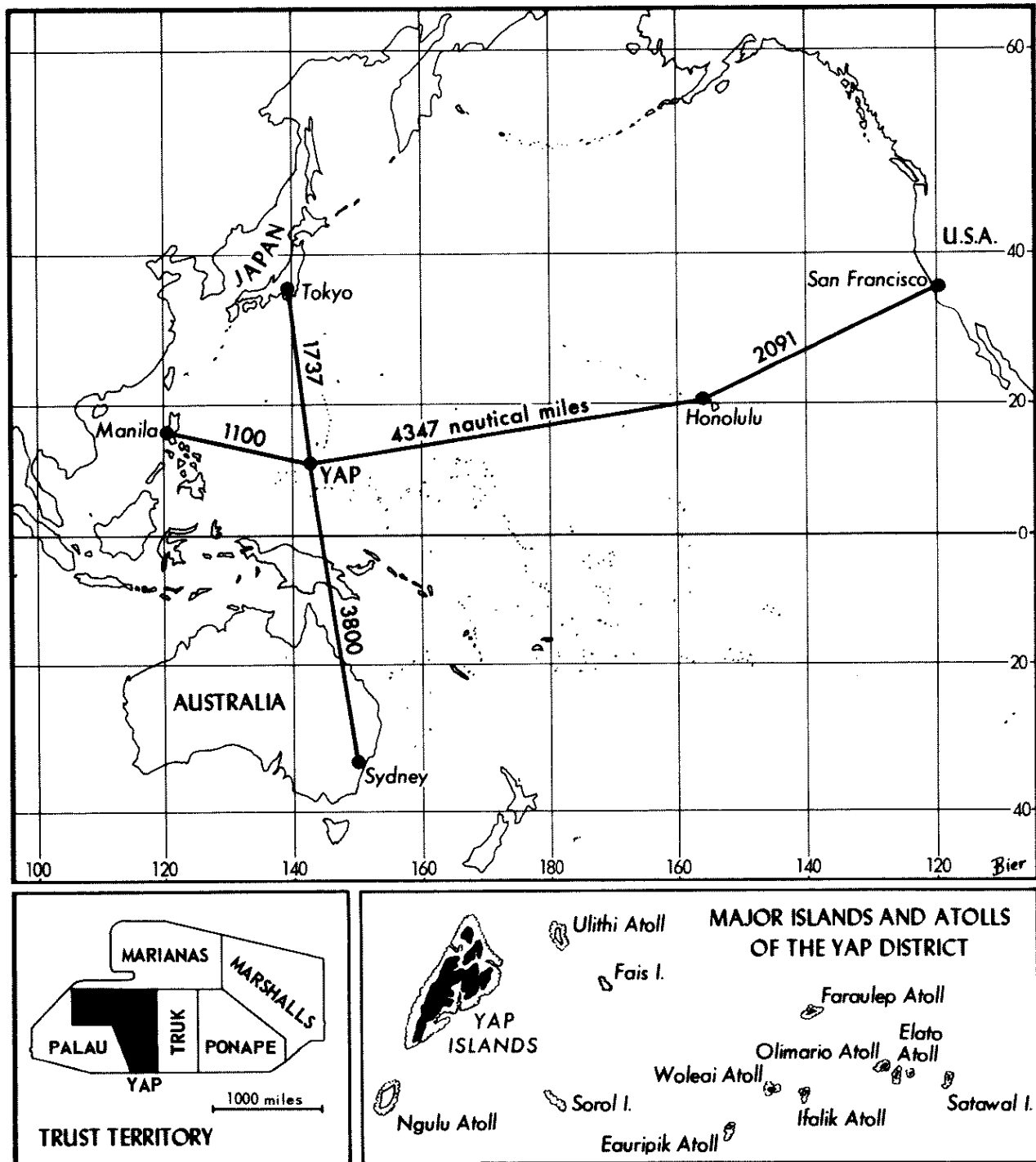

1. YAP AND THE YAPESE: THE LAND AND THE PEOPLE

The Yap Islands are in the Western Caroline Islands of Micronesia, about 450 nautical miles south and west of Guam, 1,100 nautical miles east of the Philippines, and 1,737 nautical miles south of Tokyo. The position of the islands is 9°30' north latitude and 138°5' east longitude. The nearest inhabited islands to Yap are Ulithi, approximately 100 nautical miles to the northeast, Ngulu, about 50 nautical miles to the south, and the Palau Islands, about 250 nautical miles to the southwest. (See [Figure 1](#).)

Yap is the administrative headquarters of the Yap District of the United States Trust Territory of the Pacific Islands. Included in the Yap District are the islands of Ngulu and Ulithi, and the atolls to the east and south, including Fais, Woleai, Lamotrek, and Satawal, among others. The people of these islands are linguistically and culturally different from the Yapese, but were dominated by the Yapese, politically and militarily, long before European influence was felt in the Pacific. Of the Trust Territory districts, Yap lies between Palau, to its south and west, and the Marianas, to its north, and Truk, to its east (see [figure 1](#), inset).

The Land

Figure 1. Location of Yap Islands, Caroline Islands (Adapted from Hawaii Architect & Engineers 1968)



The Yap Islands are an exposed portion of a large, upheaved, submarine ridge, approximately 850 miles long. The Yap portion of the ridge (toward the southern end) slopes off steeply on the east into the Western Caroline Trench (4,122 fathoms) and on the west, gently into the Philippine basin (2,500 fathoms). There are four main high islands and six minor islands in the Yap group, separated by narrow water passages and surrounded on the perimeter by a fringing reef. The total land area is approximately 38.6 square miles, with the islands forming a chain 16 miles

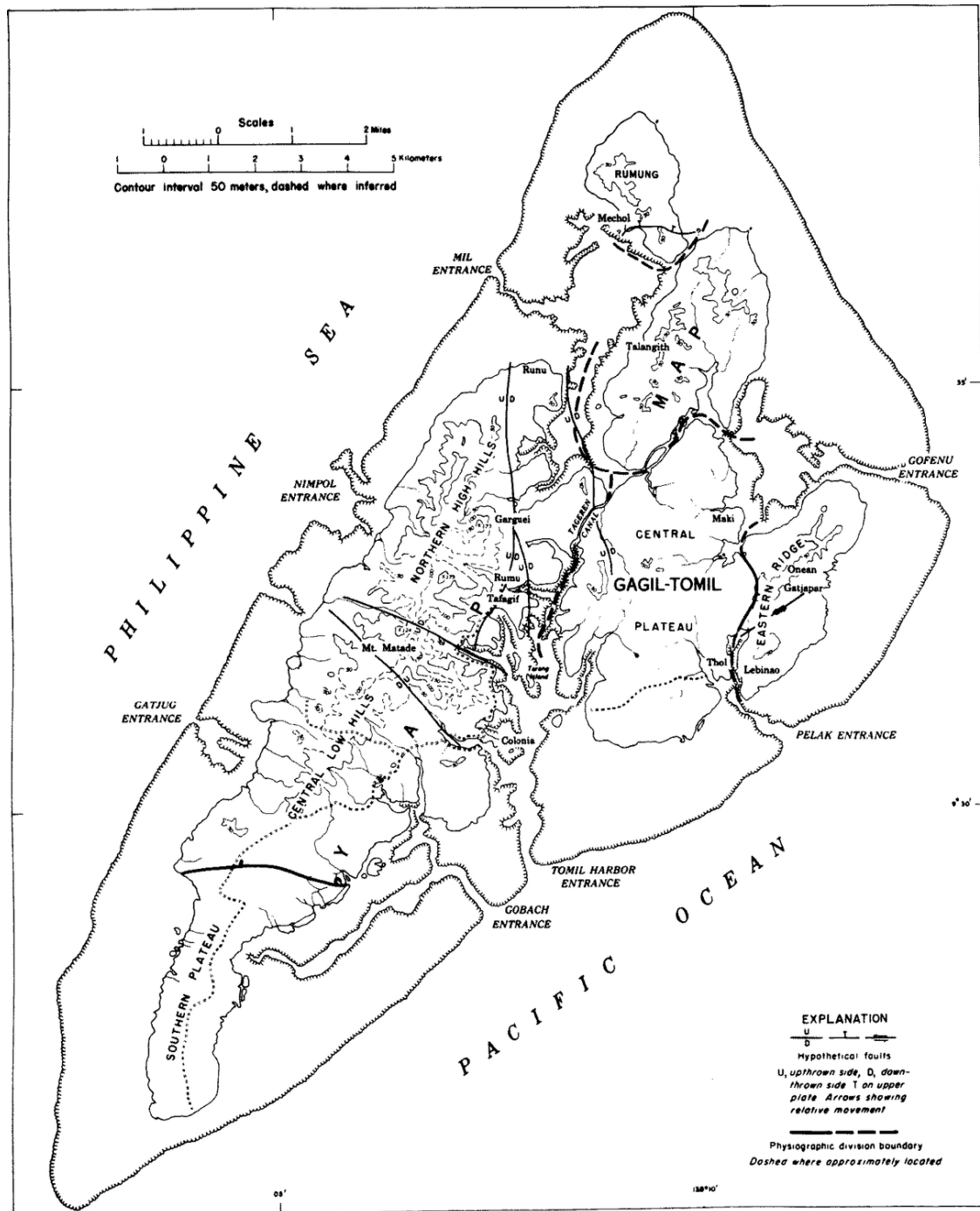
in length and from 1 to 6 miles in width. The islands of Yap and Gagil-Tamil,* separated by a man-made canal, form the largest land area in the group; the islands of Map and Rumung are considerably smaller. (See [Figure 2](#).)

Topography

Much of the main island of Yap is rugged, with hills, peaks, and ridges, some as high as 180 meters (590 ft.). A central plateau occupies the northern part of Yap island and most of Gagil-Tamil. Parts of this plateau are eroded badlands of reddish volcanic clay. East of the plateau, in Gagil, is a small ridge, 60 to 80 meters high, overlooking the reef and ocean to the east. Map and Rumung are dissected into moderately steep, rounded hills. To the south, the high hills of Yap island descend abruptly into a low hilly range, which, further southward, gradually declines into a narrow, flat plateau about 15 meters above sea level (Johnson, Alvis, and Hetzler 1960).

The soils of the Yap Islands are generally quite poor and have been classified into four major groups—lithosols, latosols, planosols and soils of coastal flats, valley bottoms, and inland depressions (Johnson, Alvis, and Hetzler 1960). The lithosols are the most extensive, and are relatively fertile, but of shallow depth. They are found chiefly in hilly and mountainous areas covered with forest, grass, and pandanus. Latosols are the second most extensive soil group, and are found generally on the plateaus of southern Yap and Gagil-Tamil. These are “reddish, granular, well-drained, infertile acid clays common to tropical regions” (Johnson, Alvis, and Hetzler 1960:96) and are formed from Tamil’s volcanic deposits. Most of these soils are covered with forest, grass, or with dense strands of fern. The soils of coastal flats, valley bottoms, and inland depressions form the third most extensive group. The coastal flats’ soils are formed from deposition, and generally are deep and sandy, and contain considerable organic matter, silt, and clay. These soils support dense stands of coconut palms. The nearly flat valley bottoms and the narrow inland areas behind the coastal flats are characterized by deep alluvial gray clays and are generally covered with dense stands of reeds or cultivated taro. The last and least extensive of the soils are the planosols, moderately deep, somewhat fertile soils found on the gentle slopes of plateaus and hills. These are mostly covered with grass and scattered pandanus trees. (See [Figure 3](#).)

Figure 2. Yap Islands (Johnson, Alvis, Hetzler 1960:53)



The fertility of latosols is extremely low due to rapid decomposition of organic matter and very rapid leaching of the soil. Planosols are low in fertility, although not nearly so low as the latosols. The rugged terrain of the lithosols and the coastal flats and valley bottoms provide the most fertile soil for human exploitation.

The second most important feature of Yapese topography is the fringing coral reef, which averages over one mile in width on the eastern side and slightly less than a mile on the west. The surface features, shown in [Figure 4](#), include the crest of the reef, the reef flat on which grow low patches of coral and coral heads, the deep holes with growing coral, and

the seaweed and sand tideflats culminating in the beach, or mangrove swamps. The long reef flat and holes provide protection and feeding grounds for fish and other animal life and are thus primary resources for the human population.

Climate

The primary factor in the climate of Yap is the continual movement of warm, moist air across tropical oceans, bringing warmth, high humidity, scattered clouds, and abundant rain. Temperatures are quite uniform, averaging about 82°F in the summer months and about 80°F in the “cooler” tradewind season running from December through April. Relative humidity ranges from 65 percent to 100 percent, with an annual average of 83 percent. The average cloud cover is 74 percent, the average rainfall, 120 inches (U.S. Department of Commerce 1966).

The summer season is generally marked by frequent heavy rains, frequent calms, and light west and southwesterly winds. The trade-wind season is noted for strong east-to-northeast winds and periodic drought, especially from February through April. The transitional months of May, June, and November are periods of greatest typhoon danger. Typhoons average three a year and vary in intensity, depending upon the distance between the storm center and Yap. The most damaging storms pass to the south of Yap bringing an inward surge of water that inundates and destroys coastal lands and villages.

Figure 3. Districts and Generalized Soil Map, Yap Islands
(Johnson, Alvis, Hetzler 1960)

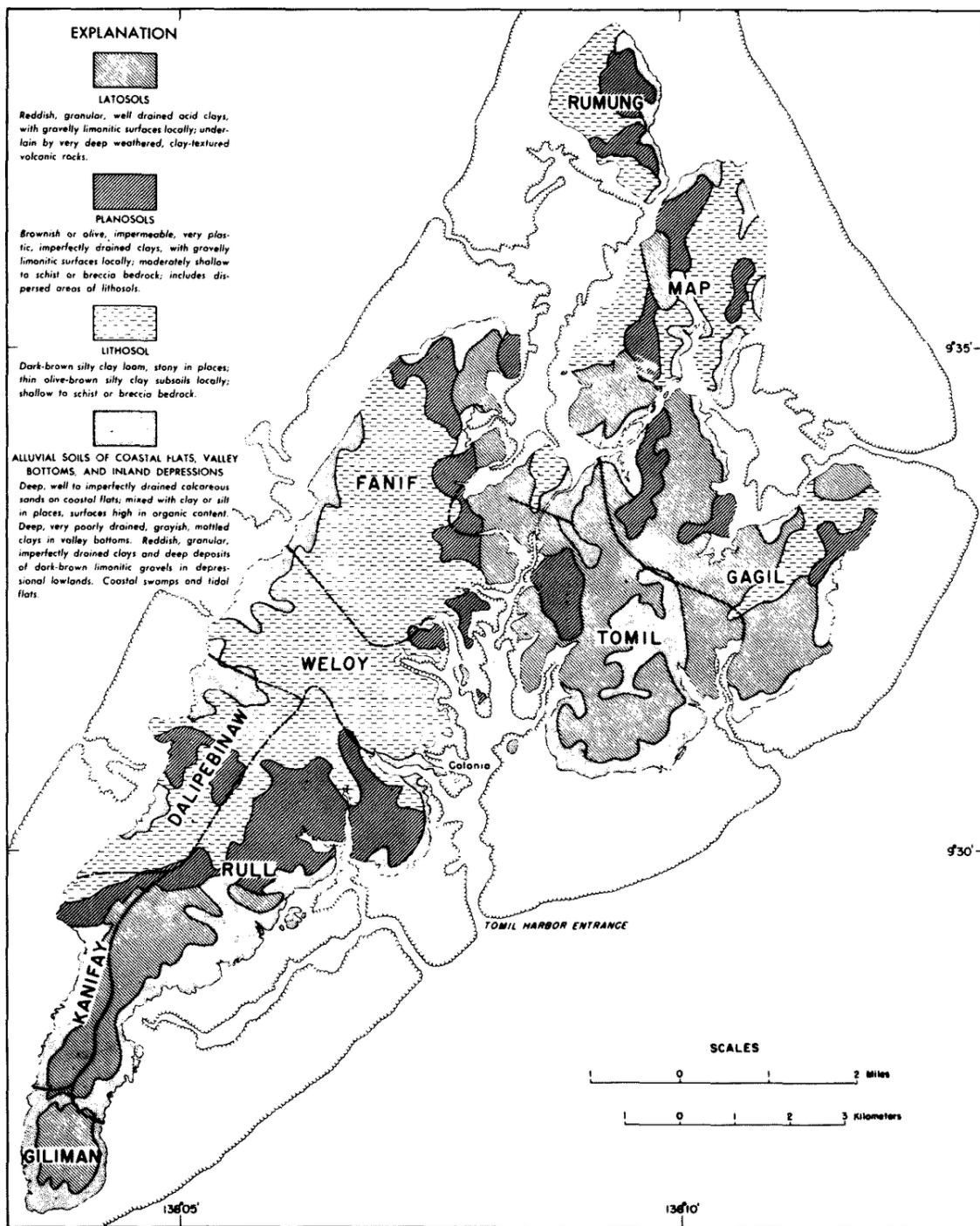
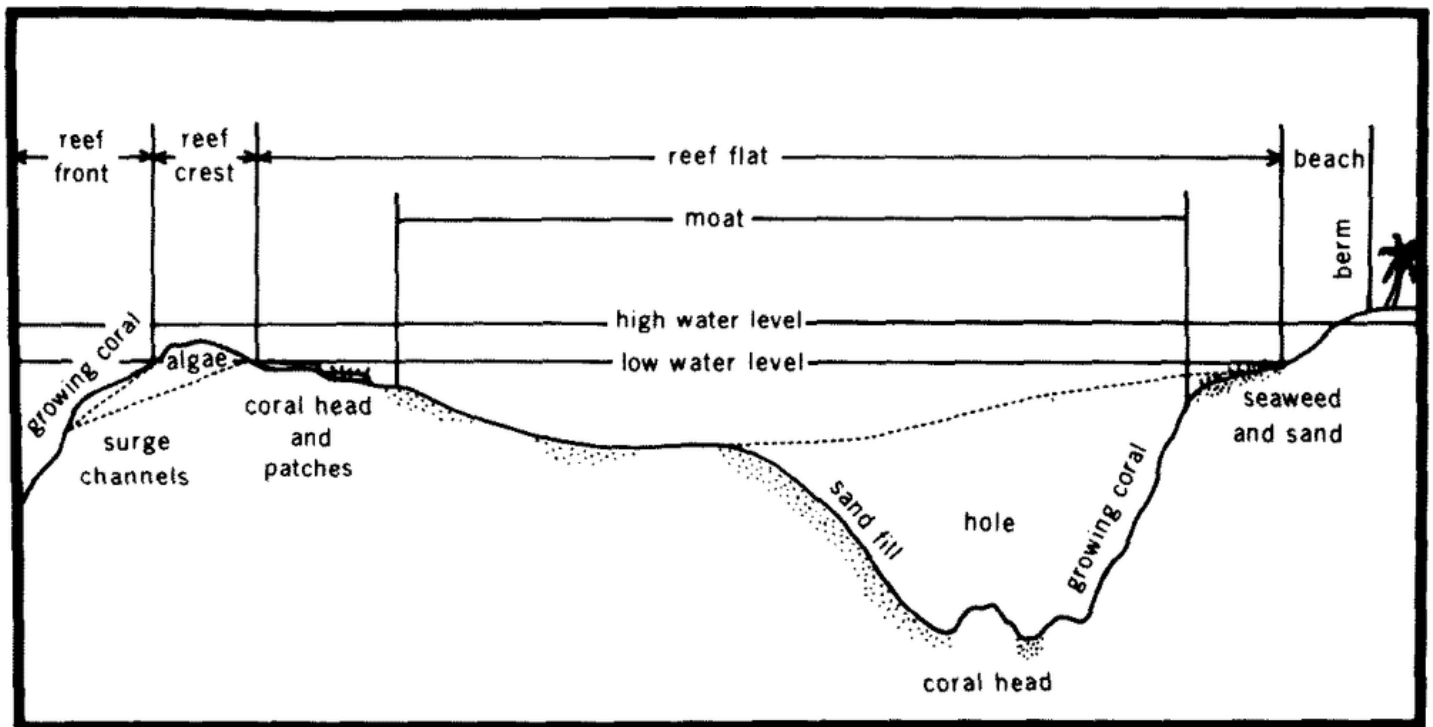


Figure 4. Coral Reef Profile, Yap Islands (Adapted from Johnson, Alvis, Hetzler 1960)



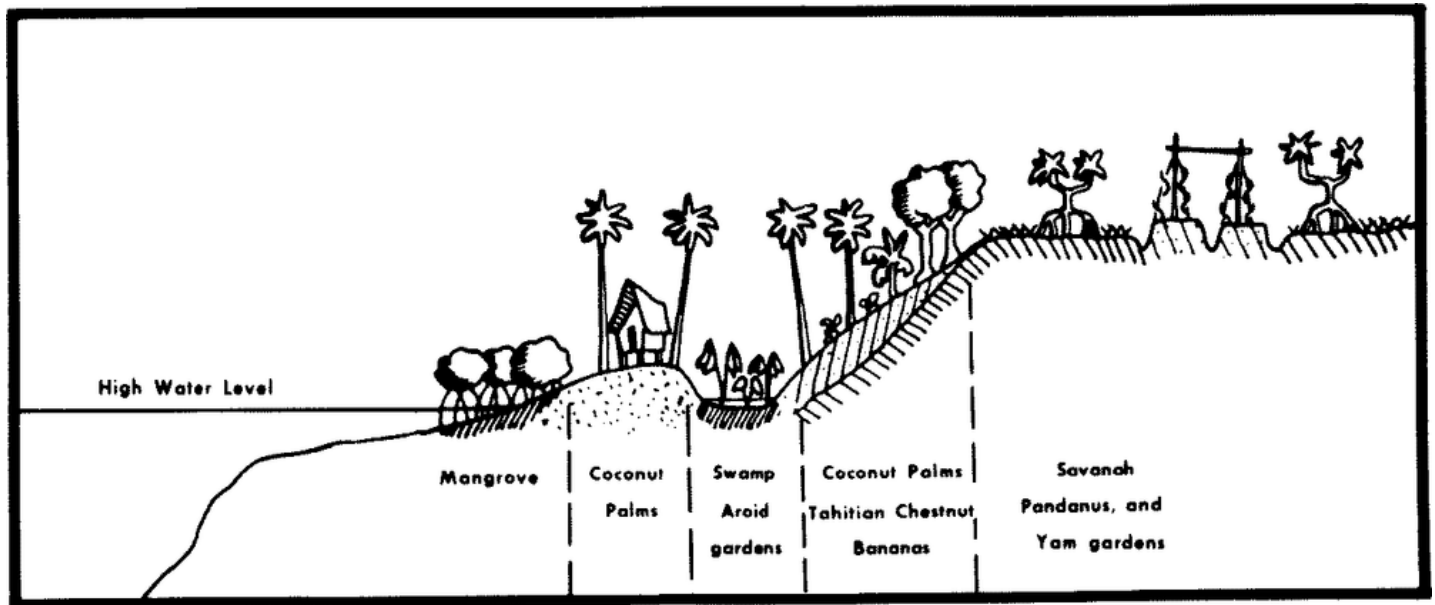
Flora

The vegetation of Yap is similar to that of many other high islands in the Pacific and particularly to that of the islands of Micronesia. The shoreline is bordered with patches of mangrove and occasionally with large extensive mangrove swamps. Coconut groves occupy the coastal flats along the beaches, and land behind the mangrove swamps and along the lower slopes of the hillsides. Marshes are scattered along the backshore areas and quite often are developed for cultivation of swamp taro. Nipa palms generally line the marshes and mangrove swamps. Valleys and the lower hillsides are usually forested, and the Gagil, Map, and Rumung highlands are covered with grasses and pandanus. The hilltops and valleys of Yap island are almost totally forested, with only scattered cleared areas, which rapidly return to bush. Scattered pandanus, grasses, and fern characterize the plateau areas. (See [Figure 5](#).)

Forest trees include the breadfruit, banyan, mango, Tahitian chestnut, and custard nut. Areca palms (betel nut) and citrus trees are common, along with other broadleaf trees, coconut palms, and young trees and shrubs. The mountain forests are much denser than those near centers of habitation, and include thickets of bamboo, and wild hibiscus. The largest trees vary from fifty-to seventy-five-feet high and are as much as two feet in diameter. A few very old trees, such as the tamani, may grow as large as five feet in diameter.

Plants that are of some particular significance for man are those grown for subsistence (see Table 1). According to Barrau (1961), the most important of the subsistence crops is the aroid *Cyrtosperma chamissonis*. This variety of the taro family is grown in low-lying, damp, or swampy areas and cannot be profitably harvested until at least three years old. *Colocasia esculenta*, or the true taro most common in Polynesia, is of secondary importance in Yap. Because of its softer consistency, it is generally reserved for old people who have lost their teeth.

Figure 5. Land Utilization, Yap Islands (Adapted from Barrau 1961:28)



Yams provide the second most important subsistence crop, with *Dioscorea alata* being the most important variety. *D. esculenta*, *D. pentaphylla*, and *D. nummularia* are also cultivated, but in lesser quantities. *D. bulbifera* is a variety eaten mostly by low-caste Yapese, and scorned by members of the high caste. Yams are grown on the high, broad ridges of the islands and on land bordering the central plateau of Gagil-Tamil. The land is generally built up into mounds surrounded by deep drainage trenches. Tall bamboo poles or other supports are used for the stems. The cultivating of yam gardens requires a rather complicated arrangement of the soil and is usually done by groups of cooperating women.

Other foods rounding out the daily diet include many varieties of bananas (*Musa sapientum*, *M. paradisiaca*, *M. troglodytarum*), breadfruit (*Artocarpus altilis*), Tahitian chestnut (*Inocarpus edulis*), and several varieties of citrus trees. The coconut palm (*Cocos nucifera*) is extremely important, not only for its food value, but because literally every part of the tree is utilized in the daily economic life of the people.

Several supplementary crops add seasonal variety to the diet. Sweet potatoes (*Ipomoea batatas*), squash, and the aroid *Xanthosoma* are the most common of these. Cassava (*Manihot esculenta* and *M. dulcis*) is

cultivated but not considered a tasty addition to the diet. Mango (*Mangifera indica*), sugarcane (*Saccharum officinarum*), papaya, and pineapple are the children's delights, while the betel nut from the areca palm (*Areca catechu*) and the pepper leaf (*Piper betle*) top off the daily diet of adults. The latter are mixed with lime and chewed almost constantly for the mild, relaxing narcotic effect that comes from the combined juices of the pepper leaf and betel nut.

Table 1. Economic Plants of Yap

	Scientific Names	Yapese Names	English Names
Aroids	<i>Cyrtosperma chamissonis</i>	lak'	taro
	<i>Colocasia esculenta</i>	mal	taro
	<i>Xanthosoma</i>	honolulu	taro
Yams	<i>Dioscorea alata</i>	du'og	yam
	<i>D. esculenta</i>	dal	yam
	<i>D. nummularia</i>	thep	yam
	<i>D. pentaphylla</i>	rowal	yam
	<i>D. bulbifera</i>	rok (yoy)	yam
Bananas	<i>Musa sapientum</i>	dinay	bananas
	<i>M. paradisiaca</i>		bananas
	<i>M. troglodytarum</i>	aray	bananas
Fruit trees	<i>Areca catechu</i>	buw	areca palm (betel)
	<i>Artocarpus altilis</i>	thow	breadfruit
	<i>Inocarpus edulis</i>	bo'oy	Tahitian chestnut
	<i>Mangifera indica</i>	manga	mango
	<i>Carica papaya</i>	babay	papaya
	<i>Cocos nucifera</i>	niw	coconut
Other	<i>Manihot esculenta</i> , <i>M. dulcis</i>	thiyogang	cassava

<i>Ipomoea batatas</i>	komotiy	sweet potato
<i>Saccharum officinarum</i>	makil	sugarcane
<i>Pueraria lobata</i>	dinay	
<i>Curcuma longa</i>	guchol	turmeric
<i>Hibiscus manihot</i>	gal‘	hibiscus
<i>Piper betle</i>	gabuy	pepper leaf

SOURCE: Scientific names are from Barrau 1961.

Fauna

Mammals are rare among the Yap fauna. Fruit bats of the genus *Pteropus* are the only variety of mammal to arrive independently of man. The bats are common, but economically unimportant. Other mammals include rats, pigs, dogs, and cats. Americans introduced cattle, but the Yapese considered them more trouble than they were worth and today they are nearly extinct.

Reptiles are numerous, particularly the geckos (*Hemidactylus*), which are found everywhere, and the large harmless monitor lizard (*Varanus indicus*), which hides around the mangrove swamps and marshes. The Japanese before World War II introduced toads and they are found all over the island today. Yapese have reported that the monitor lizards have been eating toads, which poison them and thus reduce the lizard population. Sea turtles (*Chelonia mydas*) swim in the deep holes inside the reef and are considered a delicacy by the Yapese. Another food supplement is the land crab, which burrows in holes along the coastal flats and on the hillsides. Snakes and marine crocodiles are not found in Yap.

Insects are the most prolific of the land fauna and include a bountiful supply of mosquitos and flies. Cockroaches and ants add to the variety and termites are one of the most serious plagues for the people. The coconut rhinoceros beetle, which has devastated coconut groves in Palau, is not found in Yap.

Birds are largely shore and marine types, and are noticeably rare. Fruit pigeons are the only type hunted and eaten. Early Europeans introduced chickens and they are raised and eaten today by nearly every household. Some chickens that have run wild are also hunted for sport and food.

Marine fauna is the most varied and numerous in Yap. Reef fish, including parrot fish, snapper, bass, butterflyfish, and many others, provide the main source of protein in the Yapese diet. Mollusks, including the giant clam (*Tridacna*), are gathered along with lobsters and octopus to supplement the supply of fish. Trepang, once an important trade item,

lines the sandy bottom of the shallow lagoon and the spiny stone-fish provides one of the most painful dangers to unsuspecting, barefooted fishermen. Morays, sharks, barracuda, and rays are also numerous along the reef, but are rarely threatening to the islands' inhabitants. On rare occasions the Yapese venture into the open ocean for bonito, wahoo, tuna, sailfish, and flying fish.

The People

Physical Traits

The racial characteristics of the Yapese are varied. Yapese infants display the dark purple blot at the base of the spine characteristic of the Mongoloid peoples of Asia. Hair texture varies from kinky to wavy and straight, and hair color is dark brown or black. Skin color is brown, with some degree of variation in shade between individuals. The same is true of facial traits: some individuals have the high nasal bridges, thin lips, and very hairy faces characteristic of caucasoid groups; others have the relatively flat noses, everted lips, and flaring nostrils of the Melanesians. Stature is generally short, but varies considerably from area to area. In terms of visible characteristics, then, the Yapese seem highly varied and do not fit any one classification. Jane Hainline's forthcoming analysis of Yapese blood serology should provide some interesting insights into Yapese racial classification.

The mixture of racial groups in Yap is considered unusual in Micronesia. Yapese tales tell of people arriving in Yap from as far away as Polynesia and from Indonesia. Trips were commonly made from Yap to Palau, or to the Marianas, or east to the islands in the Central and Eastern Carolines. Other peoples surely made trips in the direction of Yap and settled there. Thus, people from all over Oceania are likely represented in the Yapese gene pool.

The cultural "appearance" of modern Yapese varies almost as much as their physical appearance. Many Yapese still wear a modern form of the traditional dress: men in loincloths and women in grass skirts. Others prefer Western-style clothes and are rarely, if ever, seen in traditional dress. Almost all Yapese, however, still chew betel nut and carry the traditional betel nut basket. Besides the narcotic effects obtained, chewing betel nut serves as a social institution that provides a well-defined means of social discourse and interaction.

Demography

The population of Yap at the time of the research, by municipality, is listed in [Table 2](#). Perhaps the most interesting aspect of population on Yap is the reversal of the dramatic population decline (see [Table 3](#)) observed in the study of 1947–1948 (Hunt et al. 1949).

Schneider (1955) and Mahoney (1958) estimate the maximum population of Yap at about 50,000 people, based on a count of house foundations in the Rumung and Delipebinaw areas, and using an average of four persons per household. This estimate would place the population density at 1,300 persons per square mile, which is not impossible given current figures from some other Micronesian islands. However, since much of Yapese land has limited value these figures signify that in the not too distant past the Yap Islands were overpopulated. The culture had adapted itself to this condition of intensive population, and was organized politically and socially to operate with a large population base. (Present social values reflect these past conditions in which resources were extremely scarce and competition to obtain them intense.) Suddenly, however, the population base of Yapese social and political organization collapsed as epidemics and wars wiped out thousands of people in a relatively short period of time. By 1900 the Yapese numbered a little over 7,400, by 1946 only 2,582. In villages once teeming with people often not even enough families survived to provide one man for each position in the status hierarchy of village government. Thus, depopulation had a very far-reaching impact upon the human resources available for political activity.

Table 2. Yap Population, 1968

Municipality	Total Population	Male	Female
Delipebinaw	333	171	162
Fanif	495	251	244
Gagil	544	288	256
Gilman	185	104	81
Kanfay	234	132	102
Map	430	228	202
Rull	769	424	345
Rumung	190	93	97
Tamil	648	350	298
Weloy	427	221	206
TOTALS	4255	2262	1993

Today, even with an increase in population, the human resources for traditional political endeavors are declining. One of the major factors is wage work and the concentration of people in the district center. Many people have moved into the town to work in government jobs or for economic enterprises. Others do not live in town, but commute by way of the network of unpaved roads and regular bus transportation. Many own automobiles or motor bikes. Thus, a large part of the labor force has gone off from the villages to other tasks. When weekends come and they return to the villages, they come to seek relaxation and drinking, not to engage in community projects.

Table 3. Population Variation, Yap, 1899–1968

Census Year	Governing Power	Total Population	Percent Change Per Year
1899	Spain	7,808	
1900	Germany	7,464	—4.4
1903	Germany	7,156	—1.4
1905	Germany	6,641	—3.7
1910	Germany	6,328	—1.0
1911	Germany	6,187	—3.8
1915	Japan	5,790	—1.6
1920	Japan	4,988	—3.0
1925	Japan	4,401	—2.5
1930	Japan	3,863	—2.6
1934	Japan	3,665	—1.3
1935	Japan	3,556	—3.0
1936	Japan	3,467	—2.4
1937	Japan	3,391	—2.3
1946	U.S.	2,582	—3.0
1947	U.S.	2,607	+1.0
1948	U.S.	2,625	+0.6
1949	U.S.	2,694	+2.4
1950	U.S.	2,720	+1.1

1951	U.S.	2,774	+1.9
1958	U.S.	3,176	+2.0
1961	U.S.	3,402	+2.4
1963	U.S.	3,508	+1.6
1966	U.S.	4,100	+5.6
1968	U.S.	4,255	+1.9
1973	U.S.	4,903	+3.0

NOTE:

Data for the years 1899–1951 were adapted by the author from Hunt, Kidder, and Schneider 1954. Figures for the years 1952–1973 are from the Annual Reports to the United Nations on the Administration of the Trust Territory of the Pacific Islands.

Trust Territory statistics are generally considered unreliable by scholars who have observed census procedures. I do not think Yap Islands statistics are as unreliable as those for Truk, Ponape, or the Marshalls. Communication on Yap is much better than in the outer islands of the district, so that census updating is more accurate. The figures present a problem, however, because immigrant Palauans are counted as Yapese. This may account for the extremely large increase in population from 1963–1966, as immigration from Palau jumped markedly after the completion of the Yap airstrip in 1962. The 1973 census figures distinguish for the first time Trust Territory citizens by home area from Trust Territory residents. These figures show 4,626 people citing the Yap Islands as their home area, as opposed to the 4,903 resident Trust Territory citizens.

With this change in orientation from the local village to the district center, traditional leadership is stripped of important authority and power. The problems of today—alcoholism, trespassing, modern roads, vehicles, money, and theft—all lie outside the sphere of traditional action. They are problems that accompany a mobile population undergoing a proliferation of new wants and dissatisfactions. New methods of policing and control are required and the traditional leader is placed in a position of relative helplessness because the traditional ways cannot cope with the new problems. Population decline, wage work, and migration to town all have raised serious problems and at the same time have depleted the pool of support and labor necessary to maintain a viable traditional political system. Population, then, becomes an important ecological variable within the political field.

* While the official gazetteer for Micronesia shows Tomil as the official

spelling of this area, the Yapese commonly spell the word as they pronounce it, Tamil. The Yapese preference will be followed throughout the text.