women of unknown age. Measures for 1989 based on data reported in the 1989 census, as the number of *reported* births (used for the other three years) was 471 less than the number recorded in the census.

ued to dominate lagoon demography, together accounting for nearly 48 percent of the total. The changes in the outer islands varied, some gaming and others losing population since 1967.

The age-sex composition of the 1973 Chuuk State population generally resembled that reported in 1967, featuring slightly more males than females, a relatively large proportion of individuals aged 25 years or less, and a median age of 16.5 years (see Figure 4). The age structure of individual municipalities once again varied widely (Table 13), though in some cases key differences provide clues to the causes of population growth that occurred after 1967. For example, the outer islands contained relatively more individuals aged 15 years or younger and 60 years or older, and relatively fewer individuals aged 15-24 years, than did Chuuk Lagoon--suggesting that many persons aged 15-24 years may have moved to the lagoon. Age composition discrepancies are particularly obvious for Weno, the municipality that experienced the greatest population growth between 1967 and 1973--with relatively large percentages of residents in the two central age groups suggesting immigration from other parts of the state to capitalize on the educational or employment opportunities in the emerging population center.

TABLE 10. **Fertility Measures by Municipality: 1967 and 1980**

Area	1967					1980				
	Total Persons	Total Births[a]	Crude Birth Rate	General Fertility Rate	Total Fertility Rate	Total Persons	Total Births	Crude Birth Rate	General Fertility Rate	Total Fertility Rate
Chuuk State	25,107	931	37.1	159.1	5,706.	37,488	1,302	34.7	162.3	5,675
Chuuk Lagoon	18,141	701	38.6	167.9	6,040	28,328	970	34.2	160.4	5,529
Eot	217	8	36.9	166.7	8,667	181	11	60.8	268.3	6,435
Fanapanges	306	7	22.9	109.1	3,569	401	4	10.0	47.1	2,390
Fefen	2,042	66	32.3	157.9	5,663	3,076	118	38.4	178.8	6,692
Parem	134	4	29.9	181.8	5,833	225	17	75.6	386.4	13,931
Ramanum	283	15	53.0	190.5	5,500	462	12	26.0	139.5	4,207
Siis	244	8	32.8	153.8	5,446	324	36	111.1	461.5	22,192
Tol	4,486	176	39.2	167.6	5,903	6,705	228	34.0	168.0	5,820
Tonoas	2,021	76	37.6	170.8	6,733	3,223	118	36.6	183.5	6.384
Udot	874	40	45.8	215.2	7,280	1,082	46	42.5	212.0	6,815
Uman	1,621	59	36.4	158.5	5,994	2,298	106	46.1	212.4	7,004
Weno	5,913	242	40.9	168.5	6,020	10,351	274	26.5	117.3	3,853
Outer Islands	6,966	230	33.0	136.8	4,863	9,160	332	36.2	168.0	6,106
Fananu	155	6	38.7	206.9	7,500	235	7	29.8	142.9	5,256
Murillo	235	5	21.3	111.1	2,265	325	19	58.5	339.3	12,016
Nomwin	279	7	25.1	90.9	4.190	322	12	37.3	179.1	5.494

Ta	249	7	28.1	87.0	2,986	295	9	30.5	142.9	4,520
Losap	452	16	35.4	150.5	5,872	587	9	15.3	75.0	2,536
Nama	534	29	54.3	226.1	7,797	1,072	32	31.3	162.4	5,359
Piis-Emmwar	217	12	56.3	238.1	7,917	240	6	25.0	133.3	3,778
Makur	50	2	40.0	NA	NA	97	7	72.2	333.3	18,833
Onanu	37					75	3	40.0	214.3	6,667
Onou	38	4	105.3	333.3	4,167	59	2	33.9	166.7	3,750
Onoun	242	15	62.0	269.2	9,684	434	29	66.8	276.2	14,374
Piherarh	67	3	44.8	NA	NA	118	5	42.4	227.3	7,083
Houk	290	6	20.7	67.8	1,955	205	14	68.3	285.7	9,718
Pollap	304	14	46.1	218.2	6,667	427	5	11.7	46.3	2,371
Polowat	410	12	29.3	116.3	6,001	441	21	47.6	218.8	8,769
Tamatam	128	8	62.5	280.0	6,833	188	9	47.9	243.2	10,750

Sources: School of Public Health n.d.; U.S. Bureau of the Census 1983b.

Note: Includes infants born to mothers aged < 15, >49, and of unknown age; the "unknown" group is used for crude birth rate but not general or total fertility rates.

[a] 1967 natality based on infants aged 1 year and younger and thus excludes those who were born alive but died during the first year of life before the survey date.

TABLE 11. **Registered Deaths in Chuuk State by Age Group: 1967, 1973, and 1980**

Age Group	1967[a]	1973	1980
	Number		
Total Deaths	189	83	184
	Percentage		
All Ages	100.0	100.0	100.0
< 1	16.9	16.9	26.6
1-4	13.8	9.6	13.6
5-9	2.6	1.2	2.2
10-14	1.1	1.2	1.1
15-19	-	-	2.2
20-24	1.6	3.6	2.2
25-29	0.5	1.2	3.3
30-34	1.6	4.8	3.3
35-39	5.8	4.8	1.1
40-44	1.6	2.4	4.3
45-49	3.7	7.2	3.8
50-54	5.3	1.2	4.3
55-59	3.7	8.4	7.1
60-64	7.9	10.8	5.4
65-69	3.2	7.2	5.4
70-74	11.1	8.4	4.3
75+	10.6	10.8	9.8

Sources: 1967 calculation based on deaths in the 11.5 months preceding the 1967 census, as presented in School of Public Health n.d.; 1973 and 1980 calculations based on deaths in calendar year, presented in U.S. Dept. of State 1982.

[a] Does not include 17 persons whose age at death was "not specified" and thus may not sum precisely to 100.0%.

Despite the growth and the youthful 1973 population, available data indicate a *decline* in fertility between 1967 and 1973 for all three measures considered (see Table 9). Although the age-specific distribution of mortality in 1973 generally resembled that reported for 1967 (see Table 11), mortality rates were lower in 1973 for all but one age group presented and the crude death rate decreased considerably (see Table 12)--preserving an excess of births over deaths and yielding similar crude rates of natural increase (crude birth rate minus crude death rate) for both census years. Mobility data for the TTPI-born population of Chuuk State in 1973 support the proposition

TABLE 12. **Age-Specific Death Rates in Chuuk State: 1967, 1973, and 1980**

Age Group	1967[a]	1973[a]	1980
Total	7.53	2.63	4.91
<1	34.33	10.61	34.85
1-4	8.10	1.77	4.69
5-9	1.28	0.21	0.70
10-14	0.60	0.25	0.41
15-19	-	-	0.99
20-24	1.92	1.14	1.22
25-29	0.78	0.52	2.10
30-34	2.29	3.03	2.72
35-39	9.25	2.74	1.52
40-44	3.06	1.61	6.46
45-49	7.24	5.85	5.79
50-54	13.21	0.96	8.21
55-59	13.26	9.87	14.08
60-64	26.36	11.21	12.85
65-69	18.52	12.40	17.15
70-74	80.77	20.23	22.60
75+	81.30	29.13	55.73

Sources: See Table 11.

[a] Includes individuals whose age group was "not stated"; 1967 total also includes 17 deaths where age was "not specified."

presented above concerning population change in different areas: Chuuk Lagoon contained markedly higher percentages of individuals who considered another portion of Chuuk State or the TTPI home (Table 14). Much of this tendency is due to the heavy movement to Weno Island. Relatively large percentages of individuals living in Onoun and Satawan municipalities in 1973 also considered another part of Chuuk State home--having grown considerably since 1967 as both assumed the role of subdistrict centers, each featuring (among other things) one of the state's two outer-island junior high schools. In contrast, most outer islands both received and contributed relatively few migrants, the greatest emigration coming from the Mortlocks (Connell 1983:25).

Regional Demography in 1980

The U.S. Bureau of the Census conducted its second census of Chuuk State in 1980, recording a population that had grown by 5,879 persons over the preceding seven years at an annual average of 2.5 percent (see Table 2; U.S.

TABLE 13. **Population by Age and Municipality: 1973**

Area	Total Persons	Age Group (Percentage)[a] <15	15-24	25-59	60+
Chuuk State	31,609[b]	46.3	19.5	27.6	6.1
Chuuk Lagoon	24,216	45.4	20.6	27.6	5.9
Eot	192	43.8	23.4	27.1	5.7
Fanapanges	341	45.7	18.8	30.5	4.7
Fefen	2,478	50.1	16.4	27.3	6.0
Parem	203	43.8	20.2	26.1	9.4
Ramanum	375	52.5	11.2	28.8	6.9
Siis	241	50.6	14.9	25.7	7.5
Tol	5,439	49.1	18.0	25.9	6.5
Tonoas	2,558	49.1	17.2	26.6	6.0
Udot	930	49.2	15.1	26.3	9.2
Uman	1,891	49.8	16.7	25.9	6.3
Weno	9,568	39.5	25.8	29.2	5.0
Outer Islands	7,350	49.6	15.8	27.5	7.0
Fananu	179	50.3	15.6	28.5	4.5
Murillo	203	58.6	14.3	20.7	6.0
Nomwin	293	53.6	13.7	30.0	2.7
Ruo	180	53.3	16.7	26.1	3.9
Ettal	266	48.1	12.0	32.0	7.9
Kuttu	383	47.5	11.5	31.9	8.9
Lukunoch	505	48.7	13.3	30.7	7.3
Moch	443	46.0	14.7	31.8	7.2
Namoluk	263	56.3	5.3	31.2	7.2
Oneop	404	49.8	11.9	29.7	8.4
Satawan	826	36.7	38.4	21.2	3.8
Ta	229	43.7	14.4	33.2	8.7
Losap	438	55.9	9.1	25.8	8.7
Nama	702	57.5	9.1	23.9	9.3
Piis-Emmwar	226	55.8	11.9	22.1	10.2
Makur	66	57.6	10.6	24.2	6.1
Onanu	47	44.7	6.4	42.6	6.4
Onou	41	58.5	-	36.6	4.9
Onoun	375	37.3	37.6	19.5	5.3
Piherarh	111	53.2	13.5	27.9	4.5
Houk	265	53.2	9.1	33.2	4.2
Pollap	316	54.4	13.3	26.3	6.0
Polowat	435	48.7	9.7	30.6	11.0
Tamatam	154	59.1	3.9	29.9	7.1

Source: Office of Census Coordinator 1975.

[a] Percentages do not sum to precisely 100.0 due to exclusion of 151 individuals whose ages were "not specified."

[b] Includes 43 individuals whose place of residence was "not specified."

TABLE 14. **TTPI-born Population by Municipality of Usual Residence, According to Home District: 1973**

Usual Residence	Total Persons	Home District (Percentage)			
		Same Municipality	Elsewhere in Chuuk	Elsewhere in TTPI	Outside TTPI
Chuuk State	31,218	83.3	16.1	0.6	-
Chuuk Lagoon	23,889	80.7	18.5	0.8	-
Eot	192	90.6	9.4	-	-
Fanapanges	341	95.9	4.1	-	-
Fefen	2,474	94.3	5.6	0.1	-
Parem	203	94.6	5.4	-	-
Ramanum	375	93.6	6.4	-	-
Siis	241	88.4	11.2	0.4	-
Tol	5,415	97.0	2.9	0.1	-
Tonoas	2,539	92.2	7.4	0.3	-
Udot	929	91.1	8.9	-	-
Uman	1,890	97.7	2.2	0.1	-
Weno	9,290	58.1	40.0	1.9	-
Outer Islands	7,329	91.7	8.3	0.1	-
Fananu	179	98.9	1.1	-	-
Murillo	203	98.0	2.0	-	-
Nomwin	289	98.3	1.7	-	-
Ruo	180	98.3	1.1	0.6	-
Ettal	266	95.1	4.9	-	-
Kuttu	383	100.0	-	-	-
Lukunoch	504	97.8	2.2	-	-
Moch	443	98.0	2.0	-	-
Namoluk	263	97.3	2.3	0.4	-
Oneop	404	95.0	5.0	-	-
Satawan	816	62.9	37.1	-	-
Ta	228	93.4	5.7	0.9	-
Losap	438	98.4	1.6	-	-
Nama	702	99.1	0.9	-	-
Piis-Emmwar	225	99.6	-	0.4	-
Makur	66	83.3	16.7	-	-
Onanu	47	91.5	8.5	-	-
Onou	41	100.0	-	-	-
Onoun	371	63.1	36.9	-	-
Piherarh	111	79.3	19.8	0.9	-
Houk	265	95.5	4.5	-	-
Pollap	316	100.0	-	-	-
Polowat	435	99.3	0.7	-	-
Tamatam	154	90.3	9.7	-	-

Source: Office of Census Coordinator 1975.

Note: Calculations do not include 391 individuals whose usual residence or home district was "not stated."

Bureau of the Census 1983a). Most growth once again occurred in Chuuk Lagoon, though that area's share of the state population declined slightly from the 1973 level (see Table 3). Weno and Tol municipalities continued to contain the greatest percentages of lagoon inhabitants, together accounting for almost 46 percent of the state total--the slight decline in lagoon demographic dominance accounted for by the decrease in Weno's share of the state population.

The 1980 population remained youthful, with a median age of 16.5 years

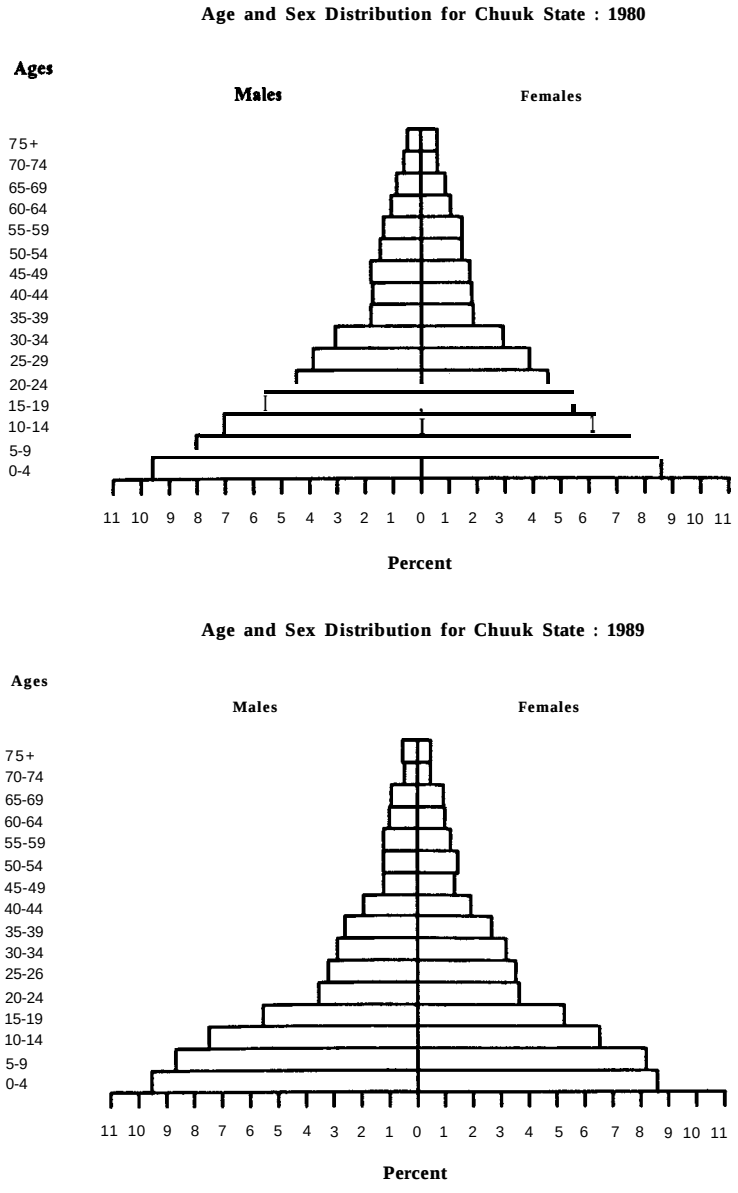


FIGURE 5. **Population pyramids: 1980, 1989.**

(U.S. Bureau of the Census 1983a:14), and contained slightly more males than females (Figure 5). But the age structure of different portions of Chuuk State changed between 1973 and 1980, with Chuuk Lagoon containing a greater percentage of individuals younger than 15 years and a smaller percentage of individuals aged 15-24 years than the outer islands (Table 15). Weno Municipality once again featured proportionally more individuals aged 15-59 years than the state as a whole, suggesting that its attraction for education- and working-age persons persisted. Nama Island, which experienced a demographic increase of more than 45 percent between 1973 and 1980, featured a particularly young population in the latter year--nearly 52 percent were aged 15 years or younger.

Fertility data for Chuuk State as a whole indicate a resurgence of reproduction levels towards those recorded in 1967, with all three measures considered in this study higher than 1973 levels (see Table 9). Municipality-specific fertility, once again measured with different data than those used for the entire state, supports the general picture of resurging fertility--though with considerable geographic variability as natality generally was higher on the outer islands than in the lagoon (see Table 10). One point worth noting is the relatively low fertility for Weno Island, with values for all three measures calculated well below state levels. Statewide mortality also increased beyond 1973 levels, with growth particularly evident in infant mortality and mortality of individuals aged 75 years or older (see Tables 11 and 12).

Mobility within the state continued to play an important role in shaping the geographic distribution of population. Somewhat surprisingly, outer-island municipalities received more migrants than their lagoon counterparts, at least over the short term (Table 16). As usual, specific emigration patterns are more difficult to trace with available data--such as the surge in movement from Namoluk Atoll to Chuuk Lagoon during the mid-1970s in response to emerging educational opportunities in the lagoon (Marshall 1979a:3-5). The relatively large influx to outer-island municipalities by 1980 may represent return migration of outer islanders from Chuuk Lagoon in response to depressed employment opportunities in the lagoon during the late 1970s (Hezel and Levin 1990:53-56; see also Connell 1983:39-41).

Regional Demography in 1989

In 1989 the FSM Office of Planning and Statistics conducted the most recent census of Chuuk State (Office of Planning and Statistics 1992a). Average annual demographic growth of 2.8 percent since 1980 added nearly 10,400 more persons as the state population approached 47,900 (see Table 2). Most of the demographic increase during the 1980s occurred in Chuuk

TABLE 15. **Population by Age and Municipality: 1980**

Area	Total Persons	Age Group (Percentage) <15	15-24	25-59	60+
Chuuk State	37,488	46.4	19.5	28.6	5.4
Chuuk Lagoon	28,328	46.9	19.2	28.9	5.0
Eot	181	42.0	21.5	29.3	7.2
Fanapanges	401	47.4	21.9	25.2	5.5
Fefen	3,076	46.5	20.4	27.8	5.4
Parem	225	43.6	19.6	28.4	8.4
Ramanum	462	53.9	17.5	26.2	2.4
Siis	324	46.9	17.6	26.5	9.0
Tol	6,705	49.6	18.4	26.7	5.3
Tonoas	3,223	49.3	18.4	27.2	5.1
Udot	1,082	48.9	18.9	26.2	6.0
Uman	2,298	46.6	19.0	28.9	5.5
Weno	10,351	44.2	19.7	31.7	4.4
Outer Islands	9,160	45.0	20.5	27.7	6.7
Fananu	235	50.2	22.6	23.4	3.8
Murillo	325	51.4	18.2	24.9	5.5
Nomwin	322	49.7	13.0	31.7	5.6
Ruo	293	46.4	19.8	29.0	4.8
Ettal	446	35.2	26.7	31.6	6.5
Kuttu	483	47.4	13.3	30.4	8.9
Lukunoch	666	42.2	20.6	32.0	5.3
Moch	632	43.8	18.8	29.1	8.2
Namoluk	324	44.1	21.0	26.9	8.0
Oneop	480	42.1	17.5	31.3	9.2
Satawan	767	44.5	20.6	29.9	5.1
Ta	295	43.1	21.4	29.8	5.8
Losap	587	45.0	21.8	27.6	5.6
Nama	1,021	51.9	18.2	22.2	7.6
Piis-Emmwar	240	42.5	23.3	28.3	5.8
Makur	97	49.5	22.7	19.6	8.2
Onanu	75	46.7	18.7	26.7	8.0
Onou	59	54.2	6.8	33.9	5.1
Onoun	434	37.8	37.3	20.0	4.8
Piherarh	118	48.3	13.6	28.0	10.2
Houk	205	42.9	17.1	32.2	7.8
Pollap	427	44.7	25.3	24.4	5.6
Polowat	441	40.1	20.0	28.3	11.6
Tamatam	188	51.6	19.7	24.5	4.3

Source: U.S. Bureau of the Census 1983a.

TABLE 16. **Population by Municipality, According to Place of Residence in 1975: 1980**

Area	Total Persons[a]	Place of Residence in 1975 (Percentage)			
		Same Municipality	Elsewhere in Chuuk	Elsewhere in TTPI	Outside TTPI
Chuuk State	28,914	92.2	6.8	0.4	0.6
Chuuk Lagoon	22,189	93.7	5.4	0.4	0.6
Eot	148	98.6	0.7	0.7	-
Fanapanges	288	97.9	2.1	-	-
Fefen	2,506	94.6	4.6	0.3	0.4
Parem	185	99.5	0.5	-	-
Ramanum	362	98.9	1.1	-	-
Siis	255	97.3	2.4	-	0.4
Tol	5,202	97.4	2.2	0.2	0.2
Tonoas	2,516	98.6	1.0	0.2	0.2
Udot	841	95.2	4.4	0.4	-
Uman	1,783	79.6	19.6	0.1	0.6
Weno	8,103	91.6	6.6	0.6	1.2
Outer Islands	6,725	87.3	11.5	0.6	0.6
Fananu	190	97.9	2.1	-	-
Murillo	259	99.6	0.4	-	-
Nomwin	238	99.6	0.4	-	-
Ruo	228	96.9	1.3	-	1.8
Ettal	339	85.8	11.5	1.8	0.9
Kuttu	373	34.0	63.8	1.3	0.8
Lukunoch	379	100.0	-	-	-
Moch	504	85.1	14.1	0.4	0.4
Namoluk	260	85.4	10.8	1.5	2.3
Oneop	397	68.5	29.5	1.8	0.3
Satawan	622	96.6	1.4	0.6	1.3
Ta	231	76.6	19.0	3.0	1.3
Losap	345	99.7	0.3	-	-
Nama	807	85.3	13.5	0.5	0.7
Piis-Emmwar	193	78.8	20.2	0.5	0.5
Makur	76	92.1	7.9	-	-
Onanu	61	85.2	14.8	-	-
Onou	44	100.0	-	-	-
Onoun	305	91.1	8.5	0.3	-
Piherarh	101	93.1	5.9	1.0	-
Houk	143	88.8	11.2	-	-
Pollap	359	98.9	1.1	-	-
Polowat	119	100.0	-	-	-
Tamatam	152	99.3	-	-	0.7

Source: U.S. Bureau of the Census 1983b.

[a] Includes only those individuals older than 5 years of age; excludes 7 individuals whose place of residence in 1975 was not given.

Lagoon; all component municipalities of that island group witnessed population growth since 1980, the lagoon total accounting for more than 80 percent of 1989 Chuuk State residents (see Table 3). Together Weno and Tol municipalities contained 50 percent of the state population, Weno accounting for nearly one-third of the total. Several outer-island municipalities, in contrast, experienced depopulation during the 1980s.

The 1989 population of Chuuk State was the youngest ever recorded, with the median age dropping to 15.8 years; males once again slightly exceeded females (see Figure 5). The age composition of the major geographic regions was similar to that recorded in 1973, with the lagoon containing proportionally fewer individuals younger than 15 years and proportionally more aged 15-59 years (Table 17). These tendencies were particularly evident in Weno Municipality--likely another indication of people moving to Weno Island for employment and education. Age composition once again varied greatly between individual municipalities both within the lagoon and in the outer islands.

Natality increased over 1980 levels for all three fertility measures employed (see Table 9). Limited mortality data are available for Chuuk State in 1989, with estimates of the crude death rate ranging between 6.5 and 8.7 (Office of Planning and Statistics 1992a).[7] Much of the population growth between 1980 and 1989 thus apparently occurred as a consequence of fertility exceeding mortality, continuing the trend seen following World War II. Mobility once more affected the geographic distribution of population: most of this mobility occurred in Chuuk Lagoon, led again by Weno Island (Table 18)--further evidence that much of the population growth there during the 1980s resulted from in-migration. Although mobility data for certain outer-island municipalities indicated considerable in-migration a well, all tended to involve small populations that would limit the absolute number of persons relocating.

Evolving Regional Demography in Chuuk State: Causes, Results, and Repercussions

The Mechanisms of Population Change in Chuuk State

Available evidence indicates that Chuuk State population declined during the late nineteenth and early twentieth centuries, though the particulars of this depopulation are scanty. During the period covered by systematic censuses, the demography of the area went through two phases: a period when population remained relatively constant, during the Japanese period of administration, and a period of sustained, often rapid population growth fol-

TABLE 17. **Population by Age and Municipality: 1989**

Area	Total Persons	Age Group (Percentage)[a] <15	15-24	25-59	60+
Chuuk State	47,871	48.2	17.7	28.2	5.3
Chuuk Lagoon	38,341	47.7	18.6	28.3	4.9
Eot	279	54.1	14.0	24.7	7.2
Fanapanges	447	47.7	16.8	32.4	3.1
Fefen	3,902	50.1	16.6	27.8	5.4
Parem	350	50.3	12.9	32.6	4.3
Ramanum	679	48.5	20.6	26.5	4.3
Siis	438	53.0	14.2	26.3	5.7
Tol	8,346	51.1	17.6	26.0	4.9
Tonoas	3,870	48.8	17.9	27.6	5.4
Udot	1,513	51.4	16.8	26.5	5.0
Uman	2,895	50.4	15.4	28.0	5.9
Weno	15,622	43.8	20.8	30.0	4.4
Outer Islands	9,530	50.2	14.3	28.1	7.0
Fananu	238	54.2	13.9	26.5	5.0
Murillo	296	54.1	10.5	28.4	5.4
Nomwin	386	50.3	11.9	30.8	6.7
Ruo	398	50.5	15.8	28.9	4.0
Ettal	420	39.5	14.0	36.2	9.8
Kuttu	423	47.5	11.3	29.8	11.1
Lukunoch	745	47.2	16.0	30.6	5.9
Moch	604	52.0	11.9	28.1	7.9
Namoluk	310	51.3	11.9	29.0	7.7
Oneop	534	50.4	9.9	30.7	8.1
Satawan	885	45.3	20.8	28.7	5.2
Ta	291	48.8	16.5	26.1	7.2
Losap	475	49.5	14.1	26.7	9.1
Nama	897	55.0	11.6	24.9	7.8
Piis-Emmwar	320	57.2	9.4	28.1	5.3
Makur	121	58.7	12.4	24.0	5.0
Onanu	80	57.5	13.8	22.5	6.3
Onou	91	57.1	11.0	25.3	5.5
Onoun	513	42.5	31.6	21.8	3.9
Piherarh	139	55.4	12.9	23.0	7.9
Houk	346	52.9	9.2	32.1	5.8
Pollap	315	59.0	8.9	25.1	7.0
Polowat	477	48.4	13.0	26.8	11.1
Tamatam	226	54.9	11.9	27.4	5.8

Source: Office of Planning and Statistics 1992a.

[a] Percentages may not sum precisely to 100.0 due to exclusion of 255 individuals whose ages were "not stated."

TABLE 18. **Population by Municipality, According to Place of Legal Residence: 1989**

Area	Total Enumerated[a]	Legal Residence (Percentage)	
		Same Municipality	Other Municipality
Chuuk State	47,306	86.4	13.6
Chuuk Lagoon	37,813	83.9	16.1
Eot	278	80.9	19.1
Fanapanges	447	99.1	0.9
Fefen	3,891	97.5	2.5
Parem	350	88.0	12.0
Ramanum	677	99.4	0.6
Siis	436	97.5	2.5
Tol[b]	NA	NA	NA
Patta	1,294	97.3	2.7
Polle	1,323	96.1	3.9
Tol	4,822	98.3	1.7
Wonei	873	98.7	1.3
Tonoas	3,858	96.5	3.5
Udot	1,502	96.1	3.9
Uman	2,891	98.7	1.3
Weno[c]	NA	NA	NA
Fono	368	99.2	0.8
Weno	14,803	63.2	36.8
Outer Islands	9,493	96.1	3.9
Fananu	237	98.3	1.7
Murillo	295	96.3	3.7
Nomwin	384	99.2	0.8
Ruo	397	99.2	0.8
Ettal	415	93.5	6.5
Kuttu	421	98.8	1.2
Lukunoch	742	98.5	1.5
Moch	602	99.2	0.8
Namoluk	310	100.0	-
Oneop	534	99.3	0.7
Satawan	883	90.7	9.3
Ta	290	99.3	0.7
Losap	473	99.2	0.8
Nama	895	99.6	0.4
Piis-Emmwar	319	100.0	-
Makur	121	68.6	31.4
Onanu	80	80.0	20.0
Onou	89	78.7	21.3

(continued)

TABLE 18. Continued

Area	Total Enumerated[a]	Legal Residence (Percentage)	
		Same Municipality	Other Municipality
Onoun	513	77.6	22.4
Piherarh	138	97.1	2.9
Houk	343	100.0	-
Pollap	312	99.4	0.6
Polowat	474	99.8	0.2
Tamatam	226	94.2	5.8

Source: Office of Planning and Statistics 1992a.

[a] Does not include individuals whose legal residence was not stated.

[b] The 1989 census treated Patta, Polle, Tol, and Wonei separately when collecting data on legal residence; because residence referred specifically to these particular places, unlike population data we cannot present a combined figure for "Tol Municipality" that would preserve geographic comparability with other census years.

[c] The 1989 census treated Fono and Weno separately when collecting data on legal residence; because residence referred specifically to these particular places, unlike population data we cannot present a combined figure for "Weno Municipality" that would preserve geographic comparability with other census years.

lowing World War II. In the process of discussing available demographic data and vital statistics, I briefly noted possible reasons for population change. I now examine the mechanisms underlying the evolution of Chuuk State regional demography more closely, focusing both on total population and the geographic arrangement of this population.

Although depopulation apparently began in Chuuk State during the second half of the 1800s, available evidence indicates that with few exceptions the dramatic declines witnessed elsewhere in Micronesia never occurred." As discussed earlier, due largely to its extended isolation from sustained contact with people from outside Micronesia, for much of the nineteenth century Chuuk State largely avoided many of the diseases that decimated population in other places. Eventually foreign diseases did come, with Chuuk Lagoon and certain outer islands suffering from their effects by the 1870s. Smallpox, measles, tuberculosis, intestinal diseases, typhoid, and respiratory disorders all caused what appear to be considerable deaths from the late nineteenth century into the 1920s. Tuberculosis persisted through World War II, particularly on the outer islands (Pelzer and Hall 1946:12). In addition to increasing mortality, such diseases indirectly reduce fertility by

removing persons of reproductive age. Certain diseases also reduce fertility without causing death (see, for example, Hunt, Kidder, and Schneider 1954:40). The precise impact of these factors are uncertain due to insufficient information. Venereal diseases that decrease fertility, particularly gonorrhea (Pirie 1971), no doubt also occurred in Chuuk State, though there is little indication that they were widespread in any part of the state (probably due to limited interaction with the whalers who largely were responsible for introducing such maladies). Although population decline in part was attributable to decreased fertility resulting from introduced illnesses, most of the depopulation resulting from diseases was a consequence of increased mortality.

Other factors also contributed to depopulation in Chuuk State during the late nineteenth and early twentieth centuries. One was natural disasters, most notably typhoons that occasionally struck portions of the state--causing untold numbers of deaths directly and often leading to subsequent problems such as famine by destroying subsistence resources. In certain parts of the state, mortality due to other causes paled in comparison to the number of deaths caused by typhoons (e.g., Tolerton and Rauch n.d.:7). Another factor was warfare (See Fischer and Fischer 1957:81), apparently occurring occasionally on outer islands and incessant throughout much of the lagoon prior to German suppression of native disputes in the early 1900s (Krämer 1932:17). Data are lacking on the exact effect of warfare, though probably it was not great given the types of conflicts that characterized precontact Micronesia. Typhoons and warfare similarly acted to increase mortality, thus augmenting the main effect of diseases, but their impacts varied geographically: the effects of typhoons tended to be more pronounced in the outer islands while warfare was more prevalent in Chuuk Lagoon.

Sometime between 1900 and 1920, depopulation in Chuuk State ceased and the total Pacific Islander population leveled off at about 15,000 persons. Although relevant data once again are scanty, this generally constant population apparently was due to a rough balance between birth and death rates coupled with minimal immigration from outside the state. The slight changes documented in total population, including both the small increase between 1920 and 1930 and the small decrease between 1930 and 1935, all likely occurred due to slight shifts in fertility, mortality, and mobility patterns. The demographic changes among Pacific Islanders in Chuuk during the Japanese administration resemble those documented in the Marshall Islands during the same period (Gorenflo and Levin 1994). Overall, Chuuk State experienced neither the sustained population decline witnessed in Yap State nor the sustained population growth experienced in Kosrae and Pohnpei states (see Gorenflo 1993b; Gorenflo and Levin 1991, 1992)--although in

recent years Chuuk has witnessed the most rapid natural growth of any state in the FSM (Office of Planning and Statistics 1992b:98). As in other parts of Micronesia, one of the most important changes that occurred during the Japanese period was improved health care, helping to minimize the impact of introduced diseases.

Mobility caused relatively little demographic change throughout most of the German and Japanese administrations. Some movement within and beyond Chuuk State occurred during the German tenure, primarily to provide labor or disaster relief; a colony of people whose ancestors originally came as evacuees from the Mortlock Islands remains on Pohnpei Island, providing a continuing attraction to migrants from that Chuuk State outer-island group (Marshall 1976:39; Marshall 1979b:266). If the data on lifetime migration in 1930 are representative of the Japanese period prior to the late 1930s military preparations, few islanders from other parts of the Pacific moved to Chuuk State. Emigration also likely was minimal, apart from the (usually) temporary recruitment of laborers to work elsewhere in the Mandated Territory. By 1930 only about 10 percent of the Pacific Islanders in Chuuk State lived in a municipality different from where registered. The greatest examples of this relocation occurred in Chuuk Lagoon--led by Tonoas Island, where nearly one-third of the 1930 population came from elsewhere in the state to this growing commercial and administrative center--providing a basic preview of future mobility patterns dominated by movement to certain lagoon destinations. As the Japanese war effort increased during the late 1930s, administrators relocated increasing numbers of people within the state and brought in other islanders from outside Chuuk, though specifics on these patterns are uncertain. Although repatriation occurred following the war, the experiences and social connections developed during this period of relatively high mobility no doubt helped shape more recent migration patterns.

The U.S. Navy estimated the population of Chuuk State at slightly fewer than 13,900 in August 1946, a loss of more than 1,200 islanders since the 1935 census. This was probably largely the effect of World War II, resulting from American aerial attacks as well as starvation and disease late in the war. Following the war, the population began a period of prolonged growth, increasing at average annual rates ranging from 1.2 to 3.9 percent between census years (see Table 2). The reason for this growth appears to be a shift in the balance between mortality and fertility. Although an absence of reliable data continues to hinder a precise study of vital statistics, available evidence indicates that fertility increased slightly from prewar levels while mortality decreased substantially (see Marshall 1975:176-178; Nason 1975b:132-133; see also Tables 9, 10, and 12). The introduction of modem medicine and

health care largely eradicated the diseases that had continued to take a demographic toll well into the Japanese period while improving the chances for survival (particularly) during the early and later years of life. The result was rapid population growth largely due to natural increase.

Mobility played a varying role in Chuuk State demography following World War II. Available evidence from 1973, 1980, and 1989 indicates that immigration contributed little to the growing population, with relatively few individuals coming from elsewhere in the TTPI or beyond. The role of emigration, in contrast, became increasingly important over time. As of 1980, only 542 individuals born in Chuuk State resided in the United States (Barringer, Gardiner, and Levin 1993:286). But with the adoption of the Compact of Free Association in 1986, and its provision enabling FSM citizens to migrate to the United States or any U.S. territory, mobility began to siphon off Chuuk State residents to other places. The main destinations appear to be other parts of the Pacific--primarily Guam and the Commonwealth of the Northern Mariana Islands (CNMI)--as well as the United States. Researchers estimated the number of migrants to the former two destinations in 1988 at about 1,100 and 700 persons, respectively (Hezel and McGrath 1989:50-57). By 1990 the number of Chuuk-born residents of Guam had reached 1,843, with another 969 CNMI residents born in Chuuk State (U.S. Bureau of the Census 1992a:16; U.S. Bureau of the Census 1992b:15). Preliminary analyses of unpublished data from special censuses conducted by the U.S. Department of Interior Office of Territorial and International Affairs in 1992 and 1993 indicate that nearly 3,600 individuals born in Chuuk State resided in Guam with nearly 1,100 Chuuk State-born persons living in the CNMI. The reasons usually given for recent emigration from the FSM in general and Chuuk State in particular are the search for economic and (secondarily) educational opportunities (Hezel 1978; Marshall 1979a; Hezel and McGrath 1989:51-57; Flinn 1982:57-58; Rubinstein and Levin 1992:351, 380-381).

In contrast to relocation to and from Chuuk State, mobility has had a more extended influence on the arrangement of population within the state. Certain islands within Chuuk Lagoon have emerged as the main destinations of migrants, following a basic pattern established by Tonoas Island during the Japanese administration. As discussed above, population growth in particular lagoon municipalities exceeded the considerable growth experienced in the state as a whole following World War II--accounting for much of the increase in relative demographic importance witnessed by Chuuk Lagoon over the past four decades. The main migrant destination has been Weno Island, which emerged as a center of political and economic activity after the war. By 1973, more than 40 percent of the TTPI-born residents of

Weno Municipality called some other place home (see Table 14). This tendency continued: in 1989 nearly 37 percent of the residents of Weno Island were legal residents of another municipality in Chuuk State or beyond (see Table 18). The origins of most of these migrants were rural parts of Chuuk State, both within the lagoon and in the outer islands. As described for one of the outer islands in Yap State (Levin and Gorenflo 1994:126-127, 132-137), such mobility patterns can have severe cultural and economic impacts on the places of origin of migrants (see also Gorenflo and Levin 1995). Migration to the lagoon by young adults led one researcher to predict that Namoluk Atoll would eventually become a combination day-care center and old folks home (Marshall 1979a:3), although surprisingly some return migration to certain outer islands in Chuuk State has occurred recently (M. Marshall, pers. com., 1992). Onoun and Satawan atolls also have attracted migrants from other outer islands, emerging as subdistrict centers that provide certain important services, primarily education (Connell 1983:25).

Although mobility within and beyond Chuuk State requires further study, two features seem to characterize recent patterns. One is *channelized migration,* where migrants from certain places tend to move to certain destinations where people they know (primarily kin) already have relocated--such as Iras village, the settlement on Weno established by people from Pollap Atoll (see Flinn 1982; Reafsnyder 1984). A second feature is *step migration,* where individuals from rural areas migrate for a time to the main population center in Weno Municipality prior to (and in a sense in preparation for) a subsequent move to some destination beyond Chuuk State. The emergence of migration as the main force shaping the geographic distribution of the rapidly growing state population demands that more attention be focused on this important demographic process.

Statistical Measures of Changing Regional Demography in Chuuk State

Having discussed demographic change in Chuuk State and its potential causes, I now explore the nature of change in the regional distribution of population. Consistent with two other studies of regional demographic change in multiisland states in the FSM, this inquiry employs three different spatial statistics. Two of the measures, *point-to-point temporal association* and *spatiotemporal association,* provide complementary means of assessing shifts in the geographical arrangement of population over time. The third, *spatial autocorrelation,* provides a means of evaluating the nature of a spatial configuration of population at a particular point in time. For the sake of brevity, I present only brief discussions of these analytical tools below. Addi-

tional technical details appear elsewhere, focusing both on the statistical underpinnings of spatial autocorrelation (Cliff and Ord 1973, 1981) and the two temporal measures of spatial change (Gorenflo 1990:305-307) and on the application of all three techniques to regional demographic data (Gorenflo and Levin 1991, 1992).

Point-to-point temporal association assesses local change in the geographical arrangement of a region's population, focusing on the degree to which the populations of particular places at some time *t'* corresponded to the populations of those same places at an earlier time *t*--conceptually, for all municipalities *i*,

$$p_{i,t'} = f(p_{i,t}),$$

where $p_{i,t'}$ and $p_{i,t}$ denote the population of place *i* at times *t'* and *t*, respectively. The assessment of point-to-point temporal association typically uses statistical measures of correlation defined originally in a nonspatial context; here I employ Pearson's product-moment correlation coefficient and Spearman's rank-order correlation coefficient. Values for both measures range from 1.0 (perfect positive correlation) to -1.0 (perfect negative correlation).

Measures of point-to-point temporal association for patterns of regional demographic arrangement in Chuuk State indicate strong, statistically significant ($p < .01$) positive correspondence between successive census years (Table 19). Remarkably high correlation values persisted even when comparing population distributions from 1935 and 1958, two censuses separated by twenty-three years that included World War II and considerable depopulation. The results of measuring point-to-point temporal association indicate limited local change in the arrangement of Chuuk State population. Despite a population that shifted from constant size to sustained growth increasingly concentrated on certain islands in Chuuk Lagoon, the spatial configuration of people among individual places in one census year was highly correlated statistically with the spatial configuration of population among those same places in the following census year. Even when one compares configurations of population separated by longer periods of time, there is little evidence for much local change over time. The comparison between 1925 and 1989 data produced point-to-point temporal association measures of .94 and .84 for the Pearson and Spearman measures, respectively. Changes in the regional arrangement of the populations of individual places at different points in time thus occurred in small increments throughout most of the twentieth century, with the accumulated magnitude of local change still minimal after more than six decades.

Spatiotemporal association measures shifts in the spatial arrangement of

TABLE 19. **Statistical Comparisons for Chuuk State Regional Population: Between Select Census Years**

Years Compared	Point-to-Point Temporal		Spatiotemporal
	Pearson	Spearman	Quadratic Assignment
1925 & 1930	.998	.980	-.176[a]
1930 & 1935	.988	.984	-.185
1935 & 1958	.956	.940	-.192
1958 & 1967	.997	.987	-.181
1967 & 1973	.988	.971	-.184
1973 & 1980	.997	.969	-.187
1980 & 1989	.995	.933	-.187[a]
1925 & 1989	.936	.841	-.207[a]

Note: Levels of significance, unless otherwise noted, are $p < .01$.

[a] $.01 < p < .05$.

a variable over time. Through considering the population of places *and* the distance separating them, this statistic evaluates the degree to which the population of places at some time *t'* corresponded to the populations of all other places at an earlier time *t,* in an attempt to identify any trends in the geographic arrangement of people. Strong positive spatiotemporal association indicates that places at time *t'* were located close to places with similar numbers of people and far from places with dissimilar numbers of people at time *t;* strong negative spatiotemporal association, in contrast, indicates the opposite situation. I employed a quadratic assignment method of matrix comparison to calculate spatiotemporal association statistics, developed from a technique used to compare the spatial arrangement of two variables at one point in time (Hubert, Golledge, Costanzo, and Gale 1985; see Hubert and Schultz 1976; Gorenflo 1990:305-306). Here I focus on two matrices: **D,** a 35 x 35 matrix of Euclidian distances between Chuuk State municipalities, where each entry $d_{i,j}$ represents the distance separating place *i* from place *j;* and **C,** a 35 x 35 matrix containing information on the population of municipalities in Chuuk State recorded in two census years. For matrix **C,** I calculated each entry $c_{i,j}$ via the following function:

$$c_{i,j} = [\,|p_{i,t} - p_{j,t'}| + |p_{j,t} - p_{i,t'}|\,] / 2,$$

with all variables defined as above.

Comparisons of demographic data between successive census years yielded statistically significant ($p < .01$ for all comparisons but two, which were $.01 < p < .05$) negative spatiotemporal association values ranging from -0.176 to -0.192 (see Table 19). These results indicate a tendency for places at time *t'* to be close to places with different populations at time *t.* Such a situation would arise in the spatial intermingling of places with contrasting populations, such as occurs when demographic centers emerge amidst hinterlands of smaller populations. But no dramatic shifts appear in any of the comparisons between contiguous census years, the weak tendency towards similar regional arrangements of population persisting throughout the seven comparisons between sequential census years. Spatiotemporal association between 1925 and 1989 census data confirms the lack of substantial regional shifts in demographic organization, with the associated negative results only slightly greater than any comparisons of successive censuses.

To augment the statistics that explore changing population distribution over time, I also calculated spatial autocorrelation values for population distributions in each census year. Spatial autocorrelation measures the interdependence of a variable over space at one point in time. In the present research setting, strong positivespatial autocorrelation indicates a geographic distribution of population where places with similar numbers of people were proximal and places with dissimilar numbers of people were distant. In the interest of consistency, I calculated spatial autocorrelation measures with a quadratic assignment approach similar to that used to calculate spatiotemporal association (see Hubert, Golledge, and Costanzo 1981). As was the case with the spatiotemporal association calculations, resulting spatial autocorrelation values indicate weak, statistically significant negative correlations in the arrangement of population (Table 20). These results support

TABLE 20. **Spatial Autocorrelation Calculations for Chuuk State Regional Population: Select Census Years**

Year	Spatial Autocorrelation	Significance
1925	-.170	.05
1930	-.182	.01
1935	-.186	.01
1958	-.175	.05
1967	-.182	.01
1973	-.183	.01
1980	-.187	.01
1989	-.185	.01

the conclusion of a persisting weak interdigitation of settlement size over time, with no evidence of a substantial shift in the regional arrangement of population.

Repercussions of Changing Regional Demography in Chuuk State

This article so far has focused primarily on documenting and measuring the demographic changes that have occurred in Chuuk State since the beginning of contact with non-Micronesians. As usually is the case, the population changes identified are not an end in and of themselves; such developments have broader implications that include effects on other aspects of culture and society. One of the most potentially important impacts of demographic change in a setting such as Chuuk State is its effects on the organization and adaptation of a sociocultural system, with decreases and increases in population, and shifts in the regional distribution of population, embodying different challenges to adaptive success. Unfortunately, the general absence of detailed information on early sociocultural systems in Chuuk prior to the imposition of a new order by the German administration limits our understanding of these impacts--a deficiency countered, at least in part, by extremely good anthropological studies of portions of the area immediately following World War II.

The island units contained within modem Chuuk State featured societies led by hereditary rulers that anthropologists would call matrilineal chiefdoms (see Service 1971:145-169). In Chuuk Lagoon, ninety-eight such polities existed in the late 1940s, each associated with a particular piece of land (district) and comprising 64 to 127 people (Goodenough 1978:129-137). Administrative levels above the chiefdom largely were lacking, apart from temporary confederations forged between two or more districts for the purpose of waging war on other chiefdoms (Pelzer and Hall 1946:21). Variations on this theme existed on most outer islands as well, with each island unit containing one or more district chiefs (see Tolerton and Rauch n.d.:43-46; Marshall 1972:55-62; Nason 1975a:11-12; Flinn 1985:97; J. Thomas 1978: 37-38, 53; Reafsnyder 1984:117-126; Flinn 1992:48-58). Both lagoon and outer-island polities tended to be independent. Nevertheless, in a few instances interchiefdom or even inter-island (or intraisland) hierarchies emerged, such as the dominance of the Western Islands by Polowat Atoll during the nineteenth century (Damm and Sarfert 1935:171-174) and the traditional alliances formed among individual islets in the Lower Mortlocks (Nason 1970:50).

Independence in general extended to economic organization. Each household fished and collected other marine animals in addition to growing

several foods, including breadfruit, taro *(Colocasia* and *Cyrtosperma),* banana, sweet potato, and coconut (Office of the Chief of Naval Operations 1944:125; Pelzer and Hall 1946:32-48; Pelzer 1947; Gladwin and Sarason 1953:52-58; Nason 1975a:7-9; Hunter-Anderson 1991:40-42; Flinn 1992: 17-19). Limited economic exchange occurred within chiefdoms in accordance with administrative structure, with the district chief receiving first fruits. Interaction also occurred between chiefdoms, largely organized around the five island groupings composing Chuuk State and occurring in two different spheres. The most basic sphere was interaction within the separate island groupings, feasible because of the proximity of individual island units and desirable to maintain social and economic relations (e.g., Nason 1975b:122). The second sphere of interaction consisted of links between the lagoon and the outer islands--once again desirable for both social and economic reasons (Office of the Chief of Naval Operations 1944:3, 29, 49; Pelzer and Hall 1946:21-22; Gladwin and Sarason 1953:34-38; Gladwin 1970:61-63; Nason 1975b:121; Severance 1976:27-28; Goodenough 1978: 56; Oliver 1989, 1:577-580, 969-970; Flinn 1990:117). Evidence suggests that frequent travel occurred between the lagoon and the Hall and Mortlock islands, indicated by kinship ties and certain linguistic and cultural similarities (Gladwin and Sarason 1953:37-38). Interaction with the Western Islands was much less frequent, in part because ocean currents made canoe travel from these groups to the lagoon difficult at certain times of the year and in part because polities in the Western Islands were components of the Yap Empire (Lessa 1950:39). Polities in Namonuito Atoll, also part of the Yap Empire, similarly interacted less with Chuuk Lagoon than did certain other outer islands. Nevertheless, geographical and political realities made the maintenance of connections between outer islands and Chuuk Lagoon highly desirable. For outer islanders, the lagoon provided resources unavailable on their small coralline homes as well as potential refuge in times of trouble (such as typhoon devastation). The advantages realized by lagoon polities from interacting with the outer islanders are more elusive--although among groups facing persisting warfare any relationship that meant obligations and potential allegiance in times of conflict presumably was useful.

The picture of regional organization that emerges is thus one of decentralization based on separate chiefdoms, with districts forming the corresponding geographic building blocks. Unfortunately, most of the research upon which much of this scenario rests occurred at least half a century after German administrators imposed a new order--in effect combining certain districts to facilitate interaction with the new rulers and prohibiting the warfare that played such an important role in supradistrict affiliation. Neverthe-

less, although the pre-twentieth-century situation is not clearly known it probably resembled the decentralized setting described above. Available evidence suggests that pre-European districts were even smaller than those documented in the 1940s, in all likelihood producing greater sociopolitical fragmentation than described after the war. Settlement patterns similarly were more dispersed, consisting of scattered houselots that did not form communities in any sense and situated well away from the shoreline, thereby providing protection from surprise attacks over water as well as easy access to upland gardens (Pelzer and Hall 1946:20; Stark et al. 1958:7; Goodenough 1978:129). Although settlement patterns had evolved since the early days of German administration, this probably was not due to population change as much as to the forced reduction in warfare coupled with the imposed combination of native polities. Interaction patterns, in contrast, show some consistency with aboriginal patterns as links within island groupings and between the outer islands and Chuuk Lagoon persist to this day--in part a consequence of the arrangement of island units throughout the state, though current interaction patterns indicate an emphasis on Weno Municipality as its relative political and economic importance grows.

Limited information certainly restricts what one can say about the impact of depopulation on Chuuk State. Such effects have been dramatic in other parts of Micronesia. The removal of entire hereditary lines of authority on Kosrae due to massive depopulation, for example, helped produce considerable social and administrative reorganization of that society (see Gorenflo 1993b:108-109). Moreover, at about the same time that depopulation was occurring in Chuuk Lagoon and on certain outer islands the German administration began to impose a new organizational structure. Although the ultimate reason for combining certain districts might have been a reaction to depopulation, it more likely resulted from the directions of new colonial rulers. Ultimately, it is the imposition of fundamental organizational changes, first through combining aboriginal polities at the insistence of German and Japanese administrators and then through complying with the democratic guidelines introduced by the U.S.-TTPI administration, that clouds our understanding of demography-related changes in Chuuk State throughout most of the twentieth century. Nevertheless, two things are certain: population has grown markedly and become increasingly centralized since 1935, and these demographic trends have introduced both adaptive limitations as well as development potential to this multiisland polity.

High demands on the current economic system and limited resources paint a gloomy picture for Chuuk State in the 1990s--even in comparison to other parts of the FSM (see Office of Planning and Statistics 1992b:99-100). Wages are markedly lower than elsewhere in the federation, exacer-

bated by 23 percent unemployment in the early 1990s and an increased need for cash income resulting from low household subsistence production. Moreover, with a state debt incurred during the first year of the Compact of Free Association and a 10:1 annual trade deficit, the state government faces growing pressure to increase productivity and devise various means of raising revenue. To provide increased earnings, the Chuuk State government will focus on commercial fishing, tourism, and agriculture, the three sectors identified as having the greatest potential to provide economic growth during the 1990s (Office of Planning and Statistics 1992b:107-108).

Although the three sectors show certain promise, their development would place additional pressure on a fragile natural environment. In addition to the obvious need to establish adequate markets and the means to supply them in a timely manner, commercial fishing can strain marine resources--although an emphasis on pelagic species in the 180,000 square miles of water within the state could provide rich, sustainable opportunities if used wisely (see Office of Planning and Statistics 1992b:97). Tourism generates what would appear to be much less pressure on the natural environment. However, much tourism development would focus on sport diving among the wrecks sunk during World War II in Chuuk Lagoon. Developing a diving industry capable of generating increased revenues of the magnitude required would require a major increase in volume, which in turn would require significant development of supporting tourism infrastructure (hotels, restaurants, transportation facilities, and so forth)--once again potentially introducing substantial pressure on the natural (as well as sociocultural) environment. The third focus of development attention is agriculture. The main goal in developing this sector is to reduce the reliance on imported food, which is the highest in the FSM. Unfortunately, in addition to the obvious limitations of agricultural development on the coralline outer islands there also are constraints on increasing the agricultural production on high islands in Chuuk Lagoon (Pelzer and Hall 1946:2). Most of the high islands in the lagoon consist of steep, rugged uplands surrounded by a narrow band of coastal lowlands--the former better suited for subsistence agriculture and woodlands but prone to erosion, the latter largely mangrove swamp, fresh-water marshes, beaches, and raised beach deposits less desirable for growing many types of food (Stark et al. 1958:43-47; Soil Conservation Service 1983:1). In all, only about 25 percent of the land area of the main high islands are well suited for agriculture, with that land of limited fertility and susceptible to considerable erosion (Soil Conservation Service 1983:17).

Development plans with few exceptions have focused on Chuuk Lagoon, particularly Weno Island (Office of Planning and Statistics 1985, 1992b).

For example, of the ten development sectors in the current five-year plan only one (tourism) explicitly includes the outer islands (Office of Planning and Statistics 1992b:108). Onoun and Satawan municipalities officially became subdistrict centers in 1973. The most noteworthy characteristic of these two places is the presence of an outer-island junior high school in each (M. Thomas 1978:31; Connell 1983:25; Flinn 1990:116; Flinn 1992:41-42). Both have attracted population; to a lesser extent, both also have attracted other types of development that at least one researcher likens to urbanization (Connell 1983:133-134). Unfortunately, apart from decentralized development focused on these two municipalities beginning in the early 1970s, the outer islands receive limited attention in planning for the state's future.

Given the development emphasis on Weno Island, the continuing flow of people there is understandable. But such rapid growth can have many shortcomings. In addition to the obvious pressures on the environment, economy, and government (particularly public services), several social problems recently documented (primarily) on Weno Island, including alcohol abuse, violence, and a dramatic increase in teen suicides, may well be a consequence of rapid demographic growth and the sociocultural changes that have accompanied it (see Marshall 1979c; Hezel 1984, 1987). Rural-urban migration also can affect the places migrants leave behind, particularly if it mainly involves one sector of a population. In the case of relatively small, relatively traditional outer islands, emigration of young adults tends to remove an important economic and social component of the societies (see Levin and Gorenflo 1994:132-138). Economic survival of such places may be a problem, although increased remittances often compensate for the loss of traditional productivity. But the sociocultural systems themselves cannot be so easily compensated, ultimately threatening the very existence of traditional outer-island ways of life.

Demographic change during the past five decades has resulted in a series of major adaptive challenges to the citizens and government of Chuuk State. An increasing number of people, many living in Weno Municipality, concentrate demands and productivity potential in places that can neither support major increases in production nor afford increased imports. Outer islands and rural portions of Chuuk Lagoon face different challenges, with many losing segments of their populations through emigration--undermining traditional economies as well as social systems. The lengths to which migrants go to maintain connections with their outer-island homes, retaining land rights (Nason 1970:39) and even organizing their residential patterns in the lagoon to mimic those found on the original islands (Flinn 1982:167, 186-193; Reafsnyder 1984:213-218), mitigate the effects of their absence only partially. Emigration beyond Chuuk State has had impacts similar to those

experienced on the outer islands, providing a means of relieving demographic pressure that at the same time removes productivity potential. In principle, reducing the trade deficit in food should be within the abilities of an island group that until relatively recently featured a subsistence economy. But ultimately, successful development will require control of population growth and movement, accommodating modern opportunities as they become available while acknowledging the limitations of development options.

Concluding Remarks

To anyone familiar with the general demographic history of Micronesia, the above story will seem like a variation on a common theme. As with most of the region, Chuuk State experienced depopulation following the onset of sustained contact with non-Micronesians. But the disease-related declines that decimated much of Micronesia occurred later in Chuuk State than elsewhere in this part of Oceania, its effects generally much less severe. The lessened impact of diseases was compensated for, at least in part, by typhoons, labor recruitment, and warfare. Population decline eventually ceased, with numbers generally leveling off during most of the Japanese administration and beginning a period of sustained growth following World War II. Demographic growth has been substantial, eventually reaching levels comparable to or exceeding those experienced in most other parts of Micronesia. Perhaps the most dramatic aspect of population increase in Chuuk State has been the absolute magnitude, continuing despite many residents emigrating to the CNMI, Guam, and probably the United States.

Demographic growth in Chuuk State has been accompanied by a change in the geographic distribution of population. The dominant characteristic of this change has been migration to certain places in Chuuk Lagoon (primarily Weno) from rural parts of the lagoon and several outer islands. But the evolution of this geographic arrangement has been incremental. The statistical measures used to assess local change in the regional distribution of population identified relatively little such change: a population configuration in one census year shared a strong statistical correlation with the configuration in a subsequent year, even when separated by more than two decades and a major war. By 1989, the geographic arrangement of population continued to register a high correlation with the distribution documented sixty-four years earlier. The statistical measure used to assess regional change in the spatial distribution of population indicated a slight negative-correlation as demographic configurations evolved over time. This same negative correlation characterized all comparisons between census years conducted in this study--indicating a consistency in the regional demography of Chuuk State

throughout much of the twentieth century. Evidence of limited local and regional change in the arrangement of population suggests the preservation of demographic subregions, a tendency supported by spatial autocorrelation measures. Although subregions or subdistricts largely are a consequence of geographic reality--the island units in Chuuk State simply are arranged in five fairly distinct spatial groupings--such areas have important regional implications both in the past and in the present (Flinn 1990). With few exceptions, current planning strategies in Chuuk State do little to acknowledge or preserve such an arrangement, opting instead to invest most resources in the emerging center on Weno Island.

Chuuk State presently faces particularly severe adaptive challenges. Although richer in resources than island groups composed entirely of coralline islands and atolls, the development options nevertheless are limited both in the lagoon and throughout the outer islands. Potential development foci, such as the promotion of the tourism and commercial fishing industries, show great promise but face an enormous challenge to support a large and growing population. Despite the persistence of a regional arrangement of population--of the essence of productivity potential and demands with roots in the past--it is unlikely that any of the development options available to Chuuk State will be able to overcome the economic deficits currently faced and meet the demands of a rapidly growing population. Siphoning off population through emigration to other places clearly creates one problem as it solves another, losing some of the most energetic and productive members of society in the process of dampening overall population growth. With an explicit goal in the second five-year national plan of the FSM to make significant strides towards self-sufficiency (Office of Planning and Statistics 1992b:100), reducing the rate of population growth to a level that economic growth can match or exceed, coupled with increased subdistrict development, appears to be the only realistic, sustainable option open to the largest, most complex component of the federation.

NOTES

Mayda Riopedre and Mary Kay Davies of the Smithsonian Institution Anthropology Library, Washington, D.C., kindly provided access to several rare sources central to the research underlying this study. Dave Kelly and other members of the reference staff at the Library of Congress, also in Washington, D.C., helped locate a number of other elusive sources. Much of my understanding of Chuuk State demography has evolved over the years from discussions with other researchers working in Micronesia--notably Fran Hezel and Mike Levin, both of whom I thank sincerely for the insights they have provided. Father Hezel and Ward Goodenough kindly read and commented on an earlier version of this article. Suellen Stover checked my translation of certain more challenging German references.

1. This article follows modem convention when referring to individual islands or atolls (hereafter called *island units*) and various subregions that form the modem state of Chuuk. I use the term *Chuuk State* to denote the geographic area of the present state--even when discussing the region prior to 1979, the year of the state's official formation. I refer to the eleven inhabited high-island municipalities near the center of the state as *Chuuk Lagoon* and to the remaining inhabited island units beyond the lagoon's surrounding reef as the *outer islands.* Throughout I employ the currently accepted names for the state and its components, including those changed at the Chuuk State Constitutional Conference in 1989: Chuuk (formerly Truk), Fefen (Fefan), Houk (Pulusuk), Lukunoch (Lukunor), Makur (Magur), Namonuito (Namonwito), Onanu (Onary), Onou (Ono), Onoun (Ulul), Paata (Patta), Piherarh (Piseras), Piis-Emmwar (Pis-Losap), Pollap (Pulap), Polowat (Puluwat), Ramanum (Romalum), Siis (Tsis), Tonoas (Dublon), and Weno (Moen) (Office of Planning and Statistics 1992b:110).

2. Reports of large numbers of deaths due to native warfare in Chuuk State are highly suspect, primarily because high mortality is inconsistent with virtually all well-documented instances of such conflict throughout Micronesia (e.g., Gorenflo and Levin 1994:97-98). Sources that report high casualties, such as the Tetens and Girschner references, probably are exaggerations or embellishments (F. Hezel, pers. com., 1994). Ultimately, native warfare likely had relatively little direct impact on the demography of Chuuk State.

3. In addition to the precise methods used to collect demographic data during the German administration, the exact dates of certain population figures are unclear (see *Deutsches Kolonial-Handbuch* 1909:328; Hermann 1909:627-628). Assigning the population figures for 1900-1909 to particular years in Table 1 required comparison between and cross-referencing of several sources; most should be accurate, at least to within one year. Note that Krämer incorrectly implies that the census of Namonuito Atoll island units occurred in 1910 (1935:195), despite a note on the same page of his monograph giving the census date as December 1909 (see also Krämer 1935:219).

4. The 1946 head count recorded 9,185 islanders in Chuuk Lagoon (as well as 1,300 Japanese who remained at the time of data collection in August) and 4,682 inhabitants in the outer islands, the latter not distinguished by ethnicity but probably almost all natives (Pelzer and Hall 1946:tables 1 and 3). The breakdown of outer-island populations in 1946 was as follows: Fananu (89), Murillo (136), Nomwin (158), Ruo (94), Ettal (219), Kuttu (395), Lukunoch (453), Moch (268), Namoluk (238), Oneop (373), Satawan (36), Ta (156), Losap (406), Nama (490), Piis-Emmwar (241), Makur (NA), Onanu (39), Onou (49), Onoun (106), Piherarh (53), Houk (211), Pollap (155), Polowat (209), and Tamatam (108).

5. Because the primary aim of this study is to explore demographic change in a functioning sociocultural system (or systems, acknowledging the many individual island sociocultural systems in Chuuk State), it focuses solely on the Pacific Islanders living in Chuuk State in 1920, 1925, 1930, and 1935. The number of Japanese residing in parts of the Mandated Territory varied dramatically during the three decades that Japan controlled the area. The Japanese government regulated the migration of Japanese nationals to its Micronesian islands, promoting increased immigration to many of these islands for commercial or military purposes during the late 1930s. By December 1945, more than 37,300

Japanese citizens resided in Chuuk Lagoon alone (Pelzer and Hall 1946:table I); considering these *imposed* in-migrants would cloud any understanding of the demographic evolution of Chuuk State.

6. This study employs several measures of fertility and mortality, selected in part because of the insights on vital statistics they provide and in part because they can be calculated (or have been calculated) with the often scanty information available on Chuuk State. Crude birth rate represents the number of births per 1,000 individuals in the total population for a specific year. General fertility rate, in turn, signifies for a given year the total births per 1,000 women in the main reproductive ages (usually 15 through 49 years). Total fertility rate denotes for a particular year the sum of age-specific birth rates (number of births per 1,000 women in a particular age group) for women in the main reproductive years; note that when divided by 1,000, total fertility rate provides an estimate of live births per woman throughout her reproductive period. Crude death rate represents the number of deaths per 1,000 individuals in the total population for a particular year. Finally, age-specific death rate concerns the number of deaths in a particular age group per 1,000 persons in that age group, once again for a specific year.

7. Attempts to acquire reliable mortality data for 1989 were unsuccessful. Although the FSM Department of Health Services compiles this information, citizens of Chuuk State tend to underreport deaths to a degree that recent mortality data are virtually useless for analytical purposes (Amato Elymore, pers. com., 1993). Earlier mortality probably also was substantially underreported, though it is unclear if the magnitude of the problems equaled current levels. In general, I use fertility and mortality measures in this study to provide basic indications of the mechanisms underlying population change in Chuuk State over time; all measures undoubtedly are inaccurate in absolute terms, serving primarily as a rough means of evaluating the relative contributions of births and deaths in population change.

8. The lack of reliable nineteenth-century population figures greatly limits what one can say about early population change in Chuuk State. With the exception of the estimate of 350 inhabitants on Houk Atoll in 1850 provided by Cheyne (1852:135), early figures either have unknown origins or are based on very brief encounters until those provided by Doane for several island units in the Mortlocks in 1874. Based on more reliable estimates, it appears that both Ettal and Houk atolls experienced marked depopulation between the mid-nineteenth century and the first decade of the 1900s (see Table 1). In comparison, depopulation on other outer islands apparently was much less.

Insights on early demographic change in Chuuk Lagoon are even more elusive. The several estimates dating from 1877 to 1900 that place the lagoon population at about 12,000 probably are reasonably accurate (see Table 1), given the difficulty of estimating a large number of people in a complex geographical setting such as the lagoon. Nevertheless, due to the persistence of warfare and natural calamities, augmented by the impact of introduced illnesses, it is likely that the 1903 figure of 13,115 lagoon inhabitants (which probably is quite accurate) resulted from some amount of depopulation over the preceding several decades. The growth in lagoon population between 1903 and 1907 probably is due largely to the influx of people from outer islands devastated by a typhoon in March of 1907--otherwise interrupting a trend of depopulation whose effects appear as late as 1920 (see Table 3).

REFERENCES CITED

Alexander, J.
1895 *The Islands of the Pacific.* New York: American Tract Society.

Barringer, H. R., R. W. Gardiner, and M. J. Levin
1993 *Asians and Pacific Islanders in the United States.* New York: Russell Sage Foundation.

Bollig, P. L.
1927 Die Bewohner der Truk Inseln. *Anthropos Ethnologische Bibliothek* 3:1-320.

Brown, R. G.
1977 The German Acquisition of the Caroline Islands, 1898-1899. In *Germany in the Pacific and Fur East, 1870-1914,* edited by J. A. Moses and P. M. Kennedy, 137-155. St. Lucia: University of Queensland Press.

Bryan, E. H.
1971 *Guide to Place Names in the Trust Territory of the Pacific Islands.* Honolulu: Bishop Museum Press.

Campbell, I. C.
1989 *A History of the Pacific Islands.* Berkeley: University of California Press.

Cheyne, A.
1852 *A Description of Some Islands in the Western Pacific Ocean, North and South of the Equator, with Sailing Directions.* London: J. D. Potter.

Christian, F. W.
1899 *The Caroline Islands.* London: Methuen.

Cliff, A. D., and J. K. Ord
1973 *Spatial Autocorrelation.* London: Pion.
1981 *Spatial Processes: Models and Applications.* London: Pion.

Clyde, P. H.
[1935] *Japan's Pacific Mandate.* Reprint. Port Washington, N.Y.: Kennikat Press.
1967

Connell, J.
1983 *Migration, Employment, and Development in the South Pacific. County Report No. 3, Federated States of Micronesia.* Noumea: South Pacific Commission.

Damm, H., and E. Sarfert
1935 Inseln um Truk. *Ergebnisse der Südsee Expedition 1908-1910,* edited by G. Thilenius, series 2, section B, volume 6, half-volume 2. Hamburg: Friederichsen, de Gruyter.

Deutsches Kolonialblatt
1907 Deutsch-Neuguinea. Taifun in den Mortlock-Inseln. *Deutsches Kolonialblatt* 18:864-866.
1998 Die Notlage auf den Mortlock-Inseln. *Deutches Kolonialblatt* 19:744-746.

Deutsches Kolonial-Handbuch
1909 Volume 9. Berlin: Ausgabe.

Doane, E. T.
1874 The Caroline Islands. *The Geographical Magazine* 1:203-205.
1881 The Lagoon of Ruk. *Missionary Herald* 77:208-210.

Driver, M. J., translator and editor
1976 *Chronicle of the Mariana Islands, by Father Aniceto Ibanez del Carmen, O.S.A., Father Francisco Resano, O.S.A., and Others.* Mangilao: Micronesian Area Research Center, University of Guam.

Dumont d'Urville, J.
1843 *Voyage au Pôle Sud et dans l'Océanie sur les* corvettes l'Astrolabe *et* la Zélée *exécuté par ordre du roi pendant les années 1837, 1838, 1839, 1840.* Part 1: *Histoire du voyage.* Volume 5. Paris: Gide.

Duperrey, L. I.
1825 *Voyage autour du monde, exécuté par ordre du roi, sur la corvette* la Coquille, *pendant les années 1822, 1823, 1824, et 1825.* Volume 1, *Histoire du voyage.* Paris: A. Bertrand.

Finsch, O.
1893 Ethnologische Erfahrungen und Belegstücke aus der Südsee. Dritte Abtheilung: Mikronesien (West Oceanien). 3. Ruk und Mortlock. *Annalen des K.K. Naturhistorischen Hofmuseums* 8:295-437.

Fischer, J. L.
1961 The Japanese Schools for the Natives of Truk, Caroline Islands. *Human Organization* 20:83-88.

Fischer, J. L., and A. M. Fischer
1957 *The Eastern Carolines.* New Haven, Conn.: Human Relations Area File Press.

Flinn, J.
1982 *Migration and Inter-Island Ties: A Case Study of Pulap, Caroline Islands.* Ph.D. dissertation, Stanford University. Ann Arbor: University Microfilms.
1985 Adoption and Migration from Pulap, Caroline Islands. *Ethnology* 24:95-104.
1990 We Still Have Our Customs: Being Pulapese in Truk. In *Cultural Identity and Ethnicity in the Pacific,* edited by J. Linnekin and L. Poyer, 103-126. Honolulu: University of Hawai'i Press.
1992 *Diplomas and Thatch Houses: Asserting Tradition in a Changing Micronesia.* Ann Arbor: University of Michigan Press.

Freycinet, L.
1829 *Voyage autour de monde, entrepris par ordre du roi, exécuté sur les corvettes de S.M.* l'Uranie *et* la Physicienne, *pendant les années 1817, 1818, 1819, et 1820.* Part 2: *Historique,* volume 2, part 1. Paris: Pillet Aíné.

Girschner, M.
1912 Die Karolineninsul Námoluk und ihre Bewohner. *Baessler Archiv* 2:123-215.

Gladwin, T.
1970 *East Is a Big Bird.* Cambridge: Harvard University Press.

Gladwin, T., and S. B. Samson
1953 *Truk: Man in Paradise.* New York: Wenner-Gren Foundation for Anthropological Research.

Goodenough, W. H.
1978 *Property, Kin, and Community on Truk.* Second edition. Hamden, Conn: Shoestring Press.

Gorenflo, L. J.
1990 Regional Discontinuities of Planning Objectives in the Republic of the Marshall Islands. *Environment and Planning C* 8:297-314.
1993a Changing Regional Demography in the Federated States of Micronesia: Contrasting Planning Challenges in an Emerging Pacific Nation. *Environment and Planning C* 10:123-141.
1993b Demographic Change in Kosrae State, Federated States of Micronesia. *Pacific Studies* 16 (2): 67-118.

Gorenflo, L. J., and M. J. Levin
1991 Regional Demographic Change in Yap State, Federated States of Micronesia. *Pacific Studies* 14 (3): 97-145.
1992 Regional Demographic Change in Pohnpei State, Federated States of Micronesia. *Pacific Studies* 15 (1): 1-49.
1994 The Evolution of Regional Demography in the Marshall Islands. *Pacific Studies* 17 (1): 93-158.
1995 Changing Migration Patterns in the Federated States of Micronesia. *ISLA* 3:29-71.

Gulick, L.
1862 Micronesia--Of the Pacific Ocean. *Nautical Magazine* 31:237-245, 298-308, 358-363, 408-417.

Hempenstall, P.
1978 *Pacific Islands under German Rule.* Canberra: Australian National University Press.

Hermann, R.
1909 Zur Statistik der Eingeborenen der deutschen Südseegebiete. *Zeitschrift für Kolonialpolitik, Kolonialrecht und Kolonialwirtschaft* 11:626-641.

Hezel, F. X.
1973 The Beginnings of Foreign Contact with Truk. *Journal of Pacific History* 8:51-73.
1978 The Education Explosion in Truk. *Micronesian Reporter* 26:24-33.
1983 *The First Taint of Civilization: A History of the Caroline and Marshall Islands in the Precolonial Days, 1521-1885.* Honolulu: University of Hawai'i Press.
1984 Cultural Patterns in Trukese Suicide. *Ethnology* 23:193-206.
1987 Truk Suicide Epidemic and Social Change. *Human Organization* 46:283-291.
1991 *The Catholic Church in Micronesia.* Chicago: Loyola University Press.
1995 *Strangers in Their Own Land: A Century of Colonial Rule in the Caroline and Marshall Islands.* Honolulu: University of Hawai'i Press.

Hezel, F. X., and M. J. Levin
1990 Micronesian Emigration: Beyond the Brain Drain. In *Migration and Development in the South Pacific,* edited by J. Connell, 42-60. Pacific Research Monograph, no. 24. Canberra: Australian National University.

Hezel, F. X., and T. B. McGrath
1989 The Great Flight Northward: FSM Migration to Guam and the Northern Mariana Islands. *Pacific Studies* 13 (1):47-64.

Hubert, L. J., R. G. Golledge, and C. M. Costanzo
1981 Generalized Procedures for Evaluating Spatial Autocorrelation. *Geographical Analysis* 13:224-233.

Hubert, L. J., R. G. Golledge, C. M. Costanzo, and N. Gale
1985 Measuring Association between Spatially Defined Variables: An Alternative Procedure. *Geographical Analysis* 17:36-46.

Hubert, L. J., and J. V. Schultz
1976 Quadratic Assignment as a General Data Analysis Strategy. *British Journal of Mathematical and Statistical Psychology* 29:190-241.

Hunt, E. E., Jr., N. R. Kidder, and D. M. Schneider
1954 The Depopulation of Yap. *Human Biology* 26:21-51.

Hunter-Anderson, R. L.
1991 A Review of Traditional Micronesian High Island Horticulture in Belau, Yap, Chuuk, Pohnpei, and Kosrae. *Micronesica* 24:1-56.

Japan. South Seas Bureau
1936 *Annual Report on the Administration of the South Sea Islands under Japanese Mandate for the Year 1935.* Tokyo: Nan'yō-chō.

King, T. F., and P. L. Parker
1984 *Pisekin Nóómw Nóón Tonaachaw: Archaeology in the Tonaachaw Historic District, Moen Island.* Center for Archaeological Investigations Occasional Paper, no. 3. Carbondale: Southern Illinois University.

Kiste, R. C.
1984 Overview. In *Oceania: A Regional Study,* edited by F. M. Bunge and M. W. Cooke, 1-53. Foreign Area Studies, American University. Washington, D.C.: U.S. Government Printing Office.

Kotzebue, O. von
1967 *A Voyage of Discovery into the South Sea and Beering's Straits in the Years 1815-1818.* Translated by H. E. Lloyd. 3 volumes. New York: DaCapo Press.

Krämer, A.
1932 Truk. *Ergebnisse der Südsee Expedition 1908-1910,* edited by G. Thilenius, series 2, section B, volume 5. Hamburg: Friederichsen, de Gruyter.
1935 Inseln um Truk. *Ergebnisse der Südsee Expedition 1908-1910,* edited by G. Thilenius, series 2, section B, volume 6, part 1. Hamburg: Friederichsen, de Gruyter.

Kubary, J.
1880 Die Bewohner der Mortlock Inseln. *Mitteilungen der Geographischen in Hamburg* 1878/1879:224-299.

Kubary, J., and R. Krause
1889 Ein Beitrag zur Kenntniss der Ruk-Inseln. *Mitteilungen der Geographischen Gesellschaft in Hamburg* 1887/1888:53-63.

Lessa, W. A.
1950 Ulithi and the Outer Native World. *American Anthropologist* 52:27-52.

Lesson, R.
1839 *Voyage autour du monde entrepris par ordre du gouvernement sur la corvette* la Coquille. 2 volumes. Paris: Pourrat.

Levin, M. J., and L. J. Gorenflo
1994 Demographic Controls and Shifting Adaptive Constraints on Eauripik Atoll. *ISLA* 2:103-145.

Levin, M. J., and R. D. Retherford
1986 *Recent Fertility Trends in the Pacific Islands.* Papers of the East-West Population Institute, no. 101. Honolulu: East-West Population Institute.

Logan, R.
1881 Micronesian Mission. *Missionary Herald* 77:18-19.

Lütke, F.
1835 *Voyage autour du monde, exécuté par ordre de Sa Majesté l'Empereur Nicolas Ier, sur la corvette* le Séniavine, *dans les années 1826, 1827, 1828 et 1829.* Part 2, *Partie Historique,* 2 volumes. Paris: Firmin Didot.

Marshall, M.
1972 *The Structure of Solidarity and Alliance on Namoluk Atoll.* Ph.D. dissertation, University of Washington. Ann Arbor: University Microfilms.

1975 Changing Patterns of Marriage and Migration on Namoluk Atoll. In *Pacific Atoll Populations,* edited by V. Carroll, 160-211. Honolulu: University Press of Hawai'i.

1976 The Effects of Typhoon Pamela on the Mortlock Islands of Truk District. *Micronesian Reporter* 24:34-39.

1979a Education and Depopulation on a Micronesian Atoll. *Micronesica* 15:1-11.

1979b Natural and Unnatural Disaster in the Mortlock Islands of Micronesia. *Human Organization* 38:265-272.

1979c *Weekend Warriors: Alcohol in a Micronesian Culture.* Palo Alto, Calif.: Mayfield.

Mertens, M.

1830 Mémoire sur l'archipel des Carolines, particulièrement sur les îles basses. In *Recueil des Actes de la Séance publique de l'Académie de St. Petersburg,* 95-186. St. Petersburg.

Missionary Herald

1877 Micronesia--A Delegate's Report. *Missionary Herald* 73:201-206.

Morrell, B.

1832 *A Narrative of Four Voyages to the South Sea, North and South Pacific Ocean, Chinese Sea, Ethiopic and Southern Atlantic Ocean, Indian and Antarctic Ocean, from the Year 1822 to 1831.* New York: J. & J. Harper.

Nan'yō-chō [South Seas Bureau]

1927 *Nan'yo Guntō Tosei Chōsa Hōkoku, Taisho Juyo-nen* [Census Report of the South Seas Islands, 1925]. Koror, Palau.

1931 *Nan'yo Guntō Tosei Chosa-sho, Showa 5 nen* [A Summary of Conditions in the Japanese Mandate Territories, 1930]. 4 volumes. Koror, Palau.

1937 *Nan'yo Gunto Tosei Chōsa-sho, Showa 10 nen* [A Summary of Conditions in the Japanese Mandate Territories, 1935]. 2 volumes. Tokyo.

Nason, J. D.

1970 *Clan and Copra: Modernization on Etal Island, Eastern Caroline Islands.* Ph.D. dissertation, University of Washington. Ann Arbor: University Microfilms.

1975a The Effects of Social Change on Marine Technology in a Pacific Atoll Community. In *Marine Adaptation of the Pacific,* edited by R. W. Casteel and G. I. Quimby, 5-38. The Hague: Mouton.

1975b The Strength of the Land: Community Perception of Population on Etal Atoll. In *Pacific Atoll Populations,* edited by V. Carroll, 117-159. Honolulu: University Press of Hawai'i.

Office of Census Coordinator. Trust Territory of the Pacific Islands

1975 *1973 Population of the Trust Territory of the Pacific Islands.* Saipan.

Office of the Chief of Naval Operations

1943 *Civil Affairs Handbook: Marshall Islands.* OPNAV P22-1 (formerly OPNAV 50E-1). Washington, D.C.: Navy Department.

1944 *Civil Affairs Handbook: East Caroline Islands.* OPNAV P22-5 (formerly OPNAV 50E-5). Washington, D.C.: Navy Department.

Office of the High Commissioner. Trust Territory of the Pacific Islands
1959 *Census Report, 1958.* Agana.

Office of Planning and Statistics. Federated States of Micronesia
1985 *First National Development Plan, 1985-1989.* Kolonia, Pohnpei.
1992a *Chuuk State: 1989 Census of Population and Housing.* Palikir, Pohnpei.
1992b *Second National Development Plan, 1992-1996.* Palikir, Pohnpei.

Oliver, D. L.
1989 *Oceania: The Native Cultures of Australia and the Pacific Islands.* 2 volumes. Honolulu: University of Hawai'i Press.

Parker, P. L., and T. F. King
1981 Recent and Current Archaeological Research on Moen Island, Truk. *Asian Perspectives* 24:11-26.

Peattie, M. R.
1988 *Nan'yo: The Rise and Fall of the Japanese in Micronesia, 1885-1945.* Honolulu: University of Hawai'i Press.

Pelzer, K. J.
1947 Agriculture in the Truk Islands. *Foreign Agriculture* 11:74-81.

Pelzer, K. J., and E. T. Hall
1946 *Economic and Human Resources--Truk Islands, Central Carolines.* Economic Survey of Micronesia, volume 6. Honolulu: US. Commercial Company.

Pirie, P.
1971 The Effects of Treponematosis and Gonorrhea on the Populations of the Pacific Islands. *Human Biology* 1:189-206.

Purcell, D.C.
1967 *Japanese Expansion in the South Pacific, 1890-1935.* Ph.D. dissertation, University of Pennsylvania. Ann Arbor: University Microfilms.

Reafsnyder, C. D.
1984 *Emerging Ethnic Identity in an Urban Migrant Community in Truk State, Federated States of Micronesia.* Ph.D. dissertation, Indiana University, Ann Arbor: University Microfilms.

Rubinstein, D. H., and M. J. Levin
1992 Micronesian Migration to Guam: Social and Economic Characteristics. *Asia and Pacific Migration Journal* 1:350-385.

Schmeltz, J. D. E., and R. Krause
1881 *Die Ethnographisch-anthropologische Abtheilung des Museum Godeffroy in Hamburg.* Hamburg.

Schnee, H.
1920 *Deutsches Kolonial-Lexicon.* Leipzig: Quelle and Meyer.

School of Public Health. University of Hawai'i
n.d. 1967 Population Census, Trust Territory of the Pacific Islands--Truk District. Honolulu.

Seidel, H.
1905 Die Bevölkerung der Karolinen und Marianen. *Petermanns Mitteilungen* 51: 36-39.

Service, E. R.
1971 *Primitive Social Organization: An Evolutionary Perspective.* Second edition. New York: Random House.

Severance, C. J.
1976 *Strategy and Transaction on a Micronesian Atoll.* Ph.D. dissertation, University of Oregon. Ann Arbor: University Microfilms.

Shineberg, D., editor
1971 *The Trading Voyages of Andrew Cheyne, 1841-1844.* Canberra: Australian National University Press.

Shinn, R.
1984 Trust Territory of the Pacific Islands. In *Oceania: A Regional Study,* edited by F. M. Bunge and M. W. Cooke, 295-348. Foreign Area Studies, American University. Washington, D.C.: U.S. Government Printing Office.

Soil Conservation Service
1983 *Soil Survey of Islands of Truk, Federated States of Micronesia.* Washington, D.C.: U.S. Government Printing Office.

Spoehr, A.
1954 *Saipan: The Ethnology of a War-Devastated Island.* Fieldiana: Anthropology, volume 41. Chicago: Field Museum of Natural History.

Stark, J. T., J. E. Paseur, R. L. Hay, H. G. May, and E. D. Patterson
1958 *Military Geology of Truk Islands, Caroline Islands.* Tokyo: Intelligence Division, Office of the Engineer, Headquarters, United States Army, Pacific.

Sturges, A.
1874 News from Micronesia. *Missionary Herald* 70:255-256.
1880 Micronesian Mission: Moses at Nomr. *Missionary Herald* 76:101.

Taeuber, I. B.
1963 Demographic Instability in Island Ecosystems. In *Man's Place in the Island Ecosystem,* edited by F. R. Fosberg, 226-251. Honolulu: Bishop Museum Press.

Tetens, A.
1958 *Among the Savages of the South Seas: Memoirs of Micronesia, 1862-1868.* Translated by F. M. Spoehr. Stanford: Stanford University Press.

Thomas, J. B.
1978 *Adoption, Filiation, and Matrilineal Descent on Namonuito Atoll, Caroline Islands.* Ph.D. dissertation, University of Hawai'i. Ann Arbor: University Microfilms.

Thomas, M. D.
1978 *Transmitting Culture to Children on Namonuito Atoll, Caroline Islands.* Ph.D. dissertation, Department of Anthropology, University of Hawai'i, Honolulu.

Tolerton, B., and J. Rauch
n.d. *Social Organization, Land Tenure, and Subsistence Economy of Lukunor, Nomoi Islands.* Coordinated Investigations of Micronesian Anthropology, report 26. Washington, D.C.: Pacific Science Board.

U.S. Bureau of the Census
1972 *1970 Census of Population.* Volume 1, *Characteristics of the Population,* part 57, *Trust Territory of the Pacific Islands.* Washington, D.C.: U.S. Government Printing Office.
1983a *1980 Census of Population.* Volume 1, *Characteristics of the Population,* chapter b, *General Population Characteristics,* part 57B, *Trust Territory of the Pacific Islands, Excluding the Northern Mariana Islands.* Washington, D.C: U.S. Government Printing Office.
1983b *Census of Population and Housing, 1980--Summary Tape File 3A: Trust Territory of the Pacific Islands.* Washington, D.C.: U.S. Government Printing Office.
1992a *1990 Census of Population and Housing. Social, Economic, and Housing Characteristics, Commonwealth of Northern Mariana Islands.* Washington, D.C.: U.S. Government Printing Office.
1992b *1990 Census of Population and Housing. Social, Economic, and Housing Characteristics, Guam.* Washington, D.C.: U.S. Government Printing Office.

U.S. Department of the Interior
1952 *Trust Territory of the Pacific Islands.* Fifth annual report on the administration of the Trust Territory of the Pacific Islands, prepared by the U.S. Department of the Interior and transmitted to the United Nations. Washington, D.C.

U.S. Department of the Navy
1949-1951 *Trust Territory of the Pacific Islands.* Annual reports on the administration of the Trust Territory of the Pacific Islands, prepared by the U.S. Department of the Navy and transmitted to the Secretary General of the United Nations. Washington, D.C.

U.S. Department of State
1955-1985 *Trust Territory of the Pacific Islands.* Seventh through thirty-seventh annual reports on the administration of the Trust Territory of the Pacific Islands, prepared by the U.S. Department of State and transmitted to the United Nations. Washington, D.C.

Westwood, J.
1905 *Island Stories.* Shanghai: North China Herald Office.

Yanaihara, T.
1940 *Pacific Islands under Japanese Mandate.* New York: Oxford University Press.

BOOK REVIEW FORUM

Robert Aldrich, *France and the South Pacific since 1940.* Honolulu: University of Hawai'i Press, 1993. Pp. xxii, 413, notes, bibliography, index, maps. US$38 cloth.

Stephen Henningham, *France and the South Pacific: A Contemporary History.* South Sea Books. Honolulu: University of Hawai'i Press, 1991. Pp. xvi, 292, notes, bibliography, index, illust. US$17.95 paper.

Review: PAUL DE DECKKER
FRENCH UNIVERSITY OF THE PACIFIC
NOUMEA

PROFESSOR ROBERT ALDRICH from the University of Sydney is one of the best connoisseurs of the French presence in the South Pacific. He has edited several books on the topic and the present one under review is the continuation of his *The French Presence in the South Pacific, 1842-1940* (London, 1990), which is, to my point of view, the best historical summary of French Oceanic colonialism and imperialism. Aldrich is a true historian in the sense that he not only provides facts of history but also constantly formulates probing explanations, making the logic of these facts understandable. The abundant footnotes and references support all his arguments, which never try to accredit any particular political standpoints.

France became a colonial power in the Pacific by the mid-nineteenth century in an effort to reinstate the grandeur affected by the 1789 French Revolution and the following Napoleonic wars. She came late in the Pacific by comparison with Great Britain, which had acquired the two largest land

masses in the region: Australia (in 1788) and New Zealand (in 1840). France, like Great Britain, had a world vision for the constitution of her empire in the nineteenth century. She needed *points d'appui* (support bases) for her navy with a chain of islands allowing refueling stops on maritime routes linking the Americas and Asia, where France also had imperial outposts. Other purposes combined with these military and commercial goals: religious, agricultural, securing minerals, establishing colonies for convicts and settlers among others.

Oceanic France was largely neglected in Paris up to the Second Work War; Asians had been recruited as indentured laborers: Chinese in the present French Polynesia, Vietnamese and Javanese in New Caledonia, who outnumbered white settlers in the 1920s. The local populations had been converted and "either integrated into the lower levels of the workforce or kept on the outskirts of settler society waiting for what some Europeans thought would be their eventual extinction" (Aldrich, p. xxii). In Wallis and Futuna, which became an official French protectorate in the 1880s, the French Catholic church had imposed a theocratic rule over the three traditional kingdoms that still exist in the archipelago today.

Aldrich's book really starts with the Second World War, which was to bring drastic changes in French Oceania. The presence in all French possessions of tens of thousands of American and other Allied troops to stop the Japanese invasion and eventually to win the Pacific War transformed all levels of life: economically with the massive influx of dollars, mentally with the American way of life, politically and socially with black GIs and officers who demonstrated possibilities of another racial *rapport* to marginalized local and pressured imported populations. Aldrich shows quite well also the internal tensions between European tenants of the Vichy regime and the Gaullist party in all four colonies. His analysis of the effects of this American prosperity on the archipelagoes is enlightening and explains the newly emerging context or the turning point that forced Paris to reconsider the roles for the colonies in postwar France.

Paris was forced to take into account the new political and mental atmosphere present in her Oceanic possessions, which had been cut off from the metropole for five years during the war. The colonial order was thus to be modified as well as the underdeveloped state of these colonies, which surprised so many visitors from abroad during the 1940s and the 1950s. Aldrich demonstrates this point in providing written accounts from informative authors of the time. Quickly said, the French colonies were then poor, underdeveloped in all spheres of everyday life, and a rethinking in terms of national policy was needed as far as they were concerned. Full citizenship was to be granted to their local populations and, with time, to the imported

ones. Had they not fought during the war with the Allies? In doing so, they were entitled to get access to full French citizenship. Moreover, as other colonies in Indochina and Africa were striving for independence, wasn't it time to foster a new constitutional framework for all French colonies? A "Gallic version of the Commonwealth" was to be provided after the war (p. 68), putting to an end forced labor for Kanak populations. Later, in 1956, a law was enacted to promote new relationships between Paris and the French colonies in Africa and the Pacific to pave the way towards new constitutional frameworks.

Aldrich is an economic historian and the elements in the third chapter of his book, "The Economic History of the French Territories" (pp. 76-116), reflect very well his scientific specialty. He shows how eventually France decided to develop her overseas Pacific territories, not only to respond to criticisms of having been a reactionary and passive colonial power before the Second World War, but also to use these overseas possessions to attain full recognition as a major power on the world scene by holding a nuclear deterrence capability as well as possessing strategic metals such as nickel. Even Wallis and Futuna, which does not export any commercial products, has a higher GDP today than Tonga and Fiji based solely on French financial transference. Only New Caledonia with its nickel mining was--and still is--able to generate economic wealth, but not sufficient to live in autarchy. "The advantage [for these territories today] is to have a wealthy patron, and the political ties between these territories and France create a moral imperative for French aid" (p. 116).

When Aldrich deals with "Populations and Societies of the French Pacific" (pp. 117-157), he provides an interesting sociological account of the 350,000 people who live in these three French Overseas Territories. Not only does he deal with demographic growth, ethnicity, religion, identity and culture, language, education, and the role of women, but all these topics nurture new reflections on the socioeconomic and cultural components of these three particular entities. It is refreshing and presents clear pictures of people's realities and aspirations in their confrontation with traditional and modern worlds, which often creates ambiguities and cultural destabilization.

From the end of the Second World War to 1980, New Caledonia and French Polynesia went through political turbulences, a lot more so than Wallis and Futuna, which remained during that period under the realm of the Catholic church and the three customary kingdoms. Aldrich explains quite well what was at stake on the Parisian level: the continuity of nuclear testing in Moruroa and, thus, the maintenance of the status quo as far as constitutional links with metropolitan France were concerned. Although African colonies gained their independence in the 1960s, France was to

retain the remnants of her empire in the Pacific for strategic reasons. As the three territories were perceived as a whole in Paris, none of them could accede to independence as it would have represented a menace to French interests. The important political roles played by Pouvana'a O'opa in Tahiti and Maurice Lenormand in Noumea are carefully analyzed by the author, who shows how Paris kept the situation under control against autonomist aspirations. It was a period of internal contradictions and divisions amid ethnic, religious, and political polarizations.

France shared with Great Britain from 1906 to 30 July 1980 the joint colonial management of the Condominium of the New Hebrides, now the Republic of Vanuatu. This bizarre arrangement between London and Paris produced an odd situation for the colony, which had two school, medical, and administrative systems, among others. The author describes with illuminating examples the inhabitants' situation, be they local people, French or British settlers, or other foreigners *(optants)* who had to choose under which regime they would be treated in terms of justice, for example. Mutual systemic antagonism resulted in all aspects of everyday life and Aldrich provides an excellent comparative account of all the contradictions soon to appear from these two opposing systems of colonization. He also relates in detail the move towards independence once Great Britain decided to retire from the New Hebrides, as it had done previously, since 1970, in her other Pacific colonies, while France, afraid of this move as far as her other territories might be concerned, tried to resist or at least provoke or help separatist movements in the French-speaking island of Espiritu Santo with Jimmy Stephens and Youlou. The positions of emerging political leaders on both sides, such as Lini and Leymang, are examined as well as the stances of different governors or French ministers at the time of moving towards the new statute and after it was achieved. Aldrich, with probing arguments, provides a clarifying explanation of the development of the past and present situation of Vanuatu. This chapter is a must for anyone trying to get an introduction and understanding of the Republic of Vanuatu's political arena.

The political development in the New Hebrides and then Vanuatu influenced political life in New Caledonia in the 1980s. Aldrich summarizes this decade of utter violence, which tortured New Caledonia by dividing its population into two major communities defined by their respective political standpoints: *indépendantistes* versus pro-French. He recounts the assassinations and the bombings against which Paris sent more and more troops to the territory with the hope to reinstate calm, eventually culminating in the Ouvea massacre in April 1988 while presidential elections were being held in France. He also examines the role played by journalists and scientists during that period of violence and analyzes quite well how the debates on

New Caledonia versus Kanaky fed a more general debate on French national politics as it was the case at the time of the decolonization of Indochina and Algeria. Aldrich is very careful and never, unlike all the authors he refers to, declares himself on one or another side's cause. He relates the succession of the events, explains what appears important to him for the understanding of these events, and provides supplementary elements for his readers to make their own judgments if necessary. Aldrich is a scholar in all senses of the term. The Ouvea massacre is certainly at the origin of the Matignon-Oudinot agreement signed in Paris under the aegis of the then French prime minister, Michel Rocard, by Jean-Marie Tjibaou and Jacques Lafleur, the two outstanding leaders of the antagonistic communites. New Caledonia, up to 1998, will remain largely under French state control even though the three provinces will get more and more autonomy to manage the development priorities they each choose for themselves. France is favoring by all means socioeconomic equilibrium, but the weight of the past remains very heavy as well as the opposition between the customs that reign in the two Kanak provinces and those in the Southern province with the mainly European, modem, and industrialized Noumea. No one can say what the future status will be at the time of the 1998 referendum, if it occurs then on that very question.

Violence, but of a more political than physical nature (although some assassinations made the headlines in the Tahitian media), occurred also in French Polynesia. In the 1980s the nuclear question remains central. It biased the financial health and employment capacity of this territory, which rested upon the continuation of the testing programs. French Polynesia was granted some self-government in 1977 and a full statute of self-government in 1984. Political debates during the decade turned around independence or a state in free association for the future. The preeminent political leader, Gaston Flosse, being the only politician "to co-ordinate a major political party efficiently and to recruit mass support successfully," had to tackle "unsolvable social problems, notably unemployment coupled with inequalities among the territory's population, aggravated by inflated salaries for public servants and the lack of an income tax," which "threatened to widen cleavages between different groups [wealthy *demi,* half-castes, and poor Polynesians] and to become points of political discontent and possibly conflagration" (pp. 296,297). In the usually forgotten archipelago of Wallis and Futuna, the 1980s saw an important evolution both of a political and a unionist nature. The confrontation between traditional leaders supported by the local Catholic church and an emerging trade unionist movement created political turbulence. The introduction of a television channel in Wallis forecasts deep changes in the people's mentality, as nothing can resist the pene-

tration of new ways of thinking brought by this individualizing instrument of modernity. Aldrich's last chapter deals with French nuclear policy and the history of testing in Moruroa and Fangataufa since 1963. It analyzes military, strategic, and international issues related to the French nuclear-testing program as well the geopolitical strategy envisaged by France in Oceania.

Stephen Henningham's book, *France and the South Pacific: A Contemporay History,* is full of factual information and also provides a comprehensive overview of French Oceania since 1945. Black-and-white photographs are inserted in the different chapters, and these photographs are more interesting as such than the unsubtle commentaries that often go with them. If we have to compare these two authors' approaches--and the exercise is not easy according to the excellence of these two books--we could consider their respective viewpoints, which seem to fundamentally diverge.

Aldrich does not interfere with historical facts. He provides them in their context and, when possible, makes comparisons with other comparable situations not to justify or criticize but only for the reader to understand the logic of history. In doing so, he follows what the Ecole des Annales in France with Fernand Braudel or Emmanuel Le Roy-Ladurie have done among other historians to revolutionize historical studies in profitably taking into account other social sciences like sociology, economics, women's studies, culture, and so on. In other words, his books will long be considered classics on Oceanic France.

There are a few spelling mistakes in his text when he deals with French words (which must be due to the typist or publisher, as Aldrich is perfectly fluent in French)--*certificat d'études primaries* for *primaires* (p. 144), *conseilleurs* for *conseillers* (p. 242)--or with Tahitian words: Ti Tiarama for Te Tiarama (p. 295). That is nothing.

Robert Aldrich does not focus at all on a prospective line. This is the central point according to which his book differs from Stephen Henningham's. Henningham is more familiar with the internal political evolution of the three French Pacific territories than Aldrich. He was deputy consul general in Noumea in the early 1980s, and we can feel in reading his exposes on New Caledonian or French Polynesian politics that he fully mastered all details of them. His book is more of a political nature; it is in fact mainly a political history of the French Pacific from 1945 to 1990 to which are added elements of analysis that comfort this political history This is not a negative comment, as this book is of the highest value for someone who wants to understand politics in French Oceania. Everything is taken into account: statistical data, politicians, political parties and their intricacies, and so on. If we compare Henningham's complete chapter on Wallis and Futuna (pp. 178-192) with Aldrich's (pp. 297-301), we can see that the former used

to write comprehensive, detailed diplomatic telegrams or notes while the latter does not consider Wallis and Futuna to add more to his proposition. In this case, Henningham offers better than Aldrich.

In fact these two books are complementary to each other on all issues at stake. Aldrich has not been willing to develop the future of French nuclear tests as he thought that they would stop. Henningham, taking into account diverse French declarations in the early 1990s, was persuaded that they would be carried on. The decision to suspend the testing program--indefinitely?--was taken in May 1992 when Bérégovoy became the seventh French prime minister of François Mitterrand. The new French president, Jacques Chirac, just recently decided to start it again for eight tests.

There is one point not altogether correctly developed in either book: the murder of Jean-Marie Tjibaou and Yewene Yewene. This murder was committed by Djubely Wea, a former reverend, who had never accepted that Tjibaou did not take into account his own wish to intercede at the time of the Ouvea massacre. He was not a young lad and was not arrested after the murder, as Aldrich claims. He was shot by Tjibaou's bodyguards a few seconds after he had killed the two Kanak leaders. Henningham claims that they were killed by militants traumatized by the outcome of the Ouvea hostage-taking and opposed to compromise with France. The details relative to these tragic deaths are unimportant, what only matters is the disappearance of Tjibaou and Yewene.

Review: COLIN NEWBURY
OXFORD UNIVERSITY

As a "contemporary history," Stephen Henningham's *France and the South Pacific* is an able survey that aims to inform the Anglophone Pacific about the policies and practices of Francophone neighbors. It is accurate, balanced, and soundly based on a wide variety of sources intelligently deployed and clearly presented. By reviewing the recent past the author helps to explain the present; and a final Conclusion ventures into prognostication about the later 1990s.

As such, it compares well with other works from Australians alerting Anglophones to the complexity of issues behind the "French presence"--too often seen as a simplistic regression in "colonialism" in an age of "independence." It does not quite have the historical depth or make use of primary sources in the style of works by Robert Aldrich and John Connell. But the author has an advantage rare in Australian historiography of the Pacific, that of field experience in the consulate general in New Caledonia and a

diplomatic career in the Australian Department of Foreign Affairs and Trade. And from that experience Henningham has managed to combine an academic detachment with a knowledge of the compromises worked out between new states and former colonial powers to serve current interests. In short, *France and the South Pacific* modestly challenges by its understatement the assumptions of intellectual Whiggery--steady progression for all societies toward a democratic and autonomous statehood. The limitations to this model encouraged in the Pacific since the 1960s are now better understood, after two decades of decolonization. But acceptance of French modes of internal autonomy and external patronage is still difficult for an Anglophone generation reacting to evidence of racial conflict in New Caledonia, the nuclear defiance in Moruroa, and the *Rainbow Warrior* affair. Why should France still have a "presence" at all so far from Europe in a sphere of Asian, American, and Australasian influence?

This underlying question is one of several that require deeper analysis. How far did France's position in Europe and the wider world after 1945 determine local French policies in the Pacific? Were there social and economic changes in possessions in that region peculiar to French Overseas Territories, which might serve as an explanation for the degree of political accommodation or resistance to French policies? And, following from this question, who were the local leaders who acted as power brokers between distant European ministries and islanders of mixed origins? This is not to assert that the author is unaware of these basics for understanding the contemporary outcome of past history. But these basics are not always addressed directly by Henningham in this book; and to some extent they are obscured by the structure of the analysis and the arrangement of chapters by geographical territories--Vanuatu, New Caledonia, French Polynesia, Wallis and Futuna. Because of this serial rather than thematic treatment, much of the logic behind French actions since 1945 is less easy to disentangle; and the important similarities between political elites in the territories are not emphasized.

In outline, the analysis of French policies and their results begins with the case of Vanuatu. It is treated as a failure on the part of officials and an example of successful Melanesian resistance to European control, because successive French administrators misread the signs of genuine local "nationalism" and were bypassed by their British counterparts, who were willing to withdraw. In detail, as Henningham shows, the factions behind the political movement Nagriamel, the complex land claims, and a movement for independence--based in part on a reactionary defense of *kastom* and in part on the organizational framework of the Protestant churches--preclude such easy conclusions. Although the French may have underestimated the popu-

list roots of the independence movement and overestimated the influence of Francophone parties, the main characteristic of Vanuatu politics has been fragmentation, not "national" cohesion. And within that weak framework, Stephens's utopian bid for secession at Santo made as much political sense as French settlers' bid for power under French patronage. In the event, British indifference left the way open for the Vanua'aku Pati to bid for single-party control of the machinery of government, much as one-party states have been created elsewhere.

Another interpretation of this recital of events is that Paris and the local French administration failed to appreciate that their political constituency in the group was too narrowly based and that the politics of aid alone could not make up for the weakness of a pro-French elite in the face of the cohesion of local Protestant churches, who had patrons of their own in Australia and New Zealand and an ideology of devolved self-government. Lack of awareness of this Anglophone tradition, built up in Western Samoa and Fiji and practiced even within the special arrangements for the Cook Islands, left France without a convincing political argument. There is also the point, though it is not clearly made, that by the 1960s and 1970s, French ministries viewed their stake in the New Hebrides as more important for the French position in New Caledonia and Tahiti than for the survival of French settlers. As in the nineteenth century, labor migration could not be left to chance.[1] The lesson of Vanuatu for French businesses and settlers by the 1970s was simply to confirm their point of view about the continued need for settler control in New Caledonia.

The succeeding two chapters deal with this central example, dividing chronologically at 1978. The first (chapter 3) analyzes the reasons for French unwillingness to change the socioeconomic structure of New Caledonian societies during the period of reform and representative government that brought the Union Calédonienne (UC) into the position of partnership with the administration. The reasons why the UC was unsuccessful in challenging the business and settler oligarchy are thoughtfully discussed (p. 54). Behind the lack of metropolitan will lay broader issues encouraging conservatism, not least the nickel boom that brought in white and Polynesian immigrants, the reform of municipal government funded directly by France, and the marginalization of local Melanesians by the sheer pace of socioeconomic change. Chapter 4 deals with the increasing radicalization of this constituency from 1979 to 1989, the reasons for the rise of the Front de la Libération Nationale Kanak et Socialiste, and the later disasters and compromises leading to the Matignon Accord of August 1988.

Again, it would have been helpful to have made a more nuanced analysis of New Caledonian society. Leadership patterns on the Kanak side cover a

wide variety of education and experience of the French system of centralized control and representation, union representation, and office within the Catholic and Protestant churches. Ethnicity is not all; and there are important generational differences that may, in the end, be as important as intellectual positions when the referendum comes in 1998. Some Kanak leaders--Tjibaou, Machoro, Yewene--have had their power base in the Melanesian subsistence and cash-cropping peasantry with a long memory of land loss and a political rhetoric emphasizing the wider community of Melanesian liberation grievances and successes in Vanuatu, the Solomons, and Papua New Guinea. They share a sense of alienation, rather than full participation in the stops and starts of the political process in New Caledonia since the 1950s. Others--Ukeiwe or Nenou--have had a greater faith in political redemption through a share of economic development, and they have taken a different view of the predicament of "independence" among their neighbors. It is important to realize that these leaders may be no less "nationalist" for that, but have a different constituency among a local Melanesian elite emerging from the opportunities for social mobility in the 1980s (limited though they have been). Similarly, as is better appreciated, divisions between rural Caldoches and the immigrant commercial and administrative bourgeoisie have also run deep. Of the Vietnamese, Indonesians, Wallisians, Tahitians, and ni-Vanuatu, little is said-mainly because so few studies have been made of these marginal but politically important groups in New Caledonia (with the partial exception of immigrant Tahitians). Their vulnerability, however, makes them important in the political demography between the two antagonistic major ethnic groups, because neither of those--Melanesian or white--will command a clear majority.

Two chapters follow on French Polynesia, tracing the decline of a trading economy and the rise of services in a military-dominated outpost. Populist separatism in the shape of Pouvana'a never recovered from the 1958 referendum; since then, local politics have turned on local perceptions formulated by a *demi* elite on the advantages of relative autonomy and association as a French Overseas Territory. The rise and decline of Gaston Flosse as local broker in this system of high-level representation and simmering social discontent is presented as part of the politics of containment through state spending. The bigger issues--land, unemployment, an increasingly differentiated class structure with low levels of education at one end outbalanced by inflated incomes at the other--were simply postponed. Chapter 7, on France's nuclear-testing program, in effect supplies some of the explanation behind the political chronology of earlier chapters; and a final chapter analyzes French foreign policy in the Pacific, tracing efforts to make up ground lost in Melanesia, Australia, and New Zealand in the 1960s and 1970s.

For clarity of historical explanation, much in these latter chapters ought

to have prefaced the details of territorial analysis. For example, it is not made clear that by 1958, after the important *loi-cadre* reforms that opened the way for ministerial representative government in the territories, de Gaulle began to have second thoughts about the importance of the Pacific as an area for nuclear testing and that this change of mind had immediate political consequences. This conservative reevaluation in Paris coincided with the formation of a more determined conservative set of opposition parties in New Caledonia (usefully tabled on p. 58) and accounts for tacit metropolitan support for the destruction of the UC and Lenormand. Similarly, ministerial posts for the Tahitian Government Council were abolished in favor of direct executive control; diplomatic representation by foreign powers in the French Pacific was removed to Paris; and in 1963, to ward off American entry into New Caledonian nickel, greater executive control was also exerted and ministerial portfolios were abolished in Noumea. In other words, in the eight years before the explosion of the first French atomic bomb over Moruroa, there was a complete reassessment of the pace of political change and the strategic unity of French Pacific possessions. The consequential influence of the ministries of Defense and Atomic Energy on the territories also requires to be spelled out (for example, the Ministry of Defense's own analysis of these changes does not feature in the bibliography).[2]

A similar caveat applies to the analysis of the economic history of the territories. New Caledonia's nickel production was not merely a high revenue earner in the local balance of payments (the territory was the only French Pacific possession to pay its way); but in the Gaullist perception of France's position in a nuclear club of great powers, both nickel and chrome were independently sourced, free from North American or other constraints on French foreign-policy decisions outside NATO.

Finally, despite the excellent tables on political parties and demography, the analysis of social change required to explain the increasing instability underneath the patronage politics is minimal. In French Polynesia, for example, the constituency once appealed to by Pouvana'a has now changed from a rural peasantry to the urban unemployed. The events of October 1987, when Papeete was set on fire, are an indication of deep-seated problems in the structure of the Maohi and *demi* classes and a warning that the statute of 1984 that returned the territory to full internal self-government may make it more, not less, difficult to meet local aspirations. And as in New Caledonia there is a gap between disaffected youth and the older generation of power brokers drawn from among the *demi.*

One outlet for disaffection enjoyed by the French territories is, of course, emigration to France. Indeed, it is one of the bigger bonuses of continued political dependency. Unfortunately, migration is a topic not listed in the

index, though European immigration is treated in the text along with references to intraregional migration. There are signs that this avenue, too, may become more difficult within the regulations adopted for the European Union as a whole, in conditions of unemployment and recession in the metropolitan heartland. For, sentiment apart, the history of the relationship between France and its territories has been dominated by metropolitan interests--"interests of state." The French public, except at a superficial level, has never known or cared very much about Pacific possessions; and efforts of self-appointed spokesmen to direct attention to the Pacific as a new center of world power have not really been supported by intellectuals or politicians.[3] In any case, the Asian Pacific is a very different order of economic growth and political importance, and it is difficult to sustain an argument that automatically links Pacific island territories of whatever status to the new chariot wheels to the north. It is surprising, moreover, how little the political communities in New Caledonia or Tahiti are aware of the regional associations created in the context of Asian and Pacific Rim countries over the past few decades. The history of the Far East (Near North) does not figure in the curriculum of the French University of the Pacific as yet. And for France--with more direct links to the Far East markets and a tradition of direct diplomacy with China and Japan, Singapore and Malaysia--minor possessions such as New Caledonia, Tahiti, and Wallis and Futuna are very marginal bases from which to launch any regional initiatives.

In a sense, then, "contemporary" histories, even the best of them, are bound to be overtaken by events--the moratorium on and renewal of nuclear testing and the current French emphasis on educational reform, research, and mending fences with Australia and New Zealand. The politics of influence, rather than the politics of domination, would seem to feature more prominently in the calculations of a European power with worldwide interests. Henningham's book at least will help Australians and New Zealanders or Americans to reach beyond the journalistic polemic that has surrounded "France in the Pacific" to an intelligent, if limited, account of the reasons why France is still present in the region. Taken together with other works by Aldrich and Connell, it also stands well above any Francophone contributions to that explanation.

NOTES

1. This point is made in Robert Aldrich, *France and the South Pacific since 1940,* 225.

2. Ministère de la Défense, *La défense de la France* (Paris, 1988).

3. See the useful account of this effort by academic journalists to force French attention on a South Pacific-Asia axis. Aldrich, *France and the South Pacific,* 318-335.

Review: MICHEL PANOFF
CENTRE NATIONAL DE RECHERCHE SCIENTIFIQUE
PARIS

Under the very same title these are two good books, which on the whole offer a very fair evaluation of events, policies, and intentions lying behind them, especially as regards New Caledonia. Nevertheless, they are pretty different by their styles, their structures, and the impact they are likely to have on their readers, which is obviously all the more interesting. To put it in a few words, Henningham's sounds more concrete, lively, and opinionated, as may have been expected, after all, of a man who had lived on the spot tense hours with the Australian consulate in Noumea. Hence, from time to time, a trend towards a somewhat journalistic presentation. On the other hand, Aldrich's is dispassionate, more explanatory, and a bit more academic. Such differences between them are particularly striking, for example, in the way each writes on the 1971 to 1980 developments in the New Hebrides (Henningham, pp. 25-46; Aldrich, pp. 196-239). To begin with, just take the titles of the relevant chapters: Henningham's reads "Debacle in Vanuatu" whereas Aldrich's is worded "From the New Hebrides to Vanuatu."

The first feature to be commended is the way in which both handle those documents left by the actors in the events and the huge secondary literature devoted 'to their topic. Cautious and critical is their selection. And so are their reading of and quotations from them. For example, not only have they been able to resist simultaneously any influence by militant writers like Chesneaux or disingenuous interpretations of scientific data by the Société des Etudes Historiques of Noumea, but they also have given all such biased writings the only rightful place in their own books: that of evidence of the strong polarization of educated opinion in the French Pacific. From this viewpoint, Aldrich's review of involvement in and publications of French intellectuals on the New Caledonia affair (pp. 276-277) may well stay as a model to be followed and imitated, especially as he duly realizes that some people under review consider it a new peg on which to hang their activism and ideologies, As a result, one is tempted to believe that the study of the most recent past by professional historians is quite possible after all, a feeling not too unpleasant.

All important events and issues over the last forty years are considered by each writer, from Pouvana'a's ascendancy to Flosse's maneuvers, and from the setting up of Union Calédonienne to the implementation of the Matignon Accord. Of course, such dramatic affairs as the wave of violence in New Caledonia, "Operation Victor," the killing of Tjibaou, or international campaigns against French nuclear testing receive full treatment, but they are not given too much importance in relation to economic and social devel-

opments; nor are they used as magic keys to decipher contemporary history, a sober approach to be emphasized. One of the most valuable findings of this survey of four decades, which was not entirely unexpected, reads thus: French policy has displayed strong continuities throughout the period, whether the right or the left holds power in Paris: at all events Tahiti and New Caledonia had to remain French (Henningham, p. 239). Besides, most island subjects were content to trust the spirit of reforms then prevailing in Paris and to become French citizens. Quite a few years elapsed before Pouvana'a and his RDPT supporters envisaged something like independence for Polynesia. In New Caledonia it was not until 1975 that a party, the FULK of Uregei, demanded for the first time true independence.

However, as Aldrich reminds us (p. 346), during the late forties and fifties France was far in advance of its imperial counterparts (Great Britain, the United States, the Netherlands, Portugal) in granting civil and political rights to its Pacific subjects. This trend was reversed on the creation of the nuclear-testing facility on Moruroa and the nickel-mining boom in New Caledonia. But today Oceania as a whole has remained one of the least completely decolonized regions on the globe and the TOM (French Overseas Territories) are only a subset within a much larger cohort (Aldrich, p. 347).

The French state as arbiter and party in the local competition between natives and settlers: this is a major topic in both books and very well dealt with. And so is the companion topic of independence or secession, which over and over again has been championed by white communities whenever the Paris government was contemplating taxation in the colonies or any regulation protecting the native people, for independence had two different meanings and two conflicting sets of supporters. A case in point is what happened to all efforts by Pisani and their backlash in Noumea (1984-1985).

In a logical way, economic changes in the territories only reinforced the dependence of these islands on France and on French largess. Therefore, the more that bargaining power is enjoyed by every Tahitian or Kanak as individual consumers and workers, the less successful will they be in achieving independence. If the TOM refuse privileged relationships with Paris, that would mean the end of consumer society and of the welfare system existing in New Caledonia and French Polynesia. Such a prospect ironically provides comfort both to anti-*indépendantistes* and to supporters of a French-sponsored independence.

In assessing French colonialism, Aldrich rightly emphasizes that political and administrative centralism prevailing in French colonies and later in the TOM is not different anyway from the one prevailing in the metropole itself (p. 351). In my opinion, this is a most important point with regard to British and American readers. It will hopefully help them understand many of the

quandaries in which both the French government and the *indépendantistes* have been struggling for so long.

France's policy in the Pacific took little account of the neighbors of its territories. The French view of an exclusive relationship between Paris and its territories meant that the TOM existed in extreme isolation from other islands, which was conducive to a widespread image of racism and arrogant domination. This is a point well made by Aldrich (p. 358). But both writers insist with equal acumen that France was thus playing into the hands of all the Pacific states, which were only too glad to get at their disposal a "convenient villain" (Henningham) or a "scapegoat" (Aldrich) able to deflect feelings of frustration or anger from their own citizens. Such was the burden that French officials, politicians, and settlers foolishly fastened to the image of their country for a long time. After the Matignon Accord, however, this enduring policy was reversed and in the 1990s closer relations with Fiji, Australia, and New Zealand, together with aid packages given to the microstates, have resulted in greatly improving the image of France and mollifying criticisms against nuclear testing and the situation in New Caledonia.

If one were to quibble over the congratulations these two books so evidently deserve, one would perhaps regret that both are taking French policies in the Pacific and their results too seriously, to the extent of turning them into a noble topic worthy of subtle and conscientious evaluation. After all, as each writer rightly remarks, it is a matter of relative insignificance, except when used as a weapon in domestic politicking in Paris, and the French public at large does not care at all for New Caledonia or French Polynesia. So, to regard the whole stuff as a masquerade may have been a sensible alternative approach to the topic. "Masquerade" does not necessarily mean a pleasant parlor game--it may be bloody as was the case with the bombing of the *Rainbow Warrior* (1985) or the massacre at Ouvea (1988)--but more significantly the word could aptly convey ideas of the petty make-believe, shortsighted selfishness, and gross prejudice that have highlighted colonial history so often.

Response: ROBERT ALDRICH
UNIVERSITYOF SYDNEY

France in Oceania: History, Historiography, Ideology

When Stephen Henningham and I began our research on Oceania, in the mid-1980s, the French territories of the South Pacific had temporarily captured public attention. Violent clashes between *indépendantistes* and loyal-

ists pushed New Caledonia to the brink of civil and colonial war, the sinking of the *Rainbow Warrior* in 1985 indicated French determination to remain a Pacific power, nuclear testing proceeded apace in Moruroa despite regional condemnation, a riot in Tahiti in 1987 led to the burning of shops in Papeete and threatened a greater conflagration in French Polynesia, and geopoliticians warned about military menaces in a region proclaimed to lie in the new political and economic center of the world.

A decade later, the situation has changed dramatically The various factions in New Caledonia grudgingly cohabit under the auspices of the Matignon Accord of 1988, a moratorium on French nuclear tests has remained in place since 1992, France's Polynesian islands muddle through economic difficulties and political infighting thanks to large French handouts, the Pacific capitals have mended fences with Paris, and no one much discusses the international role of the islands. All is perhaps not quiet on the South Pacific front, and various commentators warn about potentially explosive situations. Yet, the islands have sunk back into the relative obscurity and insignificance that have been their lot. One example: the situation in New Caledonia was critical in the midst of the 1988 French presidential elections, and the right-wing parties used the Ouvea hostage incident in a desperate, though unsuccessful, attempt to secure electoral advantage. The South Pacific has played no role whatsoever in the 1995 presidential elections in France. Both French candidates and French voters have their gaze steadily fixed on other horizons.

Dr. Henningham's and my works made efforts to respond to a certain neglect of the French South Pacific islands in scholarly literature and to counter some of the more polemical works that had appeared. As Paul de Deckker and Michel Panoff note, our works indeed differ. Mine, for instance, focused more on a metropolitan French perspective, undoubtedly in line with both my training as a historian of France and my feeling that the French position on the South Pacific (although often very badly presented) was frequently misunderstood in the region. Dr. Henningham took a more regional and political approach, nourished by his diplomatic experience in the South Pacific and his collaboration with experts in Pacific studies in Canberra. Both of us, however, were concerned with a central paradox: Why had France "stayed on" in Oceania when the supposed "logic of history" demanded decolonization? As Colin Newbury says, we both found the answer more complex that many commentators thought--it was not just "a simplistic regression in 'colonialism' in an age of 'independence.' "

Much of the explanation lay outside the Pacific. Between my *France in the South Pacific, 1842-1940* in 1990 (London: Macmillan; Honolulu: University of Hawai'i Press) and *France and the South Pacific since 1940* in

1993 (London: Macmillan; Honolulu: University of Hawaii Press), John Connell and I published *France's Overseas Frontier: Départements et Territoires d'Outre-Mer* in 1992 (Cambridge: Cambridge University Press). It is a study of France's ten remaining overseas "possessions''--the Pacific territories, Saint-Pierre-et-Miquelon in the North Atlantic, Martinique and Guadeloupe in the Caribbean, French Guiana in South America, La Réunion and Mayotte in the Indian Ocean, and France's claim on part of Antarctica and various sub-Antarctic islands. It showed that the maintenance of a French sovereign presence in Oceania was not a unique case of French influence outside Europe; the French overseas departments and territories have played a significant place in French international perspective--in rhetoric and policy--since the decolonization of the rest of France's empire in the early 1960s.

This suggests that the history of the French islands, and indeed the other islands of Oceania, must be seen in a broader context. Culture contact, colonialism, and the sequels to colonialism mean that a strictly island-oriented approach to the history of the South Pacific must remain inadequate. Although local conditions, strategies, and maneuvers by island groups and episodes of collaboration and resistance--well investigated by local historians, ethnographers, and ethnohistorians--must be understood in order to decipher the history of the islands, so must the wider context, as Oskar Spate so well demonstrated in his magisterial works on Oceania. Decisions taken elsewhere, concerns current in foreign capitals, and the interests of foreign missionaries, traders, and politicians determined the history of the South Pacific.

I would venture to suggest that this is even more true of Oceania than of other colonized areas. Without the large populations, extensive land area, and bountiful natural resources of Africa or Asia (or Australasia), the Pacific islands were attractive largely as stepping-stones to other places. The almost eerie links in colonialist rhetoric make the point. In the 1840s, the French government searched for *points d'appui*, support stations for the sailing fleet; in the 1980s, Oceanic lobbyists talked about the strategic importance of the islands as bases for France's nuclear-powered fleet. In the 1880s, Paul Deschanel argued that the opening of a canal through the isthmus of Panama would revolutionize the economy of the world and give the Pacific islands a major place in the new international economic order; a century later, the vogue for the "Pacific Rim" led to similar claims. As Professor de Deckker points out, France, like Britain, had a "world vision," and an investigation of this world vision is necessary to comprehend the history of the Pacific.

Another, and corollary, dimension of the history of the French Pacific

that must be taken into account is what Dr. Panoff astutely calls the sometimes bloody "masquerade" of debate on the Pacific. Domestic politicking in both metropolitan France and the Oceanic territories forms an intrinsic part of such larger questions as nuclear testing and secession versus integration. Political contenders inevitably search for ways to score points in elections, and the Pacific islands have provided one way to do so. Maurice Satineau's fine analysis of New Caledonian politics illustrates how individuals, parties, and publicists can attempt to use faraway developments for their own political benefit.[1] This, indeed, was part and parcel of the longer run of colonial history, as Dr. Panoff adds. Others can get into the game as well, as both defenders of "Greater France" and radicals could champion one or another point of view on Pacific issues. In the territories themselves, the permutations of ideology and strategy reveal the ways in which local politicians, like their counterparts everywhere, try to obtain and retain power. The personal and party political clashes between the FLNKS and the LKS in New Caledonia, as well as among the seemingly countless factions of the anti-independence parties in French Polynesia, are examples.

Moreover, ideologies are seldom so clear-cut as they seem. A close reading of the main *indépendantiste* newspaper in New Caledonia, the FLNKS-sponsored *Bwenando,* published in the mid-1980s, is a case in point. Articles and illustrations ceaselessly called for Kanak and socialist independence, yet the arguments oscillated among three poles. There was constant reference to the precontact Melanesian culture of New Caledonia, the patrimony it represented for present-day Kanaks, and the ways that it could serve as a foundation for an independent Kanaky. There was also a regular, and at times ritualistic, invocation of "revolutionary" arguments about throwing off the colonialist yoke, ending capitalist exploitation, and establishing proletarian solidarity with other oppressed groups around the world. Nevertheless, *Bwenando* alluded to French ideas of constitutionalism and representative government, the ideals of the Declaration of the Rights of Man and Citizen, and continued and amicable ties with France.[2] That mixture of philosophical currents is neither hypocritical nor surprising, but it does show that from a historian's point of view ideological lines are seldom so straight as they appear to the protagonists in political dramas and to their sympathizers.

The mixed rhetoric of *Bwenando* points to yet another side of the history of the French islands: their social history. Dr. Newbury rightly points to the profound change created in French Polynesia by the transformation of a rural peasantry into an urban proletariat, and Professor de Deckker speaks of the "ambiguities and cultural destabilization" that have occurred because of developments in the region. This is, I feel, very important; in only a generation or two, migration and urbanization, wage labor, the telecommunica-

tions revolution, increasing literacy, representative institutions, and consumerism have made the Pacific islands a greatly different place from what they were at the time of Gauguin and Segalen. The process of what it is now rather unfashionable to call "modernization" has been telescoped into a very short period in the history of the islands of Oceania.

Several things can be said about this social transformation. First, these changes are not peculiar or unique to the French Pacific. Indeed, compared to Hawai'i or such Caribbean islands as Puerto Rico and Saint-Martin, the Oceanic islands have been preserved from some of the worst effects of that transformation; Papeete and Noumea, fortunately, still lack the architectural monstrosity of Waikiki or the murderous crime of Port Moresby. But, secondly, it is dangerous to plead that some of these changes ought not to have taken place at all or that islanders ought not to have the "benefits" of contemporary society that people elsewhere "enjoy"; it is disingenuous that those who listen to the radio or watch television almost every day should bemoan the arrival of these media in the islands and lament that they were somehow not kept safe from Westernization. "Paradise" and "paradise lost" are the oldest, and most tiresome, themes in writing about the history of the Pacific. Finally, it is unfair to blame colonialism per se--in this case, French administration--as the evil purveyor of these changes; comparative studies might show that the same trends, albeit at different speeds, affect independent and "colonial" islands, those of the Pacific and those elsewhere in the world. "Colonialism" and "neocolonialism" have the same result, and attempts to avoid both have met with largely unsuccessful results, or produced bloody consequences, around the world.

The history of the islands is, therefore, a *métissage* of indigenous and foreign, traditional and modern, reality and rhetoric, local concerns and international contexts, epiphenomena and structural changes, *histoire événementielle* and the *longue durée.* These are the issues that I (and, I think, Dr. Henningham as well) was trying to explore.

Both of our books tried to cover developments in the French Pacific up until the time of writing, and also to use the sources then available. The release of new archival materials--the French archives enforce a thirty-year delay for access to primary documents--will undoubtedly bring to light new information about the French in Oceania and may reveal important new dimensions to such controversial subjects as the attempts to stifle Pouvana'a O'opa's and Maurice Lenormand's movements in the 1950s. But research by historians and others is already deepening our knowledge of such issues as French nuclear testing, the economic and demographic situation of the islands, and the role of religion in Tahiti.[3] Much of the new research is being done by students and scholars at the French University of the Pacific in

New Caledonia and Tahiti, and one can hope that this institution will play a key role in furthering research on the territories.

Two recent theses bode well for French research on the South Pacific. Jean-Marc Régnault's doctoral thesis, defended at the French University of the Pacific in early 1994, provides an exhaustive examination of the political and institutional history of French Polynesia since 1945. Particular chapters trace the evolution of political institutions and the organization and ideology of different political parties, especially the pro-independence Ia Mana Te Nuna'a and the Tavini Huira'atira. Régnault also examines in detail the history of arguments on nuclear testing. Régnault's sources were the position papers, tracts, and other materials of the various parties (including considerable unpublished material), press reports, and interviews. He argues that in the "French Polynesian model" that has prevailed since the democratization of local institutions after the Second World War, political activity is more a question of clientelism, personal networks (including family links), and even personality cults than of ideology. The ideology that appears in party platforms is largely secondhand and, as shown by the traditionally radical rhetoric of the Polynesian *indépendantistes,* is often ill-adapted to the realities of the islands. Régnault says that from the 1940s to the 1980s, the French government did everything possible to forestall political and administrative autonomy. Even the setting up of local municipal councils in 1972--a previously unexplored subject (and a lacuna in my own book) to which he devotes considerable attention--was an attempt to silence demands for greater self-government. Recent developments, such as the autonomy statutes of the 1980s, have given renewed vigor to clientelism in local politics. The masses in French Polynesia, Régnault concludes, are "indifferent" to the French yet work out a *modus vivendi* that provides them with significant advantages.[4]

Isabelle Merle's thesis, presented at the Ecole des Hautes Etudes en Sciences Sociales in Paris in 1993, examines French settlers in New Caledonia from the 1880s to the 1920s; it draws on archival materials in both the territory and France, a quantitative survey of convicts, interviews with their descendants, and government records on projects for French colonization of the island. She convincingly suggests that French settlement was closely connected with the "social question" in nineteenth-century France and a misguided attempt to turn urban criminals into sturdy antipodean peasants. She traces the fortunes--or, most often, misfortunes--of the *transportés,* especially after they completed their sentences. Many were required to remain in New Caledonia, but rather than forming a pioneer yeomanry they became a poor, itinerant, and despised fringe population, developing a dislike for the Noumea bourgeoisie and hatred for the Melanesians alongside whom they lived. Merle thus traces the genesis of French settlement and

explains how the failure of that project to live up to its expectations patterned the subsequent history of New Caledonia.[5]

Much remains, as the tried and true phrase has it, to be done. One particular area needing work is social history.[6] As Dr. Newbury remarks, there is almost no serious material on the minority groups in New Caledonia (despite Dorothy Shineberg's long-awaited study of ni-Vanuatu migrants), although Vietnamese, Indonesians, and Polynesians have played an important role in the territory's history. Surely the French colonial archives (and the Dutch archives, in the case of the Javanese) would yield useful information. Gérald Coppenrath's fine study of Tahiti's Chinese only covers the period up to 1967;[7] yet since that time, the Chinese have continued to play an important economic role in Tahiti and the outer islands and, since they became French citizens, have also had a distinct political life. Studies of urbanized Melanesians and Polynesians are only just beginning, but it would be good to have historical monographs on such groups as outer-island migrants to Tahiti (even before the nuclear boom) or Melanesians who worked in the mines or domestic service in New Caledonia. The history of women in the islands (whether indigenous or migrant) remains largely to be written. Some of the types of study pioneered by French social historians quite a long time ago--on the history of the family, marriage strategies, and child-rearing--have not yet been applied to the Pacific; they might enlighten us on such areas as *métissage.* Areas that have more recently gained interest could be particularly pertinent to the Pacific; one is the study of collective violence and its place in society.[8] Another is the history of the environment --a perfect area for research on the French islands.

Not all has been said about the political history of the territory, especially the relations between politics and other areas of life. Dr. Newbury also rightly points to the interest of a study of the political leaders of the territories, the ways in which their backgrounds formed their opinions, the alliances and clashes among them (by place of origin, religion, training), and the networks through which they marshaled support. There is no good full-length study of religion and politics in New Caledonia (a parallel to Saura's study of French Polynesia), nor is there a thorough study of the missionaries *tout court,* with the exception of James Clifford's excellent account of the ethnologist-pastor Maurice Leenhardt.[9] A study of the press in the territories since the Second World War would also be fascinating in showing how political opinions are formed, manipulated, and reflected; a study of the handling of Oceanic affairs by the metropolitan press would provide a good complement.

The economic history of the territories has not received great attention. There is no good history of nickel mining or transport (whether by sea or by

air). A study of retail trading networks would tell us much about relations between the territories and overseas markets, between primate cities and isolated villages and islands, and between the different ethnic groups involved in marketing. Someone could write a history of banking, French financial policy, and the French Pacific franc; the history of tourism (and the "hospitality industry") would be worthwhile, too. The depression of the 1930s also deserves more attention.

Particular times and places still lack adequate coverage. The years between the two world wars, the time when the French colonial system reached its apogee, has not been intensively studied. Kerry Howe's superb book on the Loyalty Islands does not go past the end of the nineteenth century, and Greg Dening's work on the Marquesas Islands ends in 1880;[10] there is not a single thorough historical monograph on the twentieth-century history of the outer islands of French Polynesia or New Caledonia. The number of first-rate books on Vanuatu can be counted on the fingers of one hand, and the number of high-quality studies on Wallis and Futuna is even smaller.

Comparative studies may be a particularly fertile ground for investigation. More systematic comparisons of the policies of colonizers of Oceania--France, Britain, Germany, Japan, the United States, Australia--would undoubtedly lead to valuable conclusions. They might also pave the way for comparative studies on more focused topics: transport in the islands, the copra industry, women in island societies, the Chinese in Oceania. Comparative studies of Polynesians and Melanesians from the French territories and in other islands would be fascinating. Comparative analyses of dependent countries and independent microstates might underscore some of the advantages and detriments of each status. There could also be fruitful comparisons of the islands of the South Pacific with those of the Caribbean and Indian Oceans.

My own research, as evidenced by the book on French overseas departments and territories, is moving into a comparative direction. I have in press a textbook on French colonial history, and John Connell and I are completing a study of various imperial "confetti" of European nations, the United States, Australia, and New Zealand--there are, perhaps surprisingly, some forty such entities.[11] Two other projects are in a similar comparative vein. I am contributing an article on France and Germany in Oceania to a forthcoming German handbook of the South Seas.[12] A longer-term project on which I have just begun work takes me from the Pacific to the Indian Ocean to study sovereignty and dependency, using as examples the French outposts of La Réunion and Mayotte and the independent states of Mauritius and the Comoro Islands.

There is, therefore, no dearth of subjects for study--and if the field of

history has not been particularly well served, there have been even fewer contemporary studies of the geography, anthropology, and economics of the French Pacific islands. Yet there is no lack of documents, including those of the French overseas archives in Aix, the national archives in Paris, the magnificent navy archives in Vincennes, the newly-housed archives in Papeete and Noumea, and materials in Australia, New Zealand, Britain, and elsewhere. Various types of material are available, from government reports to private papers, statistical series to memoirs and letters. Perhaps a vital source to exploit as soon as possible are the testimonies of the people who have participated in the momentous events in the South Pacific since the Second World War; many are still living but are aged, and time is short to collect oral histories.

We can hope that some of these studies will not just find new sources and unearth new information but suggest new interpretations. A recent article on the *Rainbow Warrior* affair, with provocative revisionist views about French and New Zealand motives behind the clash, suggests that definitive explanations have not been advanced on many subjects.[13]

The danger, however, is that the students and academics (particularly in the "Anglo-Saxon" world) will not be available to complete the tasks. Writers in Australia and New Zealand, as well as in Britain and the United States, have been able to provide new and different perspectives on the French islands of Oceania, and some of the pioneering work was done by scholars such as Newbury, Shineberg, Howe, Dening, Connell, Bronwen Douglas, and Alan Ward. Yet the South Pacific is not an area of intense interest for postgraduate students at present; at least in Australia, the difficulties of obtaining scholarships and finding jobs dissuade prospective research students. Some who did write on the French islands (including myself) have moved on to different subjects and areas. There remains a considerable gap between specialists of the French Pacific territories and those whose primary area of study is the "Anglophone" islands; too few works have been translated from one language to the other. The first challenge to a better understanding of the history of the French Pacific territories is thus to find scholars--in both English and French--to do the work.

NOTES

This article was completed before President Jacques Chirac announced in June 1995 that France would conduct another series of nuclear tests in French Polynesia, a decision that provoked great protest in the South Pacific and elsewhere. Combined with recent demonstrations in New Caledonia, this development shows that the French islands have not ceased to be the center of controversy.

1. Maurice Satineau, *Le Miroir de Nouméa* (Paris, 1987).

2. This is the gist of a paper I presented on "Culture, Politics, and the Campaign for Independence: Kanak Identity in New Caledonia in the 1980s" at the conference of the European Society for Oceanists in Basel in December 1994.

3. Among book-length works, see Jean-Marc Régnault, *La bombe française dans le Pacifique: L'Implantation, 1957-1964* (Papeete, 1993); Bengt and Marie-Thérèse Danielsson, *Moruroa, notre bombe coloniale* (Paris, 1993); Bernard Poirine, *Tahiti: Stratégie pour l'après-nucléaire* (Papeete, 1992); Poirine, *Tahiti: Du melting-pot à l'explosion* (Paris, 1992); Poirine, *Three Essays from French Polynesia* (Sydney, 1993); Bruno Saura, *Politique et religion à Tahiti* (Papeete, 1993). A useful overview of French Polynesia's history is Pierre-Yves Toullelan and Bernard Gille, *Le mariage franco-tahitien: Histoire de Tahiti du XVIII siècle à nos jours* (Paris, 1992).

4. Jean-Marc Régnault, "Histoire politique et institutionelle des Etablissements français de l'Océanie et de la Polynésie française (1945-1992)."

5. Isabelle Merle's thesis is forthcoming as a book under the title *Expériences coloniales: La Nouvelle-Calédonie, 1853-1920.*

6. The following comments are limited to the field of history.

7. Gérald Coppenrath, *Les Chinois de Tahiti: De l'aversion à l'assimilation, 1865-1966* (Paris, 1967).

8. Bruno Saura, *Les Bûchers de Faaite: Paganisme ancestral ou dérapage chrétien en Polynésie* (Papeete, 1990 and 1994), a study of the religious frenzy and violence on one of the Polynesian islands.

9. James Clifford, *Person and Myth: Maurice Leenhardt in the Melanesian World* (Berkeley, 1982).

10. K. R. Howe, *The Loyalty Islands: A History of Culture Contacts 1840-1900* (Canberra, 1977); Greg Dening, *Islands and Beaches: Discourse on a Silent Land, Marquesas 1774-1880* (Honolulu, 1980).

11. These are, respectively, *Greater France: A History of French Overseas Expansion* (London, forthcoming in 1996); *The Last Colonies* (Cambridge, also forthcoming in 1996).

12. Hermann Hiery, ed., *Handbuch der deutschen Südsee* (Paderborn, forthcoming).

13. G. F. Taylor, "Victim or Aggressor? *New* Zealand and the *Rainbow Warrior* Affair," *Journal of Imperial and Commonwealth History* 22, no. 3 (1994): 512-530.

Response: STEPHEN HENNINGHAM
AUSTRALIAN NATIONAL UNIVERSITY

Perspectives on a Contemporary History

When serving as a junior Australian diplomat to New Caledonia from 1982 to 1985, a posting that also involved several visits to French Polynesia and one to Wallis and Futuna, I from time to time thought: someone should write a general study of the history and politics of the French Pacific territories and of France's relations with the countries of the Pacific islands region. The books available at that time on this subject, whether in French or in English, were either very dated or inadequate, or both. My opportunity to attempt this task began, unexpectedly, in early 1988, after I was granted a research fellowship in the Research School of Pacific and Asian Studies at the Australian National University.

The job had been advertised without particular reference to the French Pacific, and had attracted numerous applicants. I suspect the success of my application reflected in considerable part the heightened level of interest in Australia, at least around that time, in the Francophone Pacific, and in the implications for France-Australian relations of issues and trends in the French Pacific territories. In the light of this interest, in Australia and elsewhere, I set out to write a book that would appeal, it was hoped, to both the academic and general reader. This ambition helped shape my decisions on the book's format and style. I also decided, even though the main focus of the book is on recent decades, to include an opening chapter that reviewed the history of the French presence in the region up to around the time of the Second World War, so as to offer an overview in one volume.

I had scarcely settled in at the Australian National University when I was disconcerted to be advised that Robert Aldrich of Sydney University was engaged in what seemed to be a very similar project. Over a cordial lunch I was pleased to learn that our approaches were rather different. I had considerable firsthand knowledge of the French Pacific territories, but only a passing acquaintance, at that time, with metropolitan France; Robert's experience was the converse. My main focus was to be on contemporary political issues and their recent context; Robert put much of his emphasis on how French perceptions of and policy on the Pacific islands region had developed, and on how the territories fitted into the broader context of French colonial and contemporary policy. The eventual outcome was, I believe, two studies that are in important respects complementary. Each study, of course, has its particular strengths and weaknesses, as our distinguished reviewers have noted.

Albeit complementary, the two books do not of course, individually or together, offer the last word on the subjects they consider. For one thing, they are both studies by outsiders. This has some advantages, including that of a more dispassionate perspective. (Sometimes though one can be too dispassionate. I refer, accurately, to the bombing of the *Rainbow Warrior* as an act of "State Terrorism," whereas Robert declines the opportunity to give us his own assessment.) But in any case, we would learn much from further insider accounts, by members of the various communities in the Francophone areas. I will note in passing that two recent studies by members of the Caldoche community in New Caledonia provide some interesting steps in this direction (see Barbançon 1992; Terrier-Douyère et al. 1994).

Opportunities also exist for more intensive study of the various archival sources, especially as they relate to developments during the twentieth century.[1] The main collections are in France, in the French territories, and, in some measure, in Vanuatu. But there are also important materials in the United Kingdom on the New Hebrides/Vanuatu and in the United States and, in some measure, Australia, on the Second World War period. These materials are highly fragmented and have many gaps. Some important series, notably those relating to "Native Affairs" in New Caledonia, are as yet only partly available. Other materials, relating to the period since the Second World War, are yet to be opened to public scrutiny.

Nonetheless, the available archival resources offer potentially rich harvests, when consulted in combination with other materials, which include some important private papers and a few notable memoirs, along with a surprisingly rich variety of press reports and of secondary materials. One example from my recent research concerns the extent to which Paris was severely rattled by conditions and trends in the French Pacific colonies and in the New Hebrides Condominium in the immediate postwar years, as it sought to reassert its authority. The nationalist movement in Tahiti was at its peak; an abortive revolt took place in Wallis; conditions in New Caledonia were unsettled; and the indentured Vietnamese workers in New Caledonia and, especially, the New Hebrides seemed to be on the verge of insurrection.[2]

The written sources should of course be consulted in conjunction with oral testimony of various kinds, to the extent it is accessible. Though I was not at the time consciously collecting material for a book, I learned much from a broad variety of conversations during my time on posting in New Caledonia. When I later returned, on several occasions, to the French territories, and also visited Vanuatu and other Pacific islands countries, I benefited greatly from numerous discussions and interviews. These encounters focused in particular on recent events, but often included consideration of a

broader time span, and enlightened me to varying and often conflicting historical traditions and perspectives.

Considerable work has been done in Vanuatu in the tape recording of traditions and recollections, in a project developed by Dr. Huffmann at the Cultural Centre. Historians and anthropologists have done some similar work on a smaller scale in the French territories, but across the board, much further work remains to be done. Such material, as it is collected and made available, will one day provide a valuable resource for subsequent efforts at historical synthesis. More immediately, it also provides an occasion for local communities and groups to develop and debate their own understandings of and perspectives on their own historical experiences.

One rewarding avenue for further research, based on the rich trove of material mentioned above, may be with respect to setting the experience of the French Pacific territories in their wider Pacific islands settings. The more I learn of the Polynesian cultural complex, the better I understand Wallis and Futuna and French Polynesia, despite the pervasiveness of Westem influences on that latter territory. Similarly, the Melanesian context helps illuminate aspects of New Caledonia's history and society. In addition, concerning New Caledonia, it remains especially important to explore, during the course of the twentieth century, the richness and variety of its connections with the New Hebrides (now Vanuatu). A fuller understanding of the recent histories of these two countries, I am convinced, will depend substantially on their examination in parallel.

When I sent my final typescript to the publishers, in late 1990, France continued to test its nuclear weaponry in French Polynesia, and tensions in New Caledonia had only recently subsided. In April 1992, a couple of months after the book was published, President Mitterrand announced the suspension of the testing program. By this stage, calm conditions had become routine in New Caledonia.

When one seeks to write a "contemporary history," one risks being in some measure bypassed by events. But fundamental issues and underlying trends often also display strong continuities, and the course of events often doubles back. As this article goes to press, a new French president, Jacques Chirac, has just announced the resumption of the testing program, unleashing a storm of criticism. His views and approach on New Caledonia may have evolved significantly since he was French prime minister in 1986-1988. But if this is not the case, his presence at the head of France could in due course unsettle the interim consensus established in that territory, especially as the referendum on the territory's political and constitutional future scheduled for 1998 draws closer.

Concerning nuclear testing, I commented in my *France and the South Pacific* that further investigation was necessary into the implications and possible risks of the tests. Now I would be inclined to take that suggestion a step further and support strongly the establishment of an independent international commission of enquiry, under the auspices of the South Pacific Forum, into these questions (see Henningham 1995a, 1995c:90). If France is genuine in its statements that it wishes to play a constructive role in the region, and if it has full confidence that the tests and their legacies are indeed innocuous except in a very small immediate area, it should have no fears--and should indeed welcome such a commission. Or am I being disingenuous?

NOTES

1. I have been drawing on these materials in some of my recent work. See the articles listed in the references.

2. See Henningham 1995b. In his book Robert Aldrich examines the incident in Wallis, but rather sketches over the unsettled conditions in the other colonies.

REFERENCES

Barbançon, Louis-José
1992 *Le pays du non-dit.* Noumea.

Henningham, Stephen
1994a "The Best Specimens in All Our Colonial Domain": New Caledonian Melanesians in Europe, 1930-31. *Journal of Pacific History* 29 (2): 172-187.
1994b "Une haine farouche à l'encontre de leurs alliés": The American Presence, the French Administration, and the Local Population in New Caledonia, 1943-44. *Journal de la Société des Océanistes,* no. 98: 21-42.
1995a French Nuclear Testing: Is It Time for an International Enquiry? *Pacific Research* 8, no. 1 (February): 31-34.
1995b Labour Resistance and a Challenged Colonial Order: The Asian Workforce in New Caledonia and the New Hebrides around the Time of the Second World War. *Journal of Pacific Studies,* special issue on labor edited by Doug Munro, in press.
1995c *The Pacific Island States: Security and Sovereignty in the Post-Cold War World.* London: Macmillan, in press.

Terrier-Douyère, Christiane, et al.
1994 *Etre Caldoche aujourd'hui.* Noumea: Ile de Lumiere.

REVIEWS

MELANESIAN MUSIC ON COMPACT DISC: SOME SIGNIFICANT ISSUES

Peter Russell Crowe
European Seminar in Ethnomusicology
Toulouse, France

THIS SHORT ESSAY partially introduces the canvas of Melanesian music by reviewing a baker's dozen of compact-disc sound recordings (CDs). It is meant to be appreciative, rather than critical in the comparative evaluation sense, but has to be selective for two reasons: first, there are not many Melanesian CDs in the catalogues, yet; and second, the region is rich, complex, and varied, both linguistically and culturally. It is estimated that Papua New Guinea alone has more than 750 languages, the Solomon Islands 80, Vanuatu more than 100, New Caledonia about 30--we can say maybe a thousand total--although the degrees of linguistic difference in Melanesia are not as striking within each of its two main families, Papuan and Austronesian, as they are between, say, Chinese and Japanese. There is also some homogeneity in the natural environments, all tropical. By population size, by proximities, by variety, Melanesia contrasts with Polynesia. Everywhere, it is hard to predict (but not impossible) which area will be polyphonic, or which will employ coordinated ensemble slit-drum music, or which scales may be found where. Despite its astonishing variety, there seems to be a Melanesian traditional music "sound," directly recognizable to anyone who has heard enough but eluding description: it is something sensed, and it would be good to know how and why that is so. The presence and persistence of traditional

Pacific Studies, Vol. 18, No. 3--September 1995

musical culture in Melanesia today offers a patchwork scene: in some areas it has sunk from view, but happily not in all.

In common with artworks and material culture, Melanesian music and dance were greatly affected by exterior contacts impinging on the cultural ecologies that had inspired the variety of songs and ceremonies. We are reminded of ideology being disease, reducing the cultural richness a population had created, animated.

Today, one may see beautiful-object displays in every important ethnographic museum: here the *malanggan* carvings and Ambrym slit-drums, there the Kanak masks, Papuan basketry, and shell-inlaid carvings of the Solomons--all resplendent and mostly gathered long ago. Such things were and remain obviously collectable, valued as tangible objects mostly because museums demanded filling with collections. The intangible arts are a different story. Music and dance could never be readily collected, crated, and consigned--at least not until recently, when sound and film recorders could gather cultural expressions. However, it is as if these techniques borrow facsimiles.

To imagine being in the place of an ethnomusicologist, those who work in museums would need to consider going to the field merely to collect three-dimensional holograms instead of solid objects. Inspectable on all surfaces from any angle but not tangible, such an image, ghost, or facsimile could hardly be weighed, cut, or otherwise physically tested. The dilemma of the ethnomusicologist is that the only way to take real songs and dances out of their natural environment remains to import-export the performers. Then you have the people but not the environment: the correct leaves do not grow in Europe or the United States, for instance. Because performers go away and die, they are neither fully countable nor accountable except by dealing in shadows-- sciamachies over images, not real objects, only "good counterfeits." The surfaces of such art and dance works, intangibly "solid," will seem to have been captured, may be heard, and may permit some inspection, some apparently diligent scientific classification. Indeed, recent digital-technology developments have brought all this very close with the portable DAT sound-recorder or a digital videodisc-camcorder.

Although we have here a tidy bunch of recent CDs of Melanesians making music, we don't have the people, or their leaves, in our drawing rooms. The smells are not there. Are these (or any) CDs not somehow reminiscent of trophies, like stuffed stags' heads above the mantlepiece? Urgent ethnomusicology (fieldwork undertaken when culture rupture or change is imminent) makes every effort to quell doubts like that. The accompanying booklets for each of these discs do the best possible within the constraints of the physical, packaged form of the CD to provide the all-important contexts.

For printed texts, the thirty-centimeter LP was rather large, while CD booklets, miniature at twelve centimeters square, have to squeeze four hundred words on a page to fit inside the plastic boxes designed for mass-market popular music needs, which hardly ever include learned essays, not to mention diagrams, maps, and photographs.

In the first of the items being dealt with here, *Musik aus dem Bergland West-Neuguineas: Irian Jaya* [Music from the mountainous region of Westem New Guinea, Irian Jaya] (Museum Collection Berlin, 1993), the booklet is 180 pages thick and demonstrates the problems of making this bastard format reader-friendly It is a brave attempt; one only wishes Berlin had taken more care over idioms in the English translation.

Let Artur Simon, who compiled the book and made the recordings, set the tone. He led a museum-based research expedition to the so-called Irian Jaya in 1975-1976. Did he consult missionary pilots first about which were the still pristine valleys? One can understand a scientist's desire to visit "virgin" populations, in a spirit of urgent ethnology. He had fantastic luck; his contacted people did not. He recounts this with eloquent concern:

> *Dite lelalamak*--they sing songs--, *mote selamak*--they dance the *mot* dance, they, the *Eipo* from the central mountainous region of Western New Guinea. When we recorded their songs in the middle of the 70s, we could not know that this was taking place virtually a few moments before the end of a traditional culture of New Guinea or, in a larger sense, Oceania. What we discovered was a society as good as undisturbed by outside influences, an extremely sensitively structured, traditional society and culture with simple technology and a simple economy In contrast to this simplicity stood *a highly developed language and intellectual culture,* the reconstruction and comprehension of which belong to the most difficult things that can confront a cultural researcher.
>
> On December 12, 1975, I entered the Eipomek Valley; on April 28, 1976, I left it without imagining that on June 26, Munggona, the chief village of the valley, and also my place of residence, would be completely destroyed by a devastating earthquake registering 7.6 on the Richter scale. A great mudslide had buried the houses and huts of the village under it--including mine, which had stood on the edge of the village. On October 29 there followed yet another massive earthquake. This also meant physically a disruption of serious consequence to the Eipo Society. Their garden fields suffered widespread destruction. From outside, not least of all through our project, food aid was organized and flown in by the Indonesian mil-

> itary. Further research permission was, however, refused by the Indonesian authorities. Soon thereupon American fundamentalists began with their missionary work. The very self-assured society of the Eipo fell under this external influence. "At Christmas 1980, the Eipo burned their holy relics under the influence of the Unevangelized Fields Mission and in 1983 there followed the first baptisms" (Heeschen 1990:9). The time of our recordings, here published as historical documents, was before these events. These recordings represent a musical culture that, as such, no longer exists. As irretrievable evidence, they justify the unusual amount of documentation in hand. (Booklet accompanying *Musik aus dem Bergland West-Neuguineas,* pp. 129-130; italics added)

All the same, some Melanesian groups since culture-contact have shown a reassuring record of resilience and adaptability, and even if the artworks embodying the past have now frequently gone with that past, what any optimist for cultural integrity can point out is that recent art expressions tend to support a variant of the Sapir-Whorf hypothesis: that is, that the nature of a language presages its cultural expressions, for local culture is never completely destroyed, it is only submerged, and exists awaiting recall. The trouble with this is that some vocabularies, when not in use and renewed through practice, also have a decay rate (cf. Crowe 1993:223). Will the Eipo ever be able to dance and sing the mot again, as they did when Simon was there? This seems depressingly unlikely.

Despite such gloom, we may take some wry satisfaction from the fact that we now know better, thanks to the Berlin expedition, the ethnomusicological picture of the vast mountain chain that runs across New Guinea. Taking the Berlin CDs in hand and wrestling with its doughty booklet, one can vicariously experience the extraordinary richness these isolated and intact societies *used* to be able to forge. The Eipo (in 1976) were not numerous, and they worked hard at gardening, playing, and fighting. The booklet says they "worshipped" the ancestors (I regard that as a cliché and prefer to think they "dialogued' with such spirits). There was no stocking of surplus garden or forest produce (except that pig breeding is a kind of accumulation). The songs are disarmingly frank (small children sing about sexual intercourse) and the metaphorical meanings are cleverly explained by one of the Berlin team. When Eipo lament, it is penetrating, absolutely terrible. When they dance, it is at turns funny (with a sophisticated irony) and magnificent. They know how to turn the voice to social and personal account, for it is a virtue of this six-CD set that you will hear both formal and informal performances (with all the usual, natural, local noises). There are almost no instruments--

a jew's-harp, imported hourglass drums--it is the body that matters. I sketch these few details to try to show how much vivacity it had.

One may progress, geographically and intellectually, through an evocation of the former Eipo society on CDs 1 to 4. We hear on CD 1 how beautiful and self-assured the singing was. On CD 5 we hear their neighbors and can understand differences and similarities.

It makes an instructive journey. On the CDs one encounters unique ways of singing together, enough to pose problems for all previous definitions of polyphony (even those of Arom). The scales or note rows used need thought about why they *seem* so comparatively "simple." The Eipo have redoubtable listening and memorizing capacities, shown by improvised canons. The Berlin notes don't mention rhythms (but some colleagues have been equally scotched by the Corsicans), although first listening reveals there are poles of rapid syllabification (around four hundred per minute) versus sustained (echoic) tones (for up to ten seconds) resplendent with the sustained control of beautiful timbres. In between, various cellular rhythmic bits may appear, to be used for a while, not seeming very stable, and so whither permutations? Have the mountains (very often over three thousand meters high) given an imprint to this music? I should like someone to explain why all this is like that. It is hard to believe it is arbitrary.

The notes Steven Feld supplies to his Kaluli rainforest-soundscape CD, *Voices of the Rainforest: Bosavi, Papua New Guinea* (Rykodisc, 1991), hint at some of the interrelationships that connect natural environment and human music making. This disc is a labor of love for an endangered people, who will surely have their rainforest severely damaged in the search for oil, minerals, and timber. (Part of its proceeds are for rainforest protection.)

Feld's annotations judiciously use translated Kaluli terms, such as "lift-up-over sounding," to indicate something like emotional transcendence as brought about by musical means. The native terms for times of day and night, and both morning and evening *crépuscules,* are highly evocative. This disc is not, at first sight, straight ethnomusicology There is little straight music on it: some work singing, a jew's-harp, some drumming, a portion of a song ceremony. The timbres of the speaking and singing voices sound cousined to those of the Eipo, and the environments would not be dissimilar, nor their remote Papuan ancestry. There is a world of difference in the fieldwork approaches of the Berlin team and that of Feld, who also worked with colleagues (see Feld 1982, 1991; Schulte-Tenckhoff 1988), but one presumes for much of the time solo. The great value of Feld's CD is that you can, as a listener, make the vicarious voyage where he has been, and I believe it would make an interesting weekend listening course to hear *Voices of the Rainforest,* take a break, and then start on the Berlin set.

Feld's soundscape inspires me to coin a neologism. We have monophony, heterophony (the Russians distinguishing at least four varieties), polyphony (with countless types), and by the evidence of Feld's "soundscapes," we should add *ecophony* or "sounding with the environment," which appears to be sometimes mimetic, but sometimes quasi-contrapuntal. Ecophony in this sense is reminiscent of Stravinsky's use of the word *symphony* to mean simply "sounding together" rather than a classical European orchestral form, as in his memorial piece for Claude Debussy, *Symphonies of Wind Instruments.*

Let me go back a bit on this review-voyage, this curving around and down the Melanesian crescent, to mention *The Coast of the Western Province, Papua New Guinea* (Jecklin Disco, 1993), a CD recorded 1963-1964 by Wolfgang Laade. Living on the equatorial, northern side of the Torres Strait, the peoples of the Trans-Fly region were first recorded by the Australian photographer Frank Hurley in 1921, on cylinders (which this reviewer wants to relocate). A photograph of Hurley shows him "recording a concert" in which the physical details of traditional village life look little affected by culture-contact. Laade worked forty years later on the coast of this extensive region, where considerable contact had taken place with the Torres Strait islanders--a longer-acculturated people owing to missionaries and the pearling industry. The booklet gives useful indications of the disruptions the area has since suffered, including efforts to stamp out head-hunting from the end of the nineteenth century. Laade's fieldwork represents a kind of salvage ethnomusicology, which is, and was then in the 1960s, just as important as the urgent variety. Laade is also alert to the probable transience of popular styles, and he has intelligently included some modem "island dances" of the so-called guitar or "string band" kinds, known in parts of Papua New Guinea as *lokal musik* (see Webb 1993).

Moving southeastwards, after Papua New Guinea we come to the Solomon Islands, now known to have been originally occupied by proto-Papuan peoples from ca. 30,000 B.P., of whom there are pockets surviving as far east as the Santa Cruz group. Most of the present populations, however, are descendants of the more recent Austronesian migrations. The Solomon Islands is a jewel in the diadem of Oceanic polyphony, with myriad facets and colors. One finds areas of rich instrumental variety and development, within the limits of the natural resources and neolithic technology, while in other areas the music may be almost exclusively vocal. This is shown in the CDs recorded by Hugo Zemp, *Polyphonies des Îles Salomon (Guadalcanal et Savo)* [Polyphonies of the Solomon Islands, Guadalcanal and Savo] (Le Chant du Monde, 1990) and *Îles Salomon: Ensembles de flûtes de pan 'Aré'aré* [Solomon Islands: 'Are'are panpipe ensembles] (Le Chant du

Monde, 1993). The music of Savo is almost entirely vocal, in a Papuan language, and perhaps because of proximities and diffusion, now seems to be musically structured in an Austronesian way

The political boundary between Papua New Guinea and the Solomon Islands obfuscates the existence of a suite of archipelagoes from the Admiralties down through Buka and Bougainville (all of which are parts of Papua New Guinea), and then on through what one sees on the maps as the Solomon Islands. It is perfectly valid to think of all these islands as one great, mainly Austronesian archipelago, or as the northern region of Island Melanesia (the southern region being Vanuatu and New Caledonia), as distinct from quasi-continental New Guinea. (As for Fiji, many reference works say it is "physically" Melanesian but culturally Polynesian, so it does not fit into this review; yet Fiji was indeed a traditional culture pivot, see below.) In this region the matter of island-to-island proximities is and was important for cultural diffusion, yet this is complicated by the presence on these high islands of two types of peoples: those of the "salt water" (coastal) and "man-bush" (interior). The well-kown *kula* trading-ring (as in Malinowski's classic *Argonauts of the Western Pacific*) possibly has echoes in the phenomenon of "musical tours" mentioned in the Zemp-recorded CDs.

Despite the opportunities for music diffusion available to salt-water peoples, all of whom had large ocean-going canoes at some point in their (pre)histories, the particularity of each region's or island's musical styles (or systems) seems to have its integrity. But we know little about cross-influence, about borrowings, about musical change and retention in the past, which resist reconstruction--except perhaps via song texts, using techniques such as lexicostatistics (but complicated by the use of special song-languages and numerous other factors), when there *are* song texts. Guadalcanal women's songs on the Guadalcanal/Savo CD (tracks 8-14) have few words, mostly vowel vocalizations; Zemp suggests this may be in imitation of panpipe tones. In general, Oceanic songs are text-heavy--that is, little scraps of tunes are used over and over to sing a rich, long, constantly evolving text--but here is an exception, and also one can remark the comparative lack of singing among the 'Are'are (cf. Zemp's *Musique 'Aré'aré*, a 150-minute film that catalogues the twenty varieties of local classifications of music, presenting examples of the repertoire in each category, reviewed in Crowe 1987).

Laboratory measurements are often more readily made, and then interpreted, of instrumental music than vocal music. At the Musée de l'Homme in Paris, Zemp (with the collaboration of Jean Schwarz) made careful measurements of the scales employed by panpipe ensembles of Guadalcanal and Malaita. Perhaps the most unusual result was the determination that the

‘Are‘are consistently employ an equiheptatonic scale in much of their panpipe music. How did these people hear such a scale, or how did they find a way to obtain it regularly? Is this a chicken-or-egg question, in that by following divisions of body measurements (based on the cubit in this case) the seven equal-step scale was the inevitable result? When Zemp arrived on Malaita, he found the last man who still knew how to do the traditional “sizing” procedures, the late ‘Irisipau. All other panpipe makers simply copied the extant models, but apparently faithfully, else interchanges between ensembles would have had difficulties over tuning each to the other, or even within the one ensemble, if the manufacturing had not been standardized somehow. With Zemp’s meticulous work, the traditional knowledge is restored and made available to everybody.

The CDs recorded by Zemp are a joy to listen to for the intrinsic interest of the musical items and the excellence of the recordings. The booklets are models of clarity and detail, beautifully illustrated by a man with a true eye (in speaking of Zemp as photographer and also, elsewhere, as his own film cameraman) and by intelligent diagrams. They also contain valuable (indeed, essential) bibliographic and audiovisual references for an amateur to pursue the subjects.

A reader of these notes brought up in the Western tradition of equal-tempered scales, or even those who are used to “perfect” (Pythagorean) systems, might ask if the tunings found in the Solomons would sound weird. Not a bit of it. I have had the chance to play Zemp’s recordings to many different audiences, and the music wins everyone’s hearts at once. At a music conservatory, string players (so aware of intonation problems, and possibilities) accepted the “strange” scales as if they were completely natural. I think this says more about the basic artificiality of the typical Western modes, as a canon, than anything else, for Westerners surely sing and play far more “in the cracks” than they are usually aware of.

The pieces tend to be quite short and have picturesque titles (“The Groaning of Pora‘ahu,” for example, or ‘What a Mess, Boys!“), which, however, do not seem to Zemp to be onomatopoeic. The capacity for polyphonic musical “thinking” is brought to a high art, implying that a constellation of choices in the aural world have been made in the linear and vertical senses of pitch (aural space), not to mention the organization of the progression of time. The mental acts involved are stupefying by their complexity (including their social conditioning), in the way they have made magical musical webs of the most intricate interlocking aural relationships conceivable, in the context of the natural environment and available technologies. That is to say, this music evokes the infinite potential extensibility of human creativity, made finite only by particular local circumstances.

By contrast with the Solomons, Vanuatu appears to have little polyphony today, although much is known to have been lost (Crowe 1981). Singing in canon reappears in New Caledonia, and Fijians sing in parts, so if one persists in thinking of polyphony as a stage of cultural evolution, all the evidence here is against it. Polyphony does not have to wait for a certain cultural "development"; it appears and disappears along the routes of the Austronesian explorers, whose trajectories and voyaging calendars are now quite well known, at least in sufficiently clear outline (Irwin 1992). Neither does polyphony require diffusion. It can be (re)invented whenever a group simply decides to exploit certain ideas of tonal simultaneity, an idea that might come from observing birds in chorus or hearing humans chatter together from a distance, let us say, as much as through diffusion.

Current ethnomusicological definitions of polyphony smack slightly, to me, of Eurocentrism. Arom (1985, 1991) points out the need for rhythmic idiosyncrasy of each of the parts in order to distinguish polyphony from, say, chordal singing (as in Christian hymns, which he sees as polyphonic in only a rudimentary sense): for as Bach composed polyphonically, so sing the Aka Pygmies of Central Africa and, it is evident above, so do many groups in the Solomons. It seems to me that exponents of polyphony need also consider coordination of *events* as much as results or artifacts, having isolatable, mutually interacting zones of definite pitch. It is a trifle bizarre that polyrhythmic music, as on drums, is set aside in another category because the degree of manipulation of pitches is considered, again, only rudimentary. To the extent in which polyphonists concentrate on tonal results they are avoiding basic implications of coordinated human acts, those that produce aural results not fitting neatly into a predetermined polyphonic tonal-object category. I always thought a strength of ethnomusicology was to go back to the fundamentals of human choice that lead to "repeatable" aural artifacts.

In *Vanuatu: Custom Music/Singsing-danis kastom* (Colln. AIMP-XXXIV, 1994), one may hear on track 19 the deliberate use of a countersong. It is a song sung more or less at the same time to "cover" another song with a text on taboo matters of concern only to initiates of the Qat Baruqu (rites of the culture hero/trickster Qat[u] around Maewo island, as elaborated in the style of Baruqu village). The combination here is at least reminiscent of a sort of quodlibet; and in Bach's use of that form (so named *after* the event, let us note) in the *Goldberg Variations,* everyone says that it is polyphonic. Will a musicologist object that the two Qat Baruqu simultaneously performed songs were not composed with the *intention* of being sounded together? How can that be known? Is the conclusion taken (Eurocentrically, I should hazard) that it is an aleatoric combination? So what? Why would

that be a disqualification? What about Stockhausen's *Zeitmasse?* Although these are not questions that can be quickly answered here, they instance some fundamental problems in the conduct of ethnomusicological analysis, especially regarding polyphony, for which Melanesia inspires reconsideration. Melanesia is grossly undervalued as a laboratory.

Coordination of events, gestural and aural, are indeed shown on the Vanuatu CD by extracts from two major rituals: the pig-killing ceremonies of Ambae, and the Qat Baruqu of Maewo. A major musical interest lies in the slit-drum ensemble music, here brought to a brilliant point of elaboration and presaging the deployment of such drums in Polynesia (famous in the Cook and Society Islands). The CD also has a range of individual solo singing styles that seems much more varied than elsewhere in the repertoire we have available. The song on track 17 has a text indicating an intention to set sail for "Mamalu," which one presumes is Fiji, but even if it were not, this is a rare and intriguing oral-tradition relic of the sort of voyages that took place three thousand years ago.

New Caledonia turns out to have remained musically richer than we thought was the case, after its dreadful colonial history, reappearing in public with the Melanesia 2000 Festival of 1975. Discs published in the early 1960s presented characteristic ways of singing "Christian choruses," but customary music was hidden--or presumed lost. The Kanaks may have felt there was no appreciation of their music to warrant performance before the overbearing *colons* and it were better kept private. A Kanak group came to the first South Pacific Festival of Arts at Suva in 1974 and performed various *pilou,* remarkable for the use of hissing, whistling, scraping sounds, but wordless and not evidently intoned as "singing."

Now, with *Chants Kanaks: Cérémonies et berceuses* [Kanak songs: Feasts and lullabies] (Le Chant du Monde, 1990), we can hear that this is and was not all. Beaudet and Weiri present a limited number of items, and one hopes there will be more to come. The most remarkable are the trailing canons of a character reminiscent of Tibet, where the lead singer is paid homage by the echoing or following singer, endeavoring to keep pace but carefully a step behind, presumably out of respect. There is also an astonishing intoned, rapid genealogical discourse on track 1 that tests the boundaries of speech and song, not unlike the *tau* sequences in a formal Maori speech. One wonders if there is some kind of "latitude effect" at work, because from Erromanga in Vanuatu one has heard songs every bit like the *oriori* ("lullabies" to teach the children of chiefs) of the Maori, and here in New Caledonia, the music suggests it works as a functional underpinning for the consolidation of hereditary hierarchies, for chiefly systems are often absent in the north of Island Melanesia. It seems well established that New Caledonia was a southwestern terminus in Austronesian expansion, not proceeding to

New Zealand (Norfolk Island, intermediate, remaining a puzzle). The route from Erromanga to New Zealand took Austronesians two thousand years or so to traverse, via Eastern Polynesia and a migratory "return" southwestward. Wherefore these musical aspects so indicative one of the other, as if there had been diffusion, when the separations were of such order? However, Jean Guiart has recently discussed some curious elements that suggest prehistoric contact with the Maori may have occurred (1993), not yet supported by archaeology.

In the opening paragraph I mentioned "proximities" as important to the cultural ecologies of the grand archipelago of Island Melanesia. Writing a review like this is in itself a kind of migratory voyage. For an investment of some $200 a reader can buy all the baker's dozen of discs we have discussed. The hardest thing to do in music reviewing is to give the reader an idea of what the stuff actually sounds like. I have deliberately tried to minimize technical jargon in the hope that enthusiasm on *my* part will inspire readers to immerse themselves in the truly extraordinary world of Melanesian musics.

DISCOGRAPHY

Chants Kanaks: Cérémonies et berceuses [Kanak songs: Feasts and lullabies]

1990 Recordings 1984-1987 by Jean-Michel Beaudet and Lionel Weiri, text by Jean-Michel Beaudet and Kaloonbat Tein, production by Agence de Développement de la Culture Kanak (Noumea). Colln. CNRS--Musée de l'Homme. 1 CD, Le Chant du Monde (Paris) LDX 274 909. (Illustrated 52 pp. booklet in French and English. Duration, 45 min 34 s)

The Coast of the Western Province, Papua New Guinea

1993 Recordings 1963-1964, text, and photos by Wolfgang Laade. Music of Man Archive. 1 CD, Jecklin Disco JD 655-2 (Jecklin Musikhaus, CH-8024 Zürich). (16 pp. booklet, notes in English. Duration, 62 min 37 s)

Îles Salomon: Ensembles de flûtes de pan 'Aré'aré [Solomon Islands: 'Are'are panpipe ensembles]

1993 Recordings 1974 and 1977, text, and illustrations by Hugo Zemp. Colln. CNRS --Musée de l'Homme. 2 CDs, Le Chant du Monde (Paris) LDX 274961-62. (92 pp. booklet in French and English. Total duration, 2 hr 10 min. New stereo recordings of items on earlier LPs, with additions)

Musik aus dem Bergland West-Neuguineas: Irian Jaya [Music from the mountainous region of Western New Guinea: Irian Jaya]

1993 Recordings ca. 1975, texts, and photos compiled and edited by Artur Simon. Vols. 1 and 2, 6 CDs, Museum Collection Berlin CD-20 (Abteilung Musikethnologie, Museum für Völkerkunde, Arnimallee 27, D-14195 Berlin). (180 pp. booklet, 22 music transcriptions, 22 photos, notes in German and English. Total duration [6 CDs], 6 hr 54 min 33 s)

Polyphonies des Îles Salomon (Guadalcanal et Savo) [Polyphonies of the Solomon Islands, Guadalcanal and Savo]

1990 Recordings 1974, text, and photos by Hugo Zemp. Colln. CNRS--Musée de l'Homme. 1 CD, Le Chant du Monde (Paris) LDX 274 663. (32 pp. booklet in French and English. Duration, 42 min 51 s. Republication of an earlier LP)

Vanuatu: Custom Music/Singsing-danis kastom [Nouvelles-Hébrides: Musiques coutumières]

1994 Recordings 1970s by Peter Crowe and colleagues, New Hebrides Oral Traditions Project, Northern District. Text and photos by Peter Crowe. 1 CD, VDE 796, Cohn. AIMP-XXXIV (Ateliers d'ethnomusicologie, Case Postale 318, CH-1211, Genève 25). (32 pp. notes in French and English. Duration, 62 min 56 s)

Voices of the Rainforest: Bosavi, Papua New Guinea

1991 Recordings ca. 1990, text, and photos by Steven Feld. 1 CD, Rykodisc RCD 10173 (Pickering Wharf Bldg. C, Salem, MA 01970). (30 pp. booklet, photos, notes in English. Duration of 11 linked tracks, 57 min 8 s)

REFERENCES

Arom, Simha

1985 *Polyphonies et polyrhythmies instrumentales d'Afrique centrale.* 2 vols. Paris: SELAF.

1991 *African Polyphony and Polyrhythm.* Paris: Maison des Sciences de l'Homme; Cambridge: Cambridge University Press. (English translation of Arom 1985)

Bonnemaison, Joël

1986 *Les fondements d'une identité: Territoire, histoire et société dans l'archipel de Vanuatu (Mélanésie).* Livre 1: *L'Arbre et la pirogue.* Paris: ORSTOM.

Crowe, Peter

1981 Polyphony in Vanuatu. *Ethnomusicology* 25 (3): 419-432.

1987 Reviews of *Musique 'Aré'aré* and *Tailler le bambou,* films by Hugo Zemp. *Ethnomusicology* 31 (2): 326-329.

1993 Reviews of *Smoan Variations: Essays on the Nature of Traditional Oral Arts,* by Jacob Wainwright Love; and *The Song to the Flying Fox,* by Jürg Wassmann. *Cahiers de Musiques Traditionnelles* 6:218-226.

Feld, Steven

1982 *Sound and Sentiment: Birds, Weeping, Poetics, and Song in Kaluli Expression.* Philadelphia: University of Pennsylvania Press.

1991 Lift-up-over Sounding. *ICTM Yearbook* 23 (with C60 cassette).

Golson, Jack

1977 No Room at the Top: Agricultural Intensification in the New Guinea Highlands. In *Sunda and Sahul, Prehistoric Studies in Southeast Asia, Melanesia, and Australia,* edited by J. Allen, J. Golson, and R. Jones, 601-638. London: Academic Press.

Guiart, Jean
1993 A propos de Simmons 1976. *Journal de la Société Océanistes* 97 (2): 239-246.

Irwin, Geoffrey
1992 *The Prehistoric Exploration and Colonisation of the Pacific.* Cambridge and Oakleigh, Austral.: Cambridge University Press.

Schulte-Tenckhoff, Isabelle
1988 Review of Feld 1982. *Cahiers de Musiques Traditionnelles* 1:214-221.

Webb, Michael
1993 *Lokal Musik: Lingua Franca Song and Identity in Papua New Guinea.* [Port-Moresby]: Cultural Studies Centre, National Research Institute.

David Damas, *Bountiful Island: A Study of Land Tenure on a Micronesian Atoll.* Waterloo, Ont.: Wilfrid Laurier University Press, 1994. Pp. xvi, 272, illustrated, bibliography, index. $55 cloth.

Reviewed by Lin Poyer, University of Cincinnati

David Damas, known for his work in cultural ecology in the Arctic, has moved south. In writing *Bountiful Island,* he contributes to the ethnography of the Eastern Caroline Islands and renews a conversation about land tenure in the Pacific that has lain dormant for awhile.

The book begins with a personal introduction to his experience on Pingelap and a statement of objectives. In brief, Damas searches for a link between changes in the land-tenure system and an expanding population. The body of the book begins with a summary of the history and culture of Pingelap, with particular attention to demographically important events such as typhoons and a basic review of habitat and economy. He evaluates Pingelap as an atoll environment with relatively rich land resources that at times may have sustained as many as fifteen hundred persons.

The book's central chapters investigate the atoll's land-tenure system. He argues that land plots are individually owned, marked by precise boundaries, and show a patrilineal bias in inheritance. Damas presents statistical information (with some admitted sampling problems) and a series of helpful case studies. Chapter 6 introduces an interesting discussion of the *derak* ceremony, "held in order to validate passing of property to one's heirs" (p. 129). Issues of adoption, women's control of property, and usufruct are also addressed.

Damas devotes a chapter to comparing, and examining the links between, land tenure on the atoll and in two sizable Pingelapese settlements on the nearby high island of Pohnpei. The concept of "stewardship," by

which migrant owners convey use rights to their atoll land, has had a significant impact on land use and tenure on the home atoll. Damas's historical and ethnographic discussion of this issue is useful. A penultimate chapter explores the history and impact of external relations, including emigration, German and Japanese land-tenure laws, the copra trade, and food imports.

In his final chapter, Damas puts the Pingelap case in comparative context, first reviewing historical changes in the atoll's land-tenure system. He then compares it to the system in nearby Mwaekil (Mokil) Atoll and to several other Micronesian and Polynesian examples. He concludes with tentative support from the Pingelap case for George Collier's (1975) hypothesis: "first, the strengthening of unilineal control of land under conditions of population pressures, accompanied by moves toward individual ownership" with some evidence of "reversion to larger landholding units, at least on the usufruct level" as pressures on land increase (p. 229).

The book's greatest value is that it increases available information about Pingelap (previous recent work was by Jane Hurd and the human biology-oriented publications of N. E. Morton et al.). This alone makes the book a must for students of Micronesia. But those familiar with Micronesian ethnography will find challenges and problems in Damas's presentation. One question is his interpretation of ownership and usufruct (especially since to argue for individual ownership is bound to be controversial). His presentation of women's rights in land, which he analyzes as dowry, lacks clarity. Power relations and political activity are given relatively little attention: although we learn about the transfer of traditional titles, we do not learn what rights and responsibilities titleholders possessed. Damas gives solid evidence for inequities in landholdings and clearly realizes the importance of the topic, but he does not systematically explore the potential impact of inequities on social and land-tenure systems.

In addition to the virtue of making available more information about Pingelap, the description of the *derak* ceremony and the study of migrant communities are welcome contributions. Damas's historical approach to the changing relations between Pingelapese on Pohnpei and on the home atoll--in the context of German, Japanese, and American administrations, and especially in terms of land rights--is valuable and suggests ideas for investigation in other migrant-community situations.

Readers interested in theories of the evolution of land-tenure systems may find food for thought here, but they will also find that the unique qualities of atoll environments and the particular histories of each atoll make generalization difficult. Damas admits this conclusion, while making a valiant effort to work the data of Pingelap into a broader contribution to theory. Perhaps as someone who has come to work in the Pacific as a second area of

expertise, he is more aware than relatively parochial Pacific scholars of the potential of this region to contribute to wider theoretical issues in anthropology. In that case, Oceanists' disagreements with his analysis should serve as a challenge for us to make broader arguments, to a broader audience.

REFERENCE

Collier, George A.
1975 *Fields of the Tzotzil: The Ecological Bases of Tradition in Highland Chiapas.* Austin: University of Texas Press.

Jukka Siikala, *'Akatokamanava: Myth, History, and Society in the Southern Cook Islands.* Auckland: The Polynesian Society in association with the Finnish Anthropological Society, 1991. Pp. ii, 153, figures, bibliography, index.

Reviewed by Rebecca A. Stephenson, University of Guam

Jukka Siikala makes a fine contribution to anthropological studies of Polynesia; and particularly of the Cook Islands, with this publication. Cook Islanders and those of us who study the Cook Islands now have a new presentation of material concerning the articulation of Cook Islands "myth, history, and society" to consider with the appearance of this volume.

The title *'Akatokamanava* refers to the original name of the island of Mauke; the subtitle calls attention to the book's highlighting of the Southern Cook Islands. The book's content concerns the island of Mangaia to some extent ("The Cosmogony of Mangaia" in chapter 2); Ngaputoru at some length, that is, "the threesome" of Atiu, Mauke, and Mitiaro islands (the whole of chapter 4); and most especially the island of Mauke.

Siikala's residence in the Cook Islands for research purposes has been rather lengthy, eight months in 1984-1985, one month in 1986, and eight months again in 1987-1988 (in the Foreword). His data are rich and detailed (see also Siikala 1990). He has worked closely with knowledgeable Cook Islanders, especially the eminent Rangi Moeka'a with reference to Mauke. Siikala's command of his material is noteworthy, and it is pleasing that the mythological texts appear in two languages, Cook Islands Maori and English.

Yet, the nearly unavoidable insider-outsider differential confounds Siikala's work, as well as the subtleties of exchange that occur when shifting between the Maori-language and English-language texts. For example, what

was the intrinsic character of Mariri-tutu-a-manu (pp. 85-86)? Should we say that he was able to fly "like a bird"? Or, because he could fly, did he then "become" a bird? Do we highlight Mariri-tutu-a-manu's remarkable ability to enhance his human creativity by taking up a new transportation mode, that of flight? Or, did Mariri give up something of his humanness because he took on *manu* (bird; sometimes glossed as creature) characteristics? The motion aspect may be that which is most significant for our consideration, that is, our knowledge that the Polynesian ancestors readily moved about from island to island. Isn't it so that some canoes "fly" through the water? A Cook Islands woman was known as Vaine Rere (Flying Woman), I was told in 1973, because "she flew all over the place; she never stayed in one place very long." "Taku Manu E," a haunting song of Aitutaki with the theme of flight, does not concern a bird at all, but rather a beloved kite. Siikala draws on other Polynesian materials, for example, works by Sahlins, in this section. But, let us consider other possible shades of meaning in the Mariri-as-bird discourse.

Status and rank do not fit into a single mold in precontact Polynesia. With reference to titleholders in the Southern Cook Islands, status and rank were no doubt much more complex than we can ever discern or likewise hope to reconstruct. Siikala does not mention the *mataiapo tutara* (big *mataiapo*), whose status was intermediate between that of the *ariki* (chiefs, those highest in rank) and the regular *mataiapo* (chiefs of a major lineage or descent group; cf. Savage 1980 for a further description of Cook Islands titles in the context of local culture). In the case of Atiu, the *mataiapo tutara* titles were apparently created after the *mataiapo* and *ariki* titles. Duff states:

> At a period we might date from a lineage succession of twelve chiefs prior to 1823 [the date of the arrival of missionary John Williams at Atiu], the immigrant warrior Mokoero displaced the existing hierarchy and introduced the rule of Mokoero *(au o mokoero).* The victorious party then created seven *mataiapo* (chief) titles, with a corresponding division of the island into seven districts, each controlled by one *mataiapo.* About 1760, following an unsuccessful attempt by the *taagata* [sic] *enua* descendants to regain control, the victory elevated the then senior *mataiapo* to the *ariki* title of Ngamaru. (1971:45)

In 1973 at Atiu I was told that, after the Ngamaru title, two additional *ariki* titles were created, those of Rongomatane and Parua (some say Parua Nui). The remaining four *mataiapo* of the original seven who did not succeed to *ariki* titles became *mataiapo tutara.* The names of the *mataiapo tutara* titles at Atiu were given to me by various Atiuan *tumu korero* (per-

sons who are knowledgeable about matters of tradition) as Maokopi in Teenui district and Paerangi, Tinokura, and Aumai in Areora (Stephenson 1981:114). Paiere Mokoroa of Atiu (1984:21), however, states that the four titleholders not raised to *ariki* ranking assumed the dual role of *ta'unga* (ritual specialist) and *mataiapo tutara* and names them as Maokopi, Paerangi, Tinokura, and Terea.

Tongia, working with the Earthwatch Cook Islands Project at Mitiaro in 1989, was told that the present stratified and hereditary system of leadership there was introduced from Atiu, which Siikala also indicates. The Atiuans had "succeeded in extending their foothold on Mitiaro via two successful military campaigns. Prior to the Atiu colonization period, there was no ascribed *ariki* or high chief system. . . . Prestige was gained through prowess in war" (Tongia n.d.:2). But then, writes Tongia (ibid.), a certain Makara, a warrior-chief, gained sufficient *mana* such that his became a *mataiapo tutara* title, subsumed under no *ariki,* and "he was an independent *mataiapo* and chief unto himself." Thus, again the place of the *mataiapo tutara* is called to our attention. Leadership dynamics appear to be somewhat more complex in the Southern Cooks than Siikala has mentioned.

Siikala considers in some detail the putative identities of the first human inhabitants of Ngaputoru (pp. 84-104). The Earthwatch Cook Islands Project of 1985-1989 in the Southern Cook Islands addressed itself to matters of *marae, mana,* and Cook Islands Maori origins, with archaeology as the principal methodology of data pursuit (Kurashina 1991, n.d.; Kurashina and Stephenson 1985, 1994; Sinoto 1991, n.d.). Concerning Mitiaro, the following account was collected by Bennett (in English) from several Mitiaroan *tumu korero* during the project's 1988 field season:

> The first canoe coming to Mitiaro was called Kutikutiraumatangi. It is not known where the canoe came from, *but it might have come from Tahiti, because most canoes came from there in the early days.* There were from 50-100 people aboard each canoe. . . . Then a man named Ru came to Mitiaro and began to look for water. The two daughters of the Taratau Ariki were bathing in a cave, Tekopu-o-Karo. These were the most beautiful women Ru had ever seen. Although they were nuns [virgins?], the eldest, Teremake Ariki, fell in love with Ru and married him. *Ru and Teremake went away together to Atiu.* . . . (After Ru was lost at sea) Teremake fell in love with her second husband, Makona, which heralded the start of the eight tribes of Mitiaro. *The eight tribes never fought with each other, only with Atiu.* The tribes are known as Nga-kopu-e-varu, the eight-born. (1991:73; emphases added)

What emerges from the above account is a point of view different from Siikala's discussion. Overwater (but not airborne) origins of the Mitiaro people from the Society Islands are suggested in Bennett's account, which meshes with current archaeological theories concerning the settlement of the Southern Cooks. The shift of residence of the wedded pair, Ru and Teremake, from Mitiaro to Atiu was apparently a natural, uneventful one, speaking perhaps to early harmonious dynamics in Ngaputoru. Warlike intraisland relations apparently occurred later in time.

Siikala states that the chiefly titles found in Ngaputoru are remarkably homologous (p. 91). Paiere Mokoroa says that the *ariki* of Atiu appointed representatives to Mauke and Mitiaro (1984:32), usually younger men of chiefly status, who were given *mataiapo* or *rangatira* titles *(rangatira* being a tribal title subsumed under an *ariki* or *mataiapo).* Those titles later became *ariki* titles in their own right on Mauke and Mitiaro. Tongia learned that no one seems to agree as to the names of the *ariki* offices of Mitiaro: "The Ngati Te Akatauira tradition states that the name of their *ariki* office is Teikamata. Teikamata is, of course, the name of the first Ngati Te Akatauira *ariki* installed by Atiu prior to 1823" (n.d.:7). Let us leave it to the Mitiaroans to sort this one out!

Siikala does not elaborate on the ranking among the *ariki* titles in Ngaputoru. It has been my understanding that the Ngamaru Ariki title is the highest ranked of the three *ariki* titles, followed by the Rongomatane Ariki title and then that of Parua Ariki. If that is so, why was Rongomatane so greatly feared at Mauke and Mitiaro at the time of John Williams's arrival? Where was Ngamaru Ariki then? Ngamaru Ariki of Atiu was the individual most influential in building the first church on Atiu (Tangatapoto 1984: 144). Did that event cement or earmark Ngamaru as the highest-ranking Atiuan *ariki?*

It may be useful to question whether there could have been a shifting of predominance among the three Atiu *ariki,* regardless of the ranking of the titles, depending on the individual titleholders at any given time, the nature of their strengths, charisma, leadership capabilities and so forth, and other extenuating circumstances, such as the success of the *karakia* (bestowal chant) at the time of the Investiture (cf. Mokoroa 1984). Gilson has raised this point when considering the impact of missionization in the Southern Cooks: "Each contact situation must be examined closely for a number of different things: social structure and ideology (which varied from island to island within the same cultural area), the personalities involved, and the incidental events occurring before, during and after the landing of the missionaries" (1980:23). Crocombe also has noted a lack of parity between

power positions of the Atiuan titleholders (1967:97, 99). Around the turn of the century, Ngamaru Ariki of Atiu was a man of considerable stature and influence; moreover, he was married to Makea Nui Ariki of Rarotonga. When I first went to Atiu in 1973, Parua Ariki was by far the most prominent of the three *ariki* in the Atiuan community. The Ngamaru titleholder had recently died; that title was not succeeded to until June 1974. The Rongomatane titleholder was not residing on Atiu then. Parua Mataio Ariki was an older man of considerable personal charm, he was well spoken, and he was quite popular among the Atiuan people. His dominance among the Atiuan *ariki* persisted until he passed away in the mid-1980s. My point is that some shifting of the power base might have occurred among the *ariki* of Mauke and Mitiaro as well, perhaps with reference to the particular Atiuan *ariki* in the forefront. Or, it may be that the time when Mauke and Mitiaro had the most to fear from Atiu was during the reign of a single Rongomatane titleholder, namely Ngaka'ara Rongomatane Ariki, in the years just prior to missionization in the Southern Cooks.

Siikala has taken on a difficult task in this book. He seeks to "get it right" in terms of his presentation of the building blocks of Southern Cook Islanders' identity and consciousness. But other accounts in print concerning ethnohistory in Ngaputoru merit consideration (e.g., Kloosterman 1976; Kura et al. 1984). Each generation of Cook Islanders may prefer to tell the tales of their island in a slightly different way. Likewise, there are considerable intergenerational variations within the discourses. Nonetheless, Siikala's book is of considerable value in the context of contemporary Polynesian studies. It offers a Western scholar's comprehensive view of a particular Polynesian recounting of history It also affords us the opportunity to consider yet again the matter of "tradition" in the context of a particular Oceanic sociocultural system.

'Akatokamanava is an important and timely contribution to Cook Islands studies. But an urgent need remains for Cook Islanders to continue to articulate with each other their construction of identity. Differences in textual materials--for example, which version of Mariri-tutu-a-manu is the generally preferred one?--can become points of cultural enrichment rather than contention. With the death of Tangata Simiona in 1992, another greatly valued *tumu korero* of Atiu is no longer available for consultation. I call upon Ina Teiotu, Paiere Mokoroa, Tatuava Tanga, and other Atiuans, in spite of their demanding work schedules as well as kinship and community obligations, to press forward in their chosen task of collecting and recording the Atiuan narratives. Jukka Siikala's book may offer considerable inspiration for them and for other Cook Islands people.

REFERENCES

Bennett, Pam, compiler
1991 The Ethnohistory of Mitiaro. In *Collected Papers of the Earthwatch Cook Islands Project, 1985-1988,* edited by Rebecca A. Stephenson and Hiro Kurashina, 72-76. Mangilao: Department of Anthropology, University of Guam.

Crocombe, Ron
1967 From Ascendancy to Dependency: The Politics of Atiu. In *Journal of Pacific History* 2:97-111.

Duff, Roger
1971 Notes on the Prehistory of Atiu, Cook Islands. In *Cook's Bicentenary Expedition in the Southwest Pacific, 1969,* edited by R. Fraser, 41-48. Dunedin, N.Z.: Otago Daily Times, Ltd.

Gilson, Richard
1980 *The Cook Islands, 1820-1950.* Wellington: Victoria University Press.

Kloosterman, Alphons M. J.
1976 *Discoverers of the Cook Islands and the Names They Gave.* Second edition. Rarotonga: Cook Islands Library and Museum Bulletin, no. 1.

Kura, Pa, et al.
1984 *Atiu Nui Maruarua: E Au Tua Ta'ito.* Rarotonga: Institute of Pacific Studies, South Pacific Creative Arts Society, Cook Islands Ministry of Education, and Atiu Island Trust.

Kurashina, Hiro
1991 An Examination of Cook Islands *Marae:* Data from the Field, 1985-1987. In *Collected Papers of the Earthwatch Cook Islands Project, 1985-1988,* edited by Rebecca A. Stephenson and Hiro Kurashina, 63-67. Mangilao: Department of Anthropology, University of Guam.
n.d. Studying Cook Islands *Marae.* In *Encountering the Cook Islands: The Earthwatch Cook Islands Project, 1985-1989,* edited by Hiro Kurashina and Rebecca A. Stephenson. Mangilao: Department of Anthropology, University of Guam, in preparation.

Kurashina, Hiro, and Rebecca A. Stephenson
1985 *Sacred Stones of Rarotonga: Mapping and Stabilizing Ancient Polynesian Monuments in the Cook Islands.* Earthwatch Report prepared for the Government of the Cook Islands, Rarotonga. Mangilao: Department of Anthropology, University of Guam.
1994 Archaeology, Ethnohistory, and *Marae* Restoration in the Southern Cook Islands. Paper presented at the Indo-Pacific Prehistory Association's 15th Congress, Chiang Mai, Thailand, January 5-12.

Mokoroa, Paiere
1984 *Arataki:* Leadership. In *Atiu: An Island Community,* edited by Ngatupuna Kautai et al., 20-33. Suva: Institute of Pacific Studies, University of the South Pacific.

Savage, Stephen
1980 *Dictionary of the Maori Language of Rarotonga.* Suva: Institute of Pacific Studies, University of the South Pacific, in association with the Ministry of Education, Government of the Cook Islands.

Siikala, Jukka
1990 Chiefs, Gender, and Hierarchy in Ngaputoru. In *Culture and History in the Pacific,* edited by J. Siikala, 107-124. Helsinki: Finnish Anthropological Society.

Sinoto, Yosi
1991 Cook Islands Report 1987. In *Collected Papers of the Earthwatch Cook Islands Project, 1985-1988,* edited by Rebecca A. Stephenson and Hiro Kurashina, 68-69. Mangilao: Department of Anthropology, University of Guam.
n.d. Preliminary Report on Field Work Conducted in the Southern Cook Islands in 1988. In *Encountering the Cook Islands: The Earthwatch Cook Islands Project, 1985-1989,* edited by Hiro Kurashina and Rebecca A. Stephenson, in preparation.

Stephenson, Rebecca A.
1981 Atiu Revisited: Environmental Perception in Anthropology. In *Persistence and Exchange,* edited by Roland W. Force and Brenda Bishop, 109-119. Honolulu: Pacific Science Association.

Tangatapoto, Vaine Rere
1984 *Pure:* Religion. In *Atiu: An Island Community,* edited by Ngatupuna Kautai et al., 131-146. Suva: Institute of Pacific Studies, University of the South Pacific.

Tongia, Makiuti
n.d. Mitiaro Report, 1989. In *Encountering the Cook Islands: The Earthwatch Cook Islands Project, 1985-1989,* edited by Hiro Kurashina and Rebecca A. Stephenson. Mangilao: Department of Anthropology, University of Guam, in preparation.

BOOKS NOTED

RECENT PACIFIC ISLANDS PUBLICATIONS: SELECTED ACQUISITIONS, MARCH-APRIL 1995

THIS LIST of significant new publications relating to the Pacific Islands was selected from new acquisitions lists received from Brigham Young University -Hawai'i, University of Hawai'i at Mānoa, Bernice P. Bishop Museum, University of Auckland, East-West Center, University of the South Pacific, National Library of Australia, and the Australian International Development Assistance Bureaus Centre for Pacific Development Training. Other libraries are invited to send contributions to the Books Noted Editor for future issues. Listings reflect the extent of information provided by each institution.

Apple, Russ. *Ala Kahakai.* Hawai'i National Park: Macappleville Press, 1994.

Bishop, Owen, and Audrey Bishop. *New Zealand Wild Flowers Handbook.* Auckland: Hodder & Stoughton, 1994.

Boer, Ben. *Solomon Islands: Review of Environmental Law.* Apia: South Pacific Regional Environment Programme, 1992.

Bonnemaison, Joël. *The Tree and the Canoe: History and Ethnology of Tanna.* Honolulu: U. Hawai'i Press, 1994.

Buck, Peter Henry, Sir. *Mangaia and the Mission.* Suva: Inst. of Pacific Studies, U. South Pacific, 1993.

Cambie, R. C. *Fijian Medicinal Plants.* Canberra: CSIRO Australia, 1994.

Ching, Linda. *'Ano Lani: The Hawaiian Monarchy Years, 1810-1893.* Honolulu: L. Ching, 1993.

Chung, Margaret. *Population and Sustainable Development in Pacific Islands Countries.* Honolulu: East-West Center, 1993.

Crocombe, Ron, and Esau Tuza, eds. *Independence, Dependence, Interdependence: The First 10 Years of Solomon Islands Independence.* Honiara: Inst. of Pacific Studies, U. South Pacific, Honiara Centre, 1992.

Cultural Identity and Ethnicity in the Pacific. Honolulu: U. Hawai'i Press, 1990.

Culture Change, Language Change: Case Studies from Melanesia. Canberra: Dept. of Linguistics, Australian National U., 1992.

Davis, Derrin. *Sustainable Development and Natural Resources in Pacific Island Countries.* Honolulu: East-West Center, 1993.

Douglas, Norman, and Diane Aoki. *Moving Images of the Pacific Islands: A Guide to Films and Videos.* Honolulu: Center for Pacific Islands Studies, U. Hawai'i, 1994.

Dutton, Tom, and Darrell T. Tryon, eds. *Language Contact and Change in the Austronesian World.* New York: Mouton de Gruyter, 1994.

Economic Insights. Papua New Guinea: The Role of Government in Economic Development. Canberra: Australian International Development Assistance Bureau, 1994.

Ell, Gordon. *New Zealand Ghost Towns and Glimpses of the Past.* 2d ed. Auckland: Bush Press, 1994.

Faith, Rangi. *Dangerous Landscapes: An Anthology of New Zealand Poetry.* Auckland: Longman Paul, 1994.

Fallon, John. *The Vanuatu Economy: Creating Conditions for Sustained and Broad Based Development.* Canberra: Australian International Development Assistance Bureau, 1994.

Fepulea'i, Justin Peter. *From Self Government to Independence: The Development of New Zealand's Policy towards Western Samoa during the United Nations Trusteeship Period, 1946-62.* Thesis, U. Auckland, 1994.

Finney, Ben. *Voyage of Rediscovery: A Cultural Odyssey through Polynesia.* Berkeley: U. California Press, 1994.

Gillett, Robert, et al. *Traditional Sailing Canoes in Lau = Na Camakau Mai na Yatu Lau.* Suva: Inst. of Pacific Studies, U. South Pacific, 1993.

Grant, Glen. *Obake: Ghost Stories in Hawaii.* Honolulu: Mutual Publishing, 1994.

Halkett, John. *The Native Forests of New Zealand.* Upper Hutt, N.Z.: GP Publications, 1991.

Harkness, Chris. *New Guinea, the Wahgi Impact: Life in the Highlands of the Territory of Papua New Guinea: The Wahgi, a Valley in the Clouds.* Coorparoo, Qld.: Robert Brown & Associates, 1994.

Howe, K. R., Robert C. Kiste, and Brij V. Lal, eds. *Tides of History: The Pacific Islands in the Twentieth Century.* Honolulu: U. Hawai'i Press, 1994.

Jacobs, Warren, and John Wilson. *New Zealand: Mountains to the Sea.* Lyttelton, N.Z.: Kowhai Publishing, 1994.

Johanson, Dean. *Wearing Ink: The Art of Tattoo in New Zealand.* Auckland: David Bateman, 1994.

Jonassen, Jon Michael. *The Cook Islands: The Development of an External Affairs Department in an Emerging Microstate.* Rarotonga: J. M. Jonassen, 1983.

Jones, Alison, et al. *Myth and Realities: Schooling in New Zealand.* 2d ed. Palmerston North, N.Z.: Dunmore Press, 1995.

Kalakaua, David. *The Legends and Myths of Hawaii: The Fables and Folk-Lore of a Strange People.* Honolulu: Mutual Publishing, 1990.

Kirch, Patrick Vinton. *The Wet and the Dry: Irrigation and Agricultural Intensification in Polynesia.* Chicago: U. Chicago Press, 1994.

Lamont, E. H. *Wild Life among the Pacific Islanders.* Suva: Inst. of Pacific Studies, U. South Pacific, 1994.

Landgraf, Anne Kapulani. *Na Wahi Pana o Ko'olau Poko = Legendary Places of Ko'olau Poko.* Honolulu: U. Hawai'i Press, 1994.

Liebenthal, Andres, et al. *Solar Energy: Lessons from the Pacific Island Experience.* Washington, D.C.: World Bank, 1994.

Lum, Jackson A. *Gold Mining: Exploration and Investment Opportunities in the Southwest Pacific: Papua New Guinea, Solomon Islands, and Fiji.* Honolulu: East-West Center, 1990.

Moir, Michelle. *Images of Maori Women = Mataahua Wahine.* Auckland: Tandem Press, 1994.

Moon, Geoff. *The Reed Field Guide to New Zealand Wildlife.* Auckland: Reed, 1994.

Moon, Paul. *The Origins of the Treaty of Waitangi.* Auckland: Birdwood Publishing, 1994.

Newnham, Raymond Brian Temu. *Pearls and Politics: The Impact of the Development of the Cultured Pearl Industry on Manihiki.* N.p.: R. B. T. Newnham, 1989.

Nichol, Bill, and Roger Hall. *Otago: The University.* Dunedin, N.Z.: U. Otago Press, 1994.

The Oxford History of New Zealand. 2d ed. Auckland: Oxford U. Press, 1992.

Papua New Guinea: The Role of Government in Economic Development. Canberra: Australian International Development Assistance Bureau, 1994.

Le peuplement du Pacifique et de la Nouvelle-Calédonie au XIXe siecle (1788-1914): Condamnes, colons, convicts, coolies, chan dang: Actes du colloque universitaire international. Paris: L'Harmattan, 1994.

Rebeix, Maurice. *Hawaii: Aloha, Surf, and Tradition.* Biarritz, France: Editions Surf Sessions, 1993.

Rofeta, John. *The Private Sector in the Solomon Islands: Its Nature, Structure, and Performance.* Honolulu: East-West Center, 1989.

Ryan, Peter M. *The Reed Dictionary of Modern Maori.* Auckland: Reed, 1995.

Siegrist, Henry Galt. *Selected Bibliography of 20th Century Geoscience and Related Scientific Literature of Micronesia.* Mangilao: Micronesian Area Research Center, U. Guam, 1992.

Smith, Helen M. L. Wong. *Kona in History: A Guide to Resources.* Honolulu: History and Humanities Program of the State Foundation on Culture and the Arts, 1994.

Smith, M. A., et al., eds. *Sahul in Review: Pleistocene Archaeology in Australia, New Guinea, and Island Melanesia.* Canberra: Dept. of Prehistory, Australian National U., 1993.

Songs and Stories of Taranaki = He Tuhituhinga Tai Hau-a-uru. Christchurch: Macmillan Brown Centre for Pacific Studies, U. Canterbury, 1993.

Sturton, Mark. *A Macroeconomic Framework of the Tongan Economy.* Honolulu: East-West Center, 1991.

Tanuvasa, Tavale. *Fatufatuga: Solo FaaSamoa.* Auckland: Centre for Pacific Studies, U. Auckland, 1994.

Tehranian, Katherine. *A Study of Palolo Valley: Ethnicity, Class, and Spatial Identity.* Honolulu: Dept. of American Studies, U. Hawaii, 1993.

Tryon, Darrell. *Let's Talk Bislama.* N.p.: Media Masters (South Pacific), 1994.

Tutua, Joini, and Tony Jansen. *Sapa: The Natural Way of Growing Food for the Solomon Islands.* Sydney: Sydney U. Technology, 1994.

Wilson, A. C. *Wire and Wireless: A History of Telecommunications in New Zealand, 1860-1987.* Palmerston North, N.Z.: Dunmore Press, 1994.

Wright, Matthew. *Hawkers Bay: The History of a Province.* Palmerston North, N.Z.: Dunmore Press, 1994.

CORRECTION

In Volume 17, Number 2 (June 1994), note 36 on page 135 of Book Review Forum reads, “And also, of course, to the memory of the spontaneous emergence of a cult of the Emperors--to whom they ambivalently submitted. . . .” The author would like it to read, “. . . to which they ambivalently submitted. . . .”

CONTRIBUTORS

Robert Aldrich, Department of Economic History H04, University of Sydney, Sydney, N.S.W. 2006, Australia. FAX: 61-2-552-3105. E-mail: roberta@sue.econ.su.oz.au

Peter Russell Crowe, Euro-séminaire d'ethnomusicologie, 29 rue Roquelaine, 31000 Toulouse, France. FAX: 33-61-63-67-30

Paul de Deckker, Universite Française du Pacifique, Centre Universitaire de Nouvelle-Calédonie, B.P. 4477, Nouméa, Nouvelle-Calédonie. FAX: 687-26-21-77

L. J. Gorenflo, Environmental Assessment Division, Argonne National Laboratory, Suite 6000, 955 L'Enfant Plaza North, S.W., Washington, D.C. 20024, U.S. FAX: 202-488-2413. E-mail: gorenflo@anl.gov

Stephen Henningham, Pacific and Asian History, Research School of Pacific and Asian Studies, Australian National University, Canberra, ACT 0200, Australia. FAX: 61-6-249-5525

Colin Newbury, Linacre College, Oxford University, Oxford OS1 3JA, U.K. FAX: 01865-2-73607

Michel Panoff, Laboratoire d'Ethnologie, Océanic, Musée de l'Homme, Palais de Chaillot, 75116 Paris, France

Moshe Rapaport, University of Hawaii, Department of Geography, Porteus Hall 445, 2424 Maile Way, Honolulu, Hawai'i 96822, U.S. E-mail: rapaport@uhunix.uhcc.hawaii.edu

Charles J. Weeks, Jr., Social and International Studies, Southern College of Technology, Marietta, Ga. 30060-2896, U.S. FAX: 404-528-4949. E-mail: cweeks@sct.edu