CIVIL AFFAIRS HANDBOOK

West Caroline Islands

OPNAV P22-7

(Formerly OPNAV 50E-7)

OFFICE OF THE CHIEF OF NAVAL OPERATIONS

NAVY DEPARTMENT

1 APRIL 1944

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LETTER OF PROMULGATION

OFFICE OF THE CHIEF OF NAVAL OPERATIONS,
NAVY DEPARTMENT,
WASHINGTON 25, D. C., *1 April 1944.*

CIVIL AFFAIRS HANDBOOK

WEST CAROLINE ISLANDS
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1. OPNAV P22–7 is a nonregistered publication. It is intended to provide useful information for civil affairs officers in the area indicated, but the material contained herein may be of value to other officers and for other purposes.

F. J. HORNE,
Vice Admiral, U. S. Navy,
Vice Chief of Naval Operations.

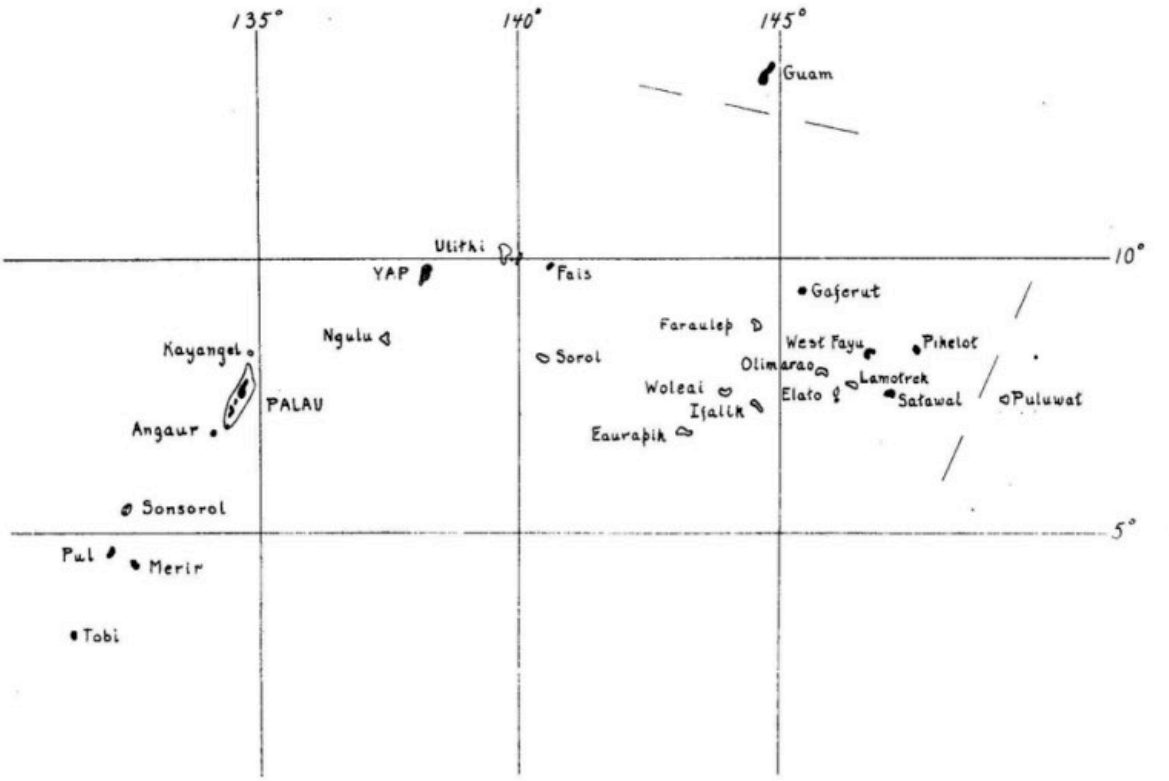
PREFACE

This handbook is designed primarily for the use of Army and Navy commanders and their staffs and subordinates who may be concerned with military government and the control of civil affairs in the Western Caroline Islands. It is therefore concerned exclusively with information pertinent to administrative planning and action. Information on military objectives and hydrography, being fully presented in other existing monographs, is not duplicated herewith.

The text is divided into three parts--(1) Basic Information, (2) Administration and Public Facilities, (3) Economics--each part being subdivided into chapters and topics, numbered decimally. Part 1 is designed to present an over-all survey of basic information on the Western Caroline Islands for military administrators. Parts 2 and 3 contain data especially pertinent to particular administrative functions or activities, and are intended primarily for reference.

Three organizational charts have been included to clarify the formal relationships existing between the various administrative organs. A selected bibliography of sources consulted, with brief critical comments, follows the text. At the end of the volume appear 40 illustrations portraying important aspects of life and enterprise in the islands.

The materials contained in this handbook have been checked with all available sources of information. Most of the statistical information dates from 1937, and much of the best information about native life comes from the German period, prior to 1914. Recent Japanese sources have been used extensively, however, for confirmation of earlier reports.



WESTERN CAROLINE ISLANDS

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323. Housing and Construction. Native dwellings, men's houses, cookhouses, and canoe-houses are of wooden construction with thatched roofs; modern buildings are mainly of European design, built of wood and roofed with corrugated iron. 154

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325. Food Industries. The leading food industry is commercial fishing, confined almost exclusively to the Palau district; the principal marine product is dried bonito; other food industries of importance are canning, production of tapioca starch, and pineapple growing. 160

326. Miscellaneous Industries. Copra production is comparatively small, but is of considerable economic importance to the natives; production of marine shell for buttons is a major industry; other local products are cordage, cultured pearls, and tortoise shell; manufacturing is but slightly developed. 162

327. Business and Industrial Organizations. Virtually all industry and most of the business in the islands is in the hands of four large Japanese companies; there are many small independent Japanese entrepreneurs and traders. 165

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333. Wages and Other Incentives to Labor. The daily wage for ordinary labor is from 65 to 80 sen for natives, twice as high for Japanese; prevailing salary scales are also low. 171

334. Specialization. The native division of labor by sex is becoming less rigid; specialized occupations are few among the natives, numerous among Japanese. 172

335. Labor Organizations. No labor unions or other labor organizations are reported for the Western Carolines. 173

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342. Movable and Incorporeal Property. Private ownership of movables is usual; the natives of Palau are familiar with interest-bearing collateral loans; the natives of the Yap district recognize the principle of patent and copyright. 175

343. Inheritance. In native custom, a woman's possessions are inherited by her daughters and sisters; a man's property is transmitted in the male line, to sons, in Yap and adjacent islands and in Merir, Pul, Sonsorol, and Tobi, but in the female line, to brothers or the sons of sisters, in Satawal and adjacent islands and in Angaur, Kayangel, and Palau. 176

344. Domestic Commerce. Natives exchange copra and other native products for cheap Japanese goods at trading stations; there are shops in the larger centers. 176

345. Foreign Trade. Shell products, phosphates, and dried bonito comprise 90 per cent of the exports; food and manufactured goods are the principal imports; nearly all trade is with Japan. 177

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351. Currency. Japanese currency is standard throughout the area; native shell and stone money is still used locally in some places. 181

352. Foreign Exchange. Foreign exchange is unimportant, since nearly all external trade is with other parts of the Japanese Empire. 182

353. Banking, Credit, and Insurance. There are no banks; a postal savings system is in operation; credit associations and one industrial guild perform certain banking functions; limited insurance facilities are offered by the postal system. 182

354. Investments. Large Japanese firms have the only heavy investments; native holdings are limited almost wholly to land; small business and mission properties are modest. 184

355. Stock and Commodity Exchanges. There are no stock or commodity exchanges in the Western Carolines. 184

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1. BASIC INFORMATION

II. GEOGRAPHY

111. Location

Geographic Position. The Caroline Islands lie east of the Philippines, north of New Guinea, west of the Marshall Islands, and south of Guam. They form a broad belt extending from 131° east longitude in the west to 163° in the east, and fall between the first and tenth degrees of north latitude. Together with the Marianas, Marshall, and Gilbert Islands they constitute the insular area of the Pacific known as Micronesia.

The 148th meridian of east longitude separates the archipelago into two divisions, the Western and the Eastern Carolines. The present handbook deals exclusively with the first of these divisions. The Western Carolines, as thus defined, are coextensive with two of the four administrative areas into which the Japanese have divided the Caroline Islands, namely, the Palau district and the Yap district. The other two administrative districts, those of Ponape and Truk, comprise the Eastern Carolines.

Table of Distances. The approximate distances in nautical miles from Palau and Yap in the Western Carolines to other places in the Pacific are shown in the following table:

	Palau (Malakal)	Yap (Tomil Harbor)
Auckland	3,563	3,530
Guam	706	458
Hongkong	1,531	1,593
Honolulu	3,997	3,757
Jaluit	2,070	1,896
Kusaie	1,708	1,510
Manila	1,044	1,154
Midway	3,001	2,751
Noumea	2,612	2,568
Pago Pago	3,524	3,380
Palau	--	258
Panama	8,674	8,430
Ponape	1,418	1,211
Rabaul	1,280	1,196
San Francisco	5,751	5,501
Shanghai	1,679	1,642
Sydney	3,052	3,022
Truk	1,068	825
Yap	258	--
Yokohama	1,731	1,571

Time. The standard time in most of the Western Carolines is that of 135° east, which is 9 hours in advance of Greenwich. The islands west of Eauripik fall within the minus 9 zone (G.M.C.T.), while Eauripik atoll and the islands east of it fall within the minus 10 zone.

Composition. Exclusive of coral reefs, the Western Carolines include 23 island groups, atolls, and isolated islands (see 113 for individual descriptions). All are coral islands or atolls with the exception of Yap, which is of sedimentary rock formation, and the northern islands of Palau (Arakabesan, Babelthuap, and Malakal), which are volcanic in origin. The following table lists the islands of the Yap district in order from east to west, and those of the Palau district from northeast to southwest:

Yap District	Palau District
Pikelot	Kayangel
West Fayu	Palau (including Arakabesan, Aurapushekaru, Babelthuap, Eil Malk, Koror, Malakal, Peleliu, and Urukthapel islands)
Satawal	
Lamotrek	
Elato (including Toas atoll)	
Olimarao	Angaur
Gaferut	Sonsorol
Faraulep	Pul
Ifalik	Merir
Woleai	Tobi
Eauripik	
Fais	
Sorol	

Yap District

Ulithi (including Bulubul, Falalop, Losiep, and Pau islands, and Zohhoiiyoru atoll)
Yap
Ngulu

Area. The total land surface of the Western Carolines amounts to approximately 275 square miles, 90 in the Yap district and 185 in the Palau district. Most of this area is made up of two principal islands, Yap with 83 square miles and Babelthuap in Palau with 143 square miles.

112. Climate

Meteorological Stations. Prior to 1914 the German administration maintained a government meteorological station in Palau. During the years 1902-03 this station was located on Malakal Island, but in 1905 it was transferred to Koror Island, where observations were made until 1911. In 1909 another government station was established on Angaur and was operated until 1913. Observations were also made and records kept by both official and unofficial observers on the islands of Yap and Lamotrek for various years during this period. Unfortunately, the data obtained from these observations are incomplete for a number of years, and most of the reports are concerned chiefly, and sometimes exclusively, with rainfall.

For about five years after the military occupation of the islands by the Japanese forces during World War I, Japanese garrisons conducted meteorological observations on many of the islands, including Angaur, Koror, Lamotrek, and Yap. In 1922, with the inauguration of the South Seas Government, a Meteorological Observatory was established on Koror Island (position: 7° 20' N, 134° 29' E; elevation: 104 feet). Subsequently a branch observatory was established on Yap (position: 9° 30' N, 138° 08' E; elevation: 96 feet). Detached weather stations were later established on Tobi, Ulithi, and Woleai. These stations are believed to have assembled full weather data and to have conducted observations and investigations of other meteorological phenomena, including tides, earthquakes, terrestial magnetism, and air currents in the upper atmosphere, but very few of the results have been published. Consequently the data presented below are regrettably meager in certain respects. In addition to the information collected by the government stations, observations on rainfall, atmospheric temperature, and barometric pressure are made by many of the public schools and police stations throughout the islands. The observatory at Koror, it is reported, assembles weather data from the principal meteorological stations in the mandated area each morning at 0600, and broadcasts this information, together with storm warnings to ships, at 1100 on a radio frequency of 30 kc.

Temperature. The Western Carolines enjoy a tropical oceanic climate, characterized by a high and uniform temperature. Both seasonal and diurnal variation in temperature is slight. On Yap, during 24 unspecified years of Japanese observations, the mean annual temperature is reported to have averaged 80° F., while the average on Koror for approximately the same period was 81° F. On Yap, during the same years, the mean monthly temperature, the mean maximum temperature, and the mean minimum temperature varied not more than 2° F. On Koror the temperature record was even more uniform. The mean diurnal range on Yap is reported as 11.7° F.; that on Koror as 9.6 F. In Palau the highest monthly mean maximum temperature recorded during the period 1924-34 was 91° F., registered in June, August, and September, and the lowest was 69° F., recorded in January. The range of extremes is believed to be approximately the same on Yap, though exact statistical information is lacking. The following table presents the results of observations at the Yap and Koror stations for the above-mentioned period of approximately 24 years:

Averages	Yap	Koror
Mean for period	80° F.	81° F.
" " January	80	80
" " February	80	80
" " March	81	81
" " April	82	82
" " May	82	82
" " June	82	81
" " July	82	80
" " August	82	80
" " September	82	81

Averages	Yap	Koror
Mean for October	82° F.	81° F.
" " November	82	81
" " December	81	80
Mean maximum for period	88	87
Mean minimum for period	75	75
Mean diurnal range	11.7	9.6

Atmospheric Pressure. Barometric pressure in the area is very uniform, and the mean monthly pressure, corrected to sea level, is reported to vary only between 1009 millibars (756.83 mm.) and 1011 millibars (758.33 mm.). In Yap the usual barometric oscillation during a year is from 764 mm. (30.08 inches) to 759 mm. (29.88 inches), while in Palau it is from 764 mm. (30.08 inches) to 755 mm. (29.70 inches). In 1926 the average atmospheric pressure was recorded by the Koror station as 756.551 mm. The daily movement of the barometer throughout the area averages about 2 mm. (.08 inches or 2.6 millibars) and is very regular, with double maxima and minima each day, as in the Marshalls and Eastern Carolines. Usually the maxima occur at about 0900 and 2100; the minima at 0300 and 1500. The seasonal variation is such that the barometer is usually highest in February and March, and lowest in October and November. An extreme low reading of 736 mm. (28.98 inches) was recorded in Yap on October 27, 1905.

Humidity. The humidity is excessive, but it is not quite as extreme as in parts of the Eastern Carolines. The average relative humidity for the Western Carolines is about 81 per cent. In Yap the most humid months are usually July, August, and September, while the driest are January, February, and March. In Palau, January and July are the most humid, March and April the driest. Palau is somewhat less humid than Yap. The lowest relative humidity reading for Palau during the period 1924-32 was 45 per cent, recorded at the Koror station during the month of March. The humidity is regularly greatest in the early morning hours, and least in the afternoon. In Palau, the mean diurnal variation is reported to be least in January (9 per cent) and greatest in March (16 per cent). Very little fog is reported for Palau. The following table presents data on relative humidity, in percentages, as observed on Yap over a 19-year period (dates not specified) and at the Koror station during an unspecified period of years under Japanese rule and during the year 1926:

Averages	Yap	Koror Years Unspecified	1926
Mean for period	84%	77%	81%
" " January	81	79	82
" " February	81	77	80
" " March	80	74	77
" " April	81	73	77
" " May	84	77	81
" " June	85	77	82
" " July	86	79	82
" " August	86	77	83
" " September	86	77	83
" " October	86	77	81
" " November	86	77	84
" " December	84	78	84
Mean at 10 a.m.	87	77	
Mean at 3 p.m.		75	

Rainfall. Precipitation is relatively heavy throughout the Western Carolines, and there is ordinarily more rain in the high islands of Palau than on Yap or elsewhere within the area. The mean annual precipitation at Koror is variously reported as 141 inches in 1906-12, 123 inches in 1918-20, and 156 inches during 19 unspecified years of Japanese observations. The mean annual precipitation on Malakal Island in Palau was reported as 104 inches during 1902-03; that for Angaur as 116 inches during 1909-11. German sources indicate that Lamotrek has the least recorded precipitation in the area, its mean annual rainfall for the years 1902-05 being approximately 100 inches. The mean annual precipitation on Yap is also variously reported as 130 inches during six years between 1902 and 1912, as 122.5 inches in 1920, and as 105 inches during 27 unspecified years of Japanese observations. Seasonally, the summer months are the rainiest, the winter months driest. The greatest precipitation usually occurs in July, the least in March. About 57 per cent of the daily rainfall at Lamotrek, and about 56 per cent of that at Yap, is reported to be nocturnal, whereas in Palau the precipitation is approximately evenly divided between the night and daylight hours.

The following table presents the data on rainfall (in millimeters) as reported for various stations and periods, namely: the German station on Angaur, 1909-11 (incom-

plete); the German station on Koror, 1906-11; the Japanese station on Koror, 19 unspecified years; the German station on Malakal, 1902-03; the German station on Yap, 1902-11 (incomplete); the Japanese station on Yap, 27 unspecified years; and German observations on Lamotrek, 1902-05 (incomplete):

	Angaur	Koror		Malakal	Yap		Lamotrek
	German	German	Japanese	German	German	Japanese	German
Annual mean over period	2936	3578	3954	2649	3305	2973	2537
Mean for January	214	251	382	202	168	166	156
" " February	347	194	238	211	216	150	38
" " March	324	226	173	105	264	126	106
" " April	146	158	192	264	139	130	278
" " May	116	310	395	359	250	254	182
" " June	289	319	316	315	297	251	262
" " July	335	453	506	305	427	429	368
" " August	208	364	357	114	417	415	357
" " September	109	292	399	118	381	318	151
" " October	125	263	376	224	279	300	245
" " November	399	321	299	226	237	253	214
" " December	324	428	322	206	230	230	180
Average number of rainy days per year	302	267	286		237	259	128
Average number of days per year with at least 25 mm. of rain	27	44			36		30
Maximum precipitation in 24 hours			214		252	320	104

Cloudiness. The Western Carolines are characterized by a very high degree of cloudiness. The skies of the high islands of Palau are especially cloudy, and it is reported that the average number of clear days per year at Koror is only 1.4. Japanese observations made at Koror during an unspecified period of years show a mean annual cloudiness of 8.5 on a scale of 10 (ranging from 0 for a cloudless sky to 10 for a completely overcast sky), while similar observations at Yap over an unspecified 19-year period indicate a mean annual cloudiness of 7.4. During an unspecified three-year period on Yap, the mean cloudiness at 10 a.m. was reported as 8.4. Seasonal variation is slight, as is shown by the following table, which presents data on relative mean cloudiness for Koror over an unspecified period of years, presumably of Japanese administration, and for Yap over a period of 19 years of Japanese administration (three to four years for mean cloudiness at 10 a.m.):

	Koror		Yap	
Averages	10 A.M.	6 P.M.	Mean daily	10 A.M.
Mean for period	8.5	8.6	7.4	8.4
" " January	8.7	8.6	7.2	8.3
" " February	8.5	8.5	7.1	8.3
" " March	8.3	8.6	7.0	8.4
" " April	8.2	8.3	6.8	8.0
" " May	8.4	8.8	7.1	7.8
" " June	8.1	8.6	7.5	8.4
" " July	9.0	9.2	7.9	8.8
" " August	8.6	8.8	8.1	9.2
" " September	8.5	9.0	7.8	9.0
" " October	8.4	8.4	7.5	8.4
" " November	8.5	7.9	7.3	8.0
" " December	8.6	8.1	7.5	8.4

Winds. The Western Carolines lie in the belt of alternating northeast trade winds and southwest monsoons, which divide the year into two seasons. Although there is considerable variation from year to year, the northeast trades ordinarily begin in October and prevail until May, and often until June. Gales of about two days' duration frequently develop toward the end of this period, in May, followed during the early summer months by a period of frequent calms, light and variable winds, and occasional thunderstorms and squalls. The true, Asiatic, southwest monsoon usually sets in fairly early in June on Yap, but not until July or even later in Palau. Midsummer is the season of heaviest rains. The monsoon generally lasts until October, or sometimes a little later, when the trade winds return.

Wind velocity is greatest at the height of the northeast trades between January and March; it is usually least in May, June, and September. Observations made at Koror

indicate a mean annual wind velocity of 4.3 knots, with mean monthly velocities as follows: January 5.6, February 5.5, March 5.5, April 4.4, May 3.6, June 3.0, July 4.1, August 4.3, September 3.6, October 4.3, November 3.6, and December 4.4. During the period of the northeast trades on Yap, the wind normally increases in strength during the day until about 1500, when it reaches its maximum intensity; it then abates between 1600 and 1800, and relative calm prevails from early evening until sunrise. When the wind veers to the north, it usually blows freshly through the night, often with squalls. When it veers to the east, it blows less strongly but is frequently accompanied by dirty weather, squalls, and rain.

Reports from Yap based on a four-year period of observation indicate that the month having the greatest number of days with gales is May, with an average of 2.0 such days. January, September, and December each average 1.0; February, March, and July, 0.8; October and November, 0.7; June, 0.5; April, 0.4. August, with 0.3, has the fewest days with gales. The mean annual number of days with gales is reported as 10.0

Northeasterly and easterly winds prevail to a marked degree, except at the height of the southwest monsoon. The following table gives the mean wind directions (in percentages) at Koror, based upon an indeterminate period of Japanese observations:

Averages	N	NE	E	SE	S	SW	W	NW	Calm
Mean for period	5	23	16	7	8	9	8	4	20
" " January	7	48	21	8	3	1	1	1	10
" " February	4	58	28	3	1	*	*	*	6
" " March	3	49	31	6	1	*	*	1	9
" " April	4	35	29	9	3	1	1	2	16
" " May	6	13	22	15	8	5	4	4	23
" " June	5	8	13	12	7	5	7	5	38
" " July	4	3	3	5	14	22	17	6	26
" " August	3	2	2	4	14	27	19	8	21
" " September	6	2	3	6	14	17	18	5	29
" " October	6	3	4	3	13	21	21	8	21
" " November	8	16	13	8	7	7	8	6	27
" " December	8	35	24	9	4	2	2	3	13

* Less than one-half of one per cent.

The mean wind directions at Yap during eight years of Japanese observations were as follows:

Averages	N	NE	E	SE	S	SW	W	NW	Calm
Mean for period	5	40	19	4	4	8	6	3	11
" " January	2	72	21	1	0	0	0	0	4
" " February	3	75	17	1	0	0	0	0	4
" " March	5	69	18	2	1	0	1	1	3
" " April	3	58	24	2	1	2	1	1	8
" " May	3	39	32	5	3	2	2	1	13
" " June	5	26	27	8	5	6	4	2	17
" " July	7	14	12	9	7	16	11	5	19
" " August	6	7	4	4	8	28	22	5	16
" " September	8	10	7	5	8	19	16	7	20
" " October	7	18	10	4	6	15	14	8	18
" " November	9	40	19	5	4	4	4	4	11
" " December	3	54	26	6	2	3	2	0	4

Storms. Light thunderstorms are relatively frequent throughout the year, reports from Palau indicating an average of 1.8 days with thunderstorms per month. Sharp rain squalls are common. Such storms and squalls occur most frequently from May to December. The duration of these storms is usually brief, the average being from 12 to 15 minutes. A long one may last an hour or somewhat more, but it is reported from Yap that there may often be a dozen rain squalls a day, none more than five minutes long. At Lamotrek, in 1903, storms came almost without exception from the north or east.

The Western Carolines are situated in the approximate center of the area of origin of cyclonic storms, of which typhoons are the most serious. They occur sporadically throughout the year, and sometimes do great damage. More often, however, they are in the formative stage and are not particularly destructive. Relatively mild cyclonic storms appear with greatest frequency during the months from July to November, inclusive, whereas typhoons of major destructive force have occurred oftenest in May and December. According to Japanese reports, the monthly distribution of 43 cyclonic storms, both mild and severe, in the area during the years 1934-35 was as follows:

Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
5	3	3	2	3	1	8	3	4	6	4	1

By comparison, the monthly distribution of major typhoons occurring within the Yap and Palau districts respectively during the period from 1891 to 1935, was as follows:

	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
Yap	0	0	1	1	1	1	0	0	0	0	0	3	7
Palau	0	0	1	0	2	0	0	0	0	0	3	1	7

The following is a list, doubtless incomplete, of major typhoons reported in the area:

1862, month not stated, in Palau.

1866, December, in Palau.

1902, May 17-18, in Yap.

1904, November, in the Palau district, doing the greatest damage on Pul and Merir.

1906, autumn, in Palau.

1909, March 17-18, in Palau; 126 mm. of rain fell on March 17, and 215 mm. on March 18.

1912, November 26, in Palau.

1918, month not stated, in Yap, accompanied by a tidal wave and causing great destruction.

1920, December, in Yap, causing 7 casualties and very considerable property damage.

1923, June, in Yap.

1925, December 15, in Yap, accompanied by a tidal wave, destroying 93 per cent of all the houses on the island and causing property damage estimated at ¥ 1,502,367.

1927, May, in Palau, having a wind velocity of approximately 90 miles per hour, causing damage to 80 per cent of all households, destroying property estimated at ¥ 400,000, and doing especially severe damage on Peleliu.

1928, May 28, in Palau, accompanied by a tidal wave, leveling buildings and causing damage to the estimated amount of ¥ 1,420,562.

1934, October, in the Yap district, causing no serious damage.

Observers have determined that the point of origin of typhoons in the South Seas is, in general, between 5° and 25° N. lat., and between 125° and 155° E. long. In winter these storms tend to form in the southern and eastern portions of this area, whereas in the summer they originate in the northern and western portions. Investigations have also indicated that the rate of progress of a typhoon center varies with the latitude. South of 13° N. lat. the rate of progress is relatively constant at approximately 5 or 6 knots, but farther north it increases from 6.5 knots to as much as 36 knots at 32° 30' N. lat. It has also been shown that the wind velocity in typhoons of this region varies inversely with the distance from the center of the atmospheric disturbance, as shown in the following table:

Distance from Center (nautical miles)	Average Wind Strength (Beaufort scale)
35	12
50	11
75	10
110	9
145	8
180	7
220	6
250	5

113. Geology and Topography

Geological Structure. The 23 island groups and isolated islands of the Western Carolines, when classified according to their geological structure, fall into three types:

(1) coral atolls, (2) single coral islands, and (3) complex atolls. The sole representatives of the third type are Palau and Yap. In addition, there are several submerged coral reefs, probably representing atolls in an early stage of development, which are not included herewith since they do not concern the administrator. Of these, the most important is Helen Reef, located 35 miles E of Tobi and 2° 59' N and 131° 49' E, with a small wooded islet on the northern part of its largely submerged reef.

The whole area is considered to have been formerly continental and to have subsided by steps. Probably the only surviving unsubmerged portions are those which contain plutonic rocks, namely, Palau and Yap. The islands of Yap and Palau are said to rise 3,000 meters from the ocean floor. Between Ulithi and Truk is a submarine platform, 2,500 to 3,000 meters deep and 300 miles wide, on which the intervening islands are scattered.

The coral atolls of the area are twelve in number: Eauripik, Elato (including Toas atoll), Faraulep, Ifalik, Kayangel, Lamotrek, Ngulu, Olimarao, Sorol, Ulithi (including Bulubul, Falalop, Losiep, and Pau islands and Zohhoiiyoru atoll), West Fayu, and Woleai. They consist of an irregular ring of coral built upward over time from the summit of a submarine projection. Since the coral at the edges is better fed, it grows upward more rapidly and forms a reef surrounding a shallow lagoon. Where the coral ring is exposed to heavy wave action, especially on the windward side, fragments of coral are broken off and deposited on the reef shelf, resulting eventually in the formation of low islets interspersed with reefs and occasional deep passages through which the tides flow into and out of the central lagoon. An atoll may have from one to 60 or more islets on the encircling ring. These islets are usually long, narrow, and often crescent-shaped. In relief, they normally consist of an outer beach of rubble, rarely more than six or eight feet in elevation, and a talus slope of sand and small coral fragments sloping gently downward from the head of the outer beach to the shore of the lagoon. Paralleling the outer beach, and separated from it by a partially submerged reef shelf, is usually an outer reef against which the surf breaks.

The single coral islands are nine in number: Angaur, Fais, Gaferut, Merir, Pikelot, Pul, Satawal, Sonsorol (including Fana), and Tobi. Two other single coral islands, Fana and Falalop, are included with Sonsorol and Ulithi respectively, and Ulithi also includes a detached reef with three islands. Coral islands are normally formed in the same manner as an atoll except that the encircling reef is of such small dimensions that the debris deposited from all sides has filled the center and obliterated the lagoon. Some single coral islands are exposed table reefs, consisting of foundation rocks as well as coral, gravel, and foraminiferous sand; they are generally flat on the surface but often have a boulder rim and a lower central part which occasionally contains phosphate deposits. Tobi and the two islands of Sonsorol are considered to be typical table-reef islands. Geologists differ as to whether Fais is an elevated atoll or an exposed table reef. Gaferut has been characterized as an elevated island but is more probably a flat sandbank.

Palau is a complex cluster of volcanic islands, fragmented coral atolls, and islands of limestone composition, the whole surrounded by encircling and detached reefs. The volcanic islands are Arakabesan, Babelthuap, Malakal, and probably Koror. The rest are of coralline or limestone composition. The only low island is Peleliu; the others have long narrow hills which rise to considerable heights. Yap consists of several elevated islands, with a mountainous interior, surrounded by a broad coral reef. Geologically, the islands are formed of crystalline rock with a foundation of sedimentary rock, indicating that they have emerged from the bottom of the sea. Some geologists have also reported evidences of volcanic action.

The 23 island groups are listed below in alphabetical order, with the essential geographic facts about each.

Angaur (also called Angauru, Angyaur, Ngaur, Ngeour, and N'Yaur). This coral island is situated at 6° 54' N, 134° 09' E, and is commonly classed with the Palau group to the north, from which it is separated by a channel about five and one half miles wide. Sonsorol lies 150 miles to the SW. Angaur is about two and one half miles in length (NNE-SSW) and less than two miles wide at the maximum. Broader at the northern than at the southern end, its total area is less than three square miles. The island is formed of coral limestone and is known for its phosphate deposits. Only partially surrounded by fringing reefs, it has a broken shore line with precipitous chalk cliffs along the coast. Angaur Harbor, on the western side, is an open roadstead. The island is wooded and rises 15 to 20 feet above sea level. The main settlements are along the western coast.

Eauripik (also called Aurepik, Eourypyg, Eurupig, Iuripik, Kama, Low, Yorupikku, and Yuripik). This atoll is located at 6° 41' N, 143° 06' E, 58 miles SW of Woleai and 180 miles ESE of Sorol. It is five and one half miles long (E-W) and one and one half miles wide, and narrows at both extremities. The lagoon has an area of approximately one and one half square miles. There is no passage into the lagoon, but small boats can cross

the reef at high water. The reef supports six small islands. The largest of these, Eauripik, situated at the E extremity of the atoll, is 750 yards long and 250 yards wide. Oao Island in the N, like Eauripik, is inhabited. The islets of Bekefas, Edarepe, Elangkileku, and Siteng are uninhabited, and all except Edarepe, which is awash at high tide, are covered with coconut palms.

Elato (also called Elath, Erato, Haweis, Helato, Olutai, and Ylatu). This double atoll, consisting of the separate atolls of Elato and Toas, is located at 7° 31' N, 146° 11' E, five miles W of Lamotrek and 20 miles SE of Olimarao. Elato atoll in the north is four and one half miles long (NE-SW) and slightly more than one mile in maximum width. It consists of four islets, and is divided into two approximately equal lagoons by Oletel and Kari Islands. On the E side of the atoll is an entrance to the north lagoon, which is about one and one half miles square. Elato Island, at the N end, is the largest islet, measuring 800 by 500 yards, and is flat, sandy, and covered with trees. Falipi (Falifi, Fuyariki) Island is at the S end of the atoll. Toas atoll, one mile S of Elato across open water, is 1.75 miles long (N-S) by three fourths of a mile. Its only islets are Toas, the larger, and Ulor (Uler, Uroru), both located on the SW portion of the reef and both wooded. The lagoon of Toas, with an area of about half a square mile, has a narrow entrance in the E, suitable only for small boats. Both Elato and Toas atolls are inhabited, and natives come from neighboring islands to gather wood for canoes.

Feis (also called Astrolabe, Feis, Feys, Fuhaesu, Huhaesu, Tromelin, and Woaje). This single island is located at 9° 45' N, 140° 31' E, approximately 97 miles N of Sorol and 48 miles E of Ulithi. It has an altitude of 30 feet (some sources say 60 to 65 feet). Geologists differ as to whether the island is an elevated atoll, which once had a lagoon, or an uplifted table reef. It is one and one half miles long and three quarters of a mile wide. The greater part of the shore is fringed by reefs; elsewhere the coast is of a firm stalactitic formation, with precipitous slopes, which in some places have been deeply eroded by ocean breakers. The center of the island is flat and cultivated, a large part being covered with coconut palms. The settlements are in the south.

Faraulep (also called Faraulip, Faroilap, Fattoilap, Foroilap, Furaarappu, Gardner, and Huraarappu). This coral atoll is located at 8° 36' N, 144° 33' E, 80 miles N of Ifalik and 62 miles SW of Gaferut. It is about two and one quarter miles long and one and one half miles wide, with three low, wooded islands on the S and E sides of the reef and several islets at the entrance to the lagoon. The three islands are Faraulep, the largest; Pigue (Pig, Piiku); and Eate (Ead, Yatto), the smallest and the only one uninhabited. On the S side of the atoll three narrow channels, suitable only for small boats, lead into the lagoon, which is nearly a mile across at its widest point and has an area of about one half of a square mile.

Gaferut (also called Grimes, Gurimesu, and High). This single island is located at 9° 14' N, 145° 29' E, 60 miles NE of Faraulep and 97 miles NNW of Olimarao. It is about three quarters of a mile long (NW-SE) and half a mile wide, and rises in some places to an elevation of seven feet. Low and thickly covered with mangrove trees, the island is encircled by a fringing reef which extends 600 yards NW of the N end and 500 yards SSW of the S end. A passage for small boats in the NW gives access to the small lagoon. There were no permanent inhabitants in 1935, but in 1940 there were probably residents to work the phosphate deposits.

Ifalik (also called Evalook, Faloc, Furukku, Hurukku, Ifalouk, Ifelug, Two Sisters, and Wilson). This low coral atoll is located at 7° 15' N, 144° 27' E, 81 miles S of Faraulep and 32 miles E of Woleai. The atoll is two miles in length and 1.6 miles in breadth. It has three fairly large islands: Flarik (Fararik, Feladjik, Furukku, Ifalik) in the NE, Flalap (Falalap, Furarappu, Moay) in the SE, and Ella (Warura) on the south side of the atoll. There are also two small islets in the W. The oval lagoon is about five miles in circumference and is nearly one square mile in area. It is entered by a shallow passage between Ella and Flalap. The islands are wooded and inhabited.

Kayangel (also called Kadjangle, Kajanguru, Kazyanguru, Kianguel, Kreiangel, Moore, Ngajangel, and Ngeiangel). This coral atoll is located at 8° 05' N, 134° 44' E, about 15 miles N of Babelthuap but only two miles from the northeasternmost outlying reef of the Palau group. Kayangel consists of four low islands on a coral reef: Gorak, Ngajangel, Ngarapalas, and Ngariungs. From N to S they form the eastern wall of a reef bank about two nautical miles in width. All are wooded, but Ngajangel alone is inhabited. The lagoon, which can accommodate only small craft, is entered by a passage on the W.

Lamotrek (also called Lamorsu, Lamureck, Lamutrik, Low, Namotikku, Namoohikku, Namurrek, and Swede). This coral atoll is located at 7° 28' N, 146° 23' E, 39 miles W of Satawal Island, 25 miles ESE of Olimarao, and five miles E of Elato. There are three is-

lands on the triangular reef: Falaite (Falite, Furaitei) in the W, Pugue (Buuku, Pik, Puch) in the N, and Lamotrek at the E tip. The atoll is eight miles long (NW-SE) and three and one half miles broad (N-S), and the lagoon has an area of eight square miles. Of the several entrances the best is located approximately three fourths of a mile S of Pugue. The only inhabited island, Lamotrek, is nearly 1,400 yards long (N-S) and about 800 yards wide in the swampy central portion, becoming narrower toward the N. The village is located on the lagoon in the NW. All the islands are wooded. An earthquake was reported on Lamotrek in 1902.

Merir (also called Marir, Meliel, Meriel, Meriru, Pulo Marier, and Warren Hastings). This flat, wooded coral island is located at 4° 20' N, 132° 19' E, about 29 miles SE of Pul, 65 miles S of Sonsorol, and 105 miles NE of Tobi. Surrounded by a fringing reef, it is one and one third miles long (N-S) and a quarter of a mile wide. Near the middle of the western side of the island there is said to be a low hill about 50 feet high.

Ngulu (also called Angegul, Anelul, Goulou, Kurru, Lamoliao, Lamoliork, Lamuliur, Lamuniur, Matelotas, Ngilu, Ngoli, Ngolog, Spencer Keys, and Ulu). This low coral atoll is located at 8° 18' N, 137° 29' E, 167 miles ENE of Kayangel and 59 miles SSW of Yap. It is about 19 miles long (N-S) and 12 miles wide. The lagoon is encircled by a very low and partly flooded reef in the shape of an acute-angled triangle; it has an area of more than 100 square miles, and its water is usually rough. The main reef is generally very narrow. The largest and only inhabited island is Ngulu, which is located at the S tip of the atoll and has an area of less than two square kilometers. Other islets on the southern and southwestern sides of the atoll are Jalangaschel, Letyegol, Pigaras, Reggoru, and Uatshalak. All of these are covered with vegetation and coconut palms. North and Meseran islets in the NE are very low and have fewer trees. There are a number of passages, including one on either side of Ngulu Island.

Olimarao (also called Olimario and Onomarai). This coral atoll is located at 7° 41' N, 145° 51' E, about 21 miles WNW of Elato and 95 miles SSE of Gaferut. It is about two and one third miles in length (NE-SW) and one and one half miles in breadth, and consists of two small, flat, wooded islets, Olimarao Island in the NE, is 800 yards long and 400 yards wide. Falifil (Fuaripii) in the SW is smaller. Several shallow entrances in the S give access to the lagoon, which has an area of 1.8 square miles. There are no permanent inhabitants, but natives often visit the atoll in search of tortoise shell.

Palau (also called Arrecifos, Palaos, Paleu, Pally, Paloc, Pannog, Parao, Pelew, Pelli, and Walau). The Palau Islands are located at 7° 20' N, 134° 28' E (at Koror Island). They form a long, narrow chain stretching 77 miles NNE and SSW, with a maximum width of about 20 miles. Kayangel, two miles N of the outlying reef in the NE, and Angaur, five and one half miles SW of the S point, are often classed with the Palau group, although separated in the present treatment. Palau proper consists of eight large islands, 18 smaller ones, and a large number of minute islets, all enclosed in a single reef system. The major islands from N to S are Babelthuap, Arakabesan, Koror, Aurapushekaru, Malakal, Urukthapel, Eil Malk, and Peleliu. All are wooded. The total land surface is about 171 square miles, of which more than two thirds is accounted for by Babelthuap Island. Arakabesan, Babelthuap, Koror, and probably Malakal are volcanic, whereas Aurapushekaru and all the islands S of it are of coralline or limestone formation. Peleliu alone is flat. The other southern islands have long narrow hills with steep slopes to seaward. The reef system of Palau consists of the following elements: an atoll-like series of outlying detached reefs N of Babelthuap, a fringing reef bordering the E coast of Babelthuap, a series of detached reefs continuing the latter to Peleliu, a fringing reef hugging the E, S, and W shores of Peleliu, a barrier reef flanking the entire group of islands on the W and enclosing an enormous lagoon, broad in the S and narrow in the N, and, finally, a number of fringing reefs along the shores of the islands inside or bordering the lagoon. Mild earthquakes are occasionally experienced in Palau. The larger islands of the group are individually described below:

Arakabesan (Ngarekobasang) is a small volcanic island less than two miles long and three fourths of a mile wide. It lies just NW of Koror, and the fringing reefs of the two islands are continuous. Arakabesan is hilly, covered with red earth, and well wooded in the W.

Aurapushekaru (Auluptagel, Oluksakel, Oropushakaru) is a small, irregularly shaped island with a maximum elevation of 613 feet. A long extension to the NW, forming the NE side of Malakal Harbor, gives the island a total length of about three miles.

Babelthuap (Baberudaobu, Babldaob) is the largest island in Palau. It is about 23 miles long (N-S), varies from four to eight miles in width, and covers an

area of 143 square miles. It is volcanic in origin. There are several ranges of hills, the highest having an elevation of 641 feet. The southern part of the island, where some of the hills are of chalk, is thickly wooded, but the northern half has few forests, and many of the hills are bare. Ngardok Lake in the NE is said to be approximately 1,000 yards long and 400 yards wide; from it the Enkassar or Ngardorok River flows S to the coast. There are numerous settlements, mainly on the periphery of the island.

Eil Malk (Amototi, Gogeal, Irakong, Makarakaru) lies some seven miles NE of Peleliu and just S of Urukthapel, from which it is separated by Yoo Passage. It is of coral formation and has a very irregular coastline except on the E, where there is a range of hills about 300 feet high. Schonian Harbor lies to the SW in the lagoon.

Koror (Corror, Goreor, Kororu) is a small island, deeply indented in the S, and shaped like a horseshoe. It is about three miles long and covers an area of less than three square miles. The island has many hills, apparently of volcanic formation; one of them in the S attains an elevation of 459 feet. Koror lies just SW of Babelthuap, from which it is separated by a deep and narrow channel, Ogurutaageru Passage, giving access to Koror Harbor in the NW. The town of Koror in the W is served by Station Harbor, and is connected with Malakal Harbor by an artificial channel across the narrow NW arm of Arapushekaru Island.

Malakal (Amalakell, Malaccan, Marakaru, Nanalake) is a small volcanic island, about three quarters of a mile in diameter, situated in the N central part of Malakal Harbor. Arakabesan lies to the north, with narrow Ngargol Island intervening. To the E are Aurapushekaru and Koror, and to the SW is Urukthapel. The W portion of Malakal is hilly, with a maximum elevation of 393 feet.

Peleliu (Pelelew, Periryu, Pililer, Uler) is the southwesternmost island of the Palau group. It is three miles in length (NE-SW), fertile, thickly wooded, and relatively low except for a small hill at the N end. It is composed of limestone and has precipitous chalk cliffs. Between Peleliu and Eil Malk, seven miles to the NE, lie numerous small islands.

Urukthapel (Cape, Kuapasungasu, Ngurukdapel, Ulugeang, Uruktaaburu, Uruktapi) is an island of irregular shape, more than ten miles long (NE-SW) but less than a mile in width. Its curving N end forms the SW side of Malakal Harbor. It is rocky and densely wooded, and has a maximum elevation of 587 feet.

Pikelot (also called Bigali, Biguela, Coquille, Lydia, Pigela, Pigerotto, Pigouelao, Pik, and Pyghella). This single coral island is situated at 8°05' N, 147° 38' E, about 50 miles E of West Fayu and 100 miles WNW of Puluwat in the Eastern Carolines. It is two and one half miles in length (NE-SW) and one and three quarters miles in width. It is low and covered with shrubs, and has a fringing reef but no lagoon. There are no permanent inhabitants, although natives occasionally come from other islands to hunt for turtles.

Pul (also called Anna, Bul, Bur, Current, Paolo, Pulo Anna, Pur, Puru, and Wull). This single coral island is located at 4° 40' N, 131° 58' E, 42 miles SSW of Sonsorol and 29 miles NW of Merir. Oval in shape and surrounded by a fringing reef, it is about half a mile long (NE-SW) and a quarter of a mile wide. There is a slight rise in the N, but the center is depressed and swampy. The island is thickly wooded.

Satawal (also called Sasaon, Satahual, Satowalairak, Satuwal, Seteoel, and Tucker). This single coral island is located at 7° 21' N, 147° 02' E, 47 miles SSE of West Fayu and 39 miles E of Lamotrek. It is slightly more than a mile in length (NE-SW) and about half a mile in width, and is encircled by a fringing reef. Satawal is slightly higher than the usual coral island; a ridge about eight feet high traverses the island from N to S. The E part is stony and covered with bush and coconut palms; the W is thickly wooded. In the center of the island is a fresh-water pond, said to be of artificial origin, with a diameter of about 33 feet.

Sonsorol (also called St. Andrew, San Andreas, Sonesor, Songosor, Sonseron, Sonsol, Sonsoru, and Tschontil). This single coral island is located at 5° 19' N, 132° 13' E, 150 miles SW of Angaur, 65 miles N of Merir, and 42 miles NNE of Pul. With Sonsorol is included the smaller island of Fana (Banna, Fauna, North Sonsorol), which lies just to the N across a channel 1,200 yards wide. Each island has a fringing reef. Sonsorol is a little over a mile in length (N-S) and about half a mile in width. Fana is round in shape and about half a mile in diameter. Both islands are densely wooded and have slight depressions in the center.

Sorol (also called Philip, Saraon, Sarol, Sororu, and Saraol). This coral atoll is situated at 8° 08' N, 140° 24' E, 178 miles WNW of Eauripik and 95 miles S of Fais. It is six and one half miles long (NW-SE) and one and one half miles wide. Its lagoon has an area of about two square miles, and there is a passage for small boats in the center of the S side. There are 17 low, thickly wooded islets, situated on the northern and eastern sides of the atoll, many of them connected by land at low tide. Six are said to be covered with vegetation; the others are sandbanks. Sorol, the largest and only inhabited island, is about two miles long (NW-SE) and from 75 to 400 yards wide. Its southern tip lacks vegetation.

Tobi (also called Codopuei, Johnstone, Kadogubi, Lectobie, Lord North, Nevil, Togobei, and Tokobei). This single coral island, the westernmost and southernmost of the Western Carolines, is located at 3° 01' N, 131° 11' E, 104 miles SW of Merir Island. Triangular in shape, it is less than one mile long (N-S) and half as wide. It rises very little above sea level, and is surrounded by a coral reef. The island is composed of alluvial sand and shell fragments over a basis of coral and solid sand. It is fringed with cocoanut palms, and has deciduous trees in the interior. In the north is an arid sandy plain.

Ulithi (also called Mackenzie, Mogmog, Mogumogu, Mokomok, Ouluthy, Uluti, and Urushi). This group of islands is situated at 10°05' 30" N, 139° 43' 15" E (on Mogmog Island), 85 miles ENE of Yap and about 45 miles W of Fais. It consists of four elements: the main atoll of Ulithi in the W, the separate island of Falalop off the NE point of the island, a small detached reef with several islets lying E of the main atoll, and Zohhoiiyoru Bank, an incomplete atoll, in the extreme E. The atoll of Ulithi proper is 19 miles long (N-S) and about 10 miles in maximum breadth. Its reef supports 30 islets, all small, low, and wooded, and has many breaks and entrances. The principal islet, Mogmog in the N, is about half a mile long and has a swampy depression in the interior. Other islets which have at some time been inhabited include Asor, Fassarai, Feitabul, Lossau, Mangejang, and Pigelelel. The isolated island of Falalop (Fararappu), with its own fringing reef, lies across a mile of open water from Asor Island in the NE of the main atoll. It is about half a mile in length and has a swampy depression in the interior. Five miles SE of Falalop and directly E of the central section of Ulithi atoll lies a detached reef with three islets, Bulubul, Losiep, and Pau. E and SE of this reef, and separated from it by a clear channel three miles wide, lies Zohhoiiyoru Bank, an imperfectly formed and largely submerged atoll 12 miles in length (N-S) and four miles wide. At its northern end is an exposed reef three miles long, supporting the islets of Ear (Iar, Tar) and Gielap (Hilap, Khielap, Kilap).

West Fayu (also called Faiyao, Fajahu, Faliau, Hujyao, West Faiu). This coral atoll is located at 8°05' N, 146° 44' E, 46 miles NNW of Satawal Island and 54 miles W of Pikelot Island. Trowel-shaped, the atoll is about four miles long (E-W) and one and one half miles across at the widest part. Its only islet, West Fayu, is about 300 yards long and 275 yards wide. From it radiate three reefs--one to the E, one to the S, and one to the W. The W reef curves S and E to inclose a lagoon, leaving a single passage in the SE. The islet is thickly wooded and uninhabited, though often visited by natives from Satawal.

Woleai (also called Anangai, Mereyon, Oleai, Ouleyai, Thirteen Islands, Ulea, Ulie, and Wolea). This coral atoll is situated at 7° 22' 19" N, 143° 54' 20" E (on Woleai Island), approximately 60 miles NE of Eauripik and 32 miles W of Ifalik. It is about five and one half miles long (E-W), three miles wide, and 15 miles in circumference. It provides adequate anchorage for all types of ships and for seaplanes in a strategic location half way between Palau and Truk. The atoll is incomplete, consisting of an eastern and a larger western lagoon, each open on the S. There are also good passages in the N and W. The reef supports 23 islets, the most important of which are Raur, Paliau, and, Woleai in the E, Mariaon, Tagaulap, Jalangigereil, Farsiles and Saliap in the N, and Utagal and Falalis in the W. Woleai (Flalap, Fararappu, Mereyon), the largest islet, is triangular in shape. Raur was of considerable importance until it was devastated by the typhoon of 1907.

Yap (also called Eap, Guap, Heap, Jap, Ouap, Uap, Wuap, and Yappu). This cluster of high islands is located at 9° 30' N, 138° 08' E (at Donitch Island), 60 miles NNE of Ngulu and 85 miles WSW of Ulithi. The group is composed of four large and ten small islands, completely surrounded by a coral reef which extends nearly a mile offshore and has several openings. Yap as a whole has a length of 16 miles (NE-SW), and a maximum breadth of six miles, and a total area of approximately 83 square miles. It differs geologically from the other islands of the Western Carolines, being composed of older crystalline rocks, some of which have been eroded into laterite, with a foundation of sedimentary rocks. Some geologists allege that there is evidence of volcanic rock in the E. Subsidence has separated the islands from the surrounding coral reef. Earthquakes occur several times a year, but are so slight that people rarely notice them. Fjord-like Tom-

il Harbor, which breaches the reef in the SE and runs due N for nearly four miles, is an excellent port. West of it lies Rull (Ruuru), the largest of the four principal islands. Rull is about 10 miles long (N-S) and has a maximum width of about three miles. It is deeply indented by bays and has a mountainous core. The Burra Chain, consisting of bare, brush-covered hills rising to an altitude of 820 to 984 feet, occupies the entire northern half of the island. The southern half is a fertile plain, with extensive swamps in the interior and foothills in the N. East of Rull is Tomil (Tomiru) Island, which consists of a treeless central plateau surrounded by a low, fertile, wooded coastal strip from one to three miles broad. The two islands are separated by Tomil Harbor and its northern extension, Tegeren Canal, which has a depth of only one foot and is navigable by boats only at high water. The northern islands of Map (Mappu) and Rumung (Rumungu) are high and allegedly partly volcanic in origin. Map lies N of Tomil, from which it is separated by a narrow channel navigable by small boats. Rumung lies NW of Map across another narrow channel, which is easily fordable at low tide. In the N or inner part of Tomil Harbor are three small islands, Bi (Obi), Pekel (Impakel, Pekeru), and Tarang (Tarangu). South of them lie three other small islands. One is called Donitch (Engnoch, Engunosu). The other two, joined to one another and to the island of Rull by a causeway, are collectively called Blelatsch.

114. Hydrography

Sources. Detailed hydrographic information is contained in "Sailing Directions for the Pacific Islands," Volume I (H.O. 165), pages 539 to 555, in "Supplemental Sailing Directions" (O.N.I. 29 and 31), and on Charts 5417, 5418, 5421, 5423, 5425, and 5426 of the United States Hydrographic Office. Since these sources are widely available, no attempt will be made to restate the information here.

Tides and Currents. In the islands of the Western Carolines from Ulithi west, there is slight inequality in the tides, except at full tide and at the changing of tides in spring and fall. From Sorol and Fais to the east, semi-diurnal tides prevail in the spring and fall syzygies, but at other times the daily inequality in the time and height of tides is considerable. When the moon is farthest from the equator, there is only a single tide each day in some places. In consequence of winds and obstructing reefs and islands, as well as of the peculiar tides, the currents in this area are likewise irregular.

Inland Waters. Ngardok Lake, a fairly large body of fresh water, is situated in northeastern Babelthuap in the Palau group. A small river, called Enkassar or Ngardorok, flows SE from Lake Ngardok to the east coast. There are many sporadic streams on the larger islands of Palau and Yap. A fresh-water pool is reported on Kayangel. In the center of Satawal Island is a small fresh-water pond, said to be of artificial origin. Lagoons, often providing excellent anchorage, are found in the various coral atolls and within the coral reefs enclosing Palau (see 113).

12. RESOURCES

121. Water Supply

Natural Sources. The only fresh-water lake reported for the Western Carolines is one near the center of Babelthuap. There is a fresh-water pool on Kayangel. On Ifalik, Ulithi, and Woleai there are a few small ponds used by the natives, but the water is usually polluted and unsafe. Flowing streams do not exist on the coral islands, but there are a few rather sporadic ones on Yap and a considerable number on several islands of the Palau group, particularly Arakabesan, Babelthuap, Koror, and Malakal. Good springs also exist on the same islands, especially on Malakal. With the above-mentioned exceptions, there are no natural sources of drinking water other than rain, which must be artificially collected and stored.

Artificial Sources. On the larger coral islets rainwater accumulates in the porous subsoil and forms lenses of fresh water, often rendered brackish by seepage of sea water. Pits and wells have been dug to tap this source on a number of the islands, but this method of obtaining water is generally not satisfactory since the water is usually brackish and often impure. Wells are, however, both feasible and common in the large volcanic islands, especially in Palau. Water is also sometimes available in irrigation ditches on some of the larger islands.

In Palau a considerable part of the water supply is provided by springs, streams, and wells. The water from such sources is stored in cisterns and tanks. On Malakal and Koror it is piped from these storage places to piers and transferred to lighters, which then distribute it to the neighboring islands. Even this relatively good supply is heavily supplemented by the collection of rainwater. On all the other islands of the Western Carolines the inhabitants obtain most of their drinking water by collecting rainwater from house roofs and the trunks of slanting coconut trees in cisterns, tanks, pits, trenches, and wooden receptacles.

In order to improve the water supply the South Seas Government has, since 1922, granted subsidies to communities and individuals who construct wells, cisterns, or water tanks. Official reports indicate the construction of 51 wells, tanks, and cisterns in the Palau district in the years 1922-30 inclusive, and the addition of five more in 1931. In the Yap district, 21 were constructed during the former period and 15 were added in 1931. The Japanese have also encouraged the adoption of metal roofing materials to facilitate the collection of rainwater, and it is reported that the police require monthly cleaning of the iron roofs and metal, wooden, and palm-leaf conduits. The government has also attempted to promote the establishment of better public baths and washing places, granting subsidies to communities for that purpose (see 256). The South Seas Government has expended large sums annually for the construction of water works on Palau, the appropriation for 1940 amounting to ¥ 160,000 (see 281).

Specific information on the water supply of particular islands is given as follows:

Angaur: good collected rainwater; impure and brackish well water.
Eauripik: Rainwater probably collected in cisterns.
Elato: rainwater collected; wells, if sunk, should yield good water.
Fais: small amount of rainwater collected; a limited quantity of probably poor well water is available.
Faraulep: bad, brackish well water; a small amount of rainwater collected.
Gaferut: fresh water unavailable.
Ifalik: impure water from central public pond is used by natives; probably some rainwater is collected.
Kayangel: a well yielding good water is reported; rainwater is collected.
Lamotrek: collected rainwater; well water is suitable for drinking if boiled and filtered; the well water at Rariratsupu and Raremore is said to be unsafe
Merir: rainwater stored by natives.
Ngulu: collected rainwater; ponds contain impure water; brackish and impure water is obtained from a few wells.
Olimarao: uninhabited; rainwater could probably be collected.
Palau: water supply discussed by individual islands below.
Arakabesan: river water; good spring water; rainwater also collected.
Babelthuap: good streams in southern part of the island; two large water tanks at Melekeiok village; many good wells, including one at the Marukigu Public School.
Eil Malk: poor water supply; rainwater probably collected.

Koror: collected rainwater; a number of wells yield potable water having some odor; good spring water and stream water; considerable storage facilities exist, but their capacity is not known; water is piped from storage tanks to pier for transfer to lighters; watering places are located at Ngaturur and Koror village.

Malakal: good, clear running water in streams; good well water is found on the east side of the island; there is considerable storage in tanks and rock pools, but their capacity is not known; this island is the principal center of water supply (by lighter) to the other islands of Palau.

Peleliu: collected rainwater; there are a few water holes and several swamps; 30 catchment tanks are reported to be located between the barracks on the east central part of the island.

Pikelot: uninhabited; rainwater could probably be collected.

Pul: rainwater is collected and stored in cisterns.

Satawal: rainwater collected in very limited quantities.

Sonsorol: collected rainwater; the water of the three known wells is salty and not suitable for drinking.

Sorol: rainwater is collected in small quantities.

Tobi: rainwater is available only in limited quantity; there are no wells in the settlements, but some are reported inland.

Ulithi: ponds and wells at Asor, Fuarartsupu, Mogmog, Falalop, Lam, and Pigelelel contain water which is used by the natives but is impure; good water could be obtained from wells if properly located and sunk.

West Fayu: uninhabitated; rainwater could be collected.

Woleai: collected rainwater; a number of ponds are used by natives, but the water therefrom is impure and requires boiling; well water is brackish; there is some fresh well water on Paliau.

Yap: the water supply is generally poor; there is running water in ditches and streams, but it usually requires filtering and is often impure; the supply of flowing water is usually abundant, but it fluctuates greatly according to the rains, since the fluvial system is not extensive; inland there are extensive swamps; 15 known wells are reported, but their water is not good; there are said to be deep wells in the flat country south of Nimegil; if wells were sunk near the island's center, they should yield good fresh water; most of the water used for drinking purposes is rainwater collected in cisterns and tanks; there is a large water tank northwest of the Branch Government office; good drinking water can be obtained at the coal wharf on Tarang.

Adequacy of Water Supply. Except on the larger islands of Palau, the natural and artificial sources of water are barely sufficient for the normal population. On Yap and the coral islands the supply of good water presents a problem even in ordinary times, and if cisterns and tanks were destroyed by bombing or demolition a critical situation might easily develop.

122. Soils

Coralline Soils. On the coral atolls and islands, which include all of the Western Carolines except Yap and Arakabesan, Babelthuap, and Malakal in Palau, the subsoil consists of lime slabs, porous coral fragments, shells, and coral sand. Over this lies a shallow topsoil of fine coral sand and of humus formed from decayed vegetable and animal matter. The ground is usually quite porous, and its fertility depends chiefly upon the depth of the humus layer, which in most cases is very thin. The single coral islands, such as Caferut, Pikelot, Satawal, and Sonsorol, usually possess somewhat better soils than do the coral atolls. Satawal, in particular, is reported to have a fairly fertile soil cover on its western side, and Sonsorol is said to have a humus layer sufficient to permit the planting of turmeric. Coconut palms flourish on coralline soils, and taro does well where there are deep, humus-filled marshes. In general, however, coral islands are greatly inferior in soil fertility to those of sedimentary rock or volcanic origin.

Soils of Sedimentary Rock Formation. Yap is the only island in Micronesia which is not primarily of either volcanic or coral formation. It is formed basically of sedimentary rock, presumably by the emergence of the sea bottom. An elevated island (actually four islands separated by long channels) surrounded by a broad coral reef, Yap is mountainous in the central part and hilly in the northeast. Geologically it is composed chiefly of actinolite schists, amphibolite schists, and talc schists (slate), and its soil is much richer than that of the coral islands and atolls, although for the most part it has only a thin top layer of humus. Vegetation in the mountains is very sparse, since the heavy rains wash down large amounts of soil. In the valleys and coastal regions of the southwestern side, however, the soil is deep, black, and rich, and it supports every

kind of tropical fruit and vegetation in abundance. To prevent the rich topsoil and humus from being washed away by tropical rains, attempts at afforestation have recently been made on some of the slopes. Rich soil from Yap, it is reported, has actually been transported by ship to some of the low coral atolls to improve their cultivation, but erosion of the soil thus transported presents a problem which has not yet been solved by the construction of adequate drainage systems.

Volcanic Soils. The islands of Arakabesan, Babelthuap, and Malakal in Palau appear to be of volcanic origin, for they are largely composed of basalt, are covered with red earth, and are generally higher than the other islands. The soil, which is the product of decomposed volcanic rocks overlaid with humus and which carries, in some localities, a considerable quantity of clay, is intrinsically much more fertile than the coralline soils of the atolls, but erosion has removed much of the topsoil from the slopes and hilly portions, which are characterized chiefly by their cover of grasses and lack of trees. In the valleys, hollows, and stream beds, however, the soil is very rich, vegetation is luxuriant, and uncultivated areas are nearly impenetrable jungle. Nearer the shore there is usually a broad border of cultivated land composed of fertile volcanic soil, generally red in color. There is much clay, which is particularly well suited to the cultivation of taro. Volcanic soil contains little limestone, and the consequent deficiency of calcium and tendency toward acidity are said to account for the fact that coconut palms grow poorly and slowly on it. Soil fertility in Palau is reported to have been greatly increased by the use of potash as a fertilizer.

123. Minerals

Phosphates. Deposits of phosphates constitute by far the most important exploited mineral resource of the Western Carolines (see 324). The most abundant phosphorite deposits in the area are located on Angaur, the principal excavations being at Gabayanga in the north-central part of the island. These deposits are owned and exploited by the Nanyo Takushoku Kaisha (see 327). They are said to consist in part of a very high grade of ore, yielding as high as 39 per cent of phosphorus pentoxide. The explored stratum of the main deposit is reported to have a thickness of from three to six meters. According to 1940 estimates, high-grade phosphate reserves on Angaur amounted to 1,650,000 metric tons, while low-grade reserves were thought to amount to 5,000,000 metric tons.

Fais also has deposits of phosphorite, likewise owned by the Nanyo Takushoku Kaisha. The reserves of this island were estimated in 1940 to amount to 500,000 metric tons. The ore is reported to be of high grade, with a calcium phosphate content running as high as 80 per cent. The same company is said to own further deposits on Sonsorol and Pul, but their quantity is probably not great, and their quality is unreported. The Nanyo Kohatsu Kaisha owns phosphate deposits at Asais on Peleliu, reported to resemble those of Angaur in quality, as well as deposits of similar grade on the island of Tobi. Both of these sources are said to be nearly exhausted. In 1940 the Peleliu reserves were estimated to amount to only 40,000 metric tons, and those on Tobi to only 24,000 metric tons. A deposit on Gaferut is owned by the Nanyo Boeki Kaisha.

Aluminum. Deposits of aluminum ore in the form of laterite are located on Babelthuap and Yap, those on the former island being the more extensive and important. They are exploited by the Nanyo Aruminyumu Kogyo Kaisha (see 327). It is thought that additional deposits probably exist on other islands of the Palau group.

Iron. Deposits of iron ore of unreported quantity, type, and grade are located on the island of Yap. They are owned and worked by the Nanyo Aruminumu Kogyo Kaisha.

Manganese. Deposits of manganese ore of undisclosed quality and extent are located in the northern part of Babelthuap Island in Palau.

Asbestos. A small deposit of asbestos, owned by the Nanyo Aruminyumu Kogyo Kaisha, exists on Yap.

Coal. An earthy bituminous coal is found and mined in the southern part of Babelthuap Island in Palau. Deposits of brownish "wood coal," or lignite, exist in western Babelthuap.

Fire Clay. A deposit of fire clay, reported to be owned by Morishige Sakugawa, is located at Nerasaka in Palau. Other deposits probably exist on a number of the islands of the Palau group.

Stone. Considerable quantities of stone, mainly basalt, are available on Babelthuap and the other northern islands of Palau. Coral rock, suitable for road construction, is found in nearly all of the islands and atolls of the Western Carolines.

Trees and Shrubs. The high islands of Palau and Yap support a heavy cover of vegetation with the exception of their higher hills, slopes, and peaks, which are covered only with grass, scattered shrubs, and a few other plants such as Nepenthes. Mangrove swamps are common along the coasts and the lower courses of the streams, although some stretches of the shore consist of flat, sandy beach covered with grasses and creeping vines. Palms thrive best on drier portions of the coastal lowlands. The forests of the interior contain hardwoods, heavy growths of bamboo, tree ferns, and diverse other species, and in places are rendered almost impenetrable by dense thickets, briars, and climbing and creeping vines. The vegetation is usually densest in the southern or southwestern parts of these islands.

The forest cover on the coral islands and atolls is, by comparison, much less dense, and is usually quite scant and poor. The shores are fringed by littoral shrubs and grasses, although even these are often absent, while the interior is dominated by coconut and betel palms, breadfruit, and pandanus trees. These trees, together with the banana and the papaya, furnish an important part of the native food supply (see 311). Coconut palms generally thrive very much better on the low, flat, coral islands than on the higher ones; they are reported to be especially numerous on Eauripik, Ifalik, Lamotrek, Pikelot, Sorol, and Ulithi.

German and Japanese botanists have reported a very considerable number of botanical species for the Western Carolines. Since a full enumeration is impossible here, an attempt will be made to list only the reported trees and shrubs which are or may prove to be of economic importance. These, moreover, will be listed only by genus, since a single genus usually includes numerous distinct species. The low islands show much less variety than the high islands. The genera of trees and shrubs reported for at least some of the coral atolls and islands of the Western Carolines include the following: Artocarpus (breadfruit), Avicennia, Bambusa (bamboo), Barringtonia, Calophyllum, Carica (papaya), Citrus (orange and lemon), Cocos (coconut palm), Crystosperma, Eugenia, Ficus, Hibiscus, Musa (banana), Pandanus, Piper, Premna, Saccharum (sugar cane), and Thespesia.

The following genera are reported only for one or more of the high islands (Palau or Yap) although some of them doubtless also occur on at least some of the coral islands and atolls: Acacia, Aglaia, Amaracarpus, Anacardium (cashew), Anacolosa, Anona, Areca, Asimina (pawpaw), Baerlagiodendron, Bridelia, Broussonetia (paper mulberry), Bruguiera, Buchanania, Caesalpinia, Canthium, Carapa, Celtis, Cerbera, Ceriops, Cleidion, Clitandropsis, Cleisthanthus, Codiaeum, Colubrina, Columbia, Convulvulus, Cordia, Cordyline, Crotalaria, Croton, Cyathea, Cycas (sago palm), Cynometra, Cyperacae, Cyrtandra, Desmodium, Dracaena, Drypetes, Elaeocarpus, Freycinetia, Garcinia, Gomphandra, Gossypium (cotton), Hanguana, Helicia, Heritiera, Horsfieldia, Hydyotis, Inocarpus (Polynesian chestnut), Ixora, Jambosa, Kentochrosia, Leea, Lindernia, Lumnitzera, Maba, Macaranga, Mangifera (mango), Manilkara, Medinilla, Meryta, Metrosideros, Micromelum, Morinda, Myristica, Oxytenanthera, Palaoea, Pangium, Phaleria, Phyllanthus, Pipturus, Pithecellobium, Polyalthia, Polygala, Pseudopinanga, Psychotria, Pterocarpus, Rauwolfia, Rhus, Rinorea, Sassafras (wild sarsaparilla), Scyphiphora, Semecarpus, Serianthes, Sideroxylon, Sonneratia, Sterculia, Styrax, Tabernaemontana, Terminalia, Timonius, Trichospermum, Tristellateia, Tylecarpus, and Ventillago. There is also a tall variety of the wild ginger tree of the Zingiberaceae family, not otherwise identified.

Other Land Plants. Lesser plants are too numerous to list. They include many species of ferns, fungi, gourds, herbs, lianas, and orchids. Reeds and tall grasses fringe the streams in swampy places. Plants bearing flowers and edible berries are scarce on the atolls and low islands, but are relatively numerous in Yap and Palau. Among food plants the most important, other than the fruit trees mentioned above are several plants with nutritious roots, especially Colocasia (taro), Dioscorea (yam), Ipomoea (sweet potato), Manihot (manioc or cassava), and Tacca (arrowroot). Other plants having economic value are Zea mays (maize), Ananas (pineapple), Cucurbita (squash and pumpkin), Curcuma (turmeric), Cassia, Salomonia, Citrullus (watermelon), and Parinarium (varnish-nut bush). For other agricultural products, particularly those imported by the Japanese, see 311.

Dangerous and Poisonous Plants. Some of the trees, shrubs and other plants offer danger to man. The Amaral nettle (Urticaceae family) found on Yap, has a fiery sting. The tree nettle, Laportea, has sharp hairs on its leaves and stalks which cause painful smarting burns on contact with the skin. Although not specifically reported from the area, this nettle is widely distributed throughout the Pacific and is probably present in the Western Carolines. Semecarpus acts like poison ivy and poison oak, to which it is related, in causing bad skin eruptions on contact. Cerbera lactaria is a tree, the leaves, bark, and fruit of which contain a deadly poison. Pangium is a tree with poisonous seeds. Notice should be taken of the fact that several of the edible tubers, particularly the bulb yam (Dioscorea bulbifera), the wild yam (Dioscorea hispida), bitter manioc (Manihot

exculenta), and Polynesian arrowroot (Tacca leontopetaloides), are poisonous in their raw state. Since they are often impossible to distinguish from non-poisonous varieties, they should all be properly and carefully prepared and cooked before eating.

There are also a number of plants, including trees and vines, whose parts contain poisons and are used in catching fish by poisoning or stupefaction. Derris, a vine, whose crushed roots are thrown into the water, is the most potent. Callicarpa and the mashed seeds of Barringtonia asiatica are also similarly used. The crushed seeds of Croton tiglium (croton oil plant) act as an effective fish poison and also as a violent and very dangerous purgative to man.

Marine Plants. The marine flora of the Western Carolines is practically identical with that of other Pacific islands of the same latitude. Near the shore it consists very largely of salt-water bush, ferns, sea grasses, mosses, and mangrove roots, as well as a considerable variety of seaweeds.

125. Fauna

Land Mammals. The only land mammals indigenous to the Western Carolines are the rat, and the bat, especially the fruit bat or so-called "flying fox." These animals are found everywhere within the area. Others, all introduced, include numerous goats, pigs, cats, and dogs. The pigs are mainly small, black, and of inferior stock. A few deer, cattle, and water buffaloes have also been introduced. For animal husbandry see 312.

Reptiles. Reptiles are considerably more numerous than in the Eastern Carolines. They are mainly confined, however, to Palau. Here, especially among the mangrove swamps on the west coast, are found the only crocodiles reported for the mandated islands. Five separate species of lizards have been identified. The most common is the monitor lizard (Hydrosaurus marmoratus), which attains a length of four or five feet. Geckos are also numerous. The horned frog (Cerastes) is found in the valleys of the interior of the larger islands. There are no snakes on Yap or the coral atolls, but two unidentified species are reported for Palau. There are two species of sea turtles.

Insects. In general insects are very numerous. Houseflies are common and mosquitoes are found everywhere, although Anopheles appears to be absent. Head lice are widespread, but there are said to be very few fleas. Other insects reported for the area include ants, plant lice, ticks, beetles, butterflies, grasshoppers, dragonflies, spiders, centipedes, scorpions, moths, fireflies, leaf hoppers, leaf miners, weevils, worms, corn-borers, scale insects (coccids), sand flies, millipedes, and mites. The islands of the Palau group in particular have a large variety of insect pests, although flies, mites, and mosquitoes are very numerous and troublesome on the atolls.

Insects which are injurious to man are fairly common. Blood-suckers which cause itching and dermatitis are somewhat restricted in species, but include mosquitoes, gnats, tropical bedbugs, ticks, and a red bug of the Trombidiidae family, which is widespread throughout the area. Mosquitoes are of both the nocturnal (Culex) and diurnal (Aedes aegypti and A. albopictus) varieties, and breed prolifically in mangrove swamps, Nepenthe's pitchers, small pools, water-filled coconut husks, and every other sort of water catcher. Insects which sting or bite, depositing poison and thus causing pain, severe itching, or dermatitis, include centipedes (Scolopendra), scorpions (Hormurus), and four species of wasps. There are reported to be no stinging ants, although there are three widespread varieties of biting ants: the large black needle ants (Odontomachus), the small red biting ant (Solenopsis), and the South Sea giant red ants (Camponotus). The most common insects which cause itching and dermatitis by exretions or body fluids are the lamp-bug beetle of the Oedemeridae family and the giant myriapods or millepedes (Spiroboloideae), which discharge a dark brown offensive-smelling liquid which burns on contact with the skin. The insects harmful to man are found mainly in Palau. For information regarding disease-carrying insects see 251.

Birds. Among the more important sea and shore birds are the albatross, curlew, duck, frigate bird, golden plover, gull, heron, kingfisher, and snipe. Although not specifically reported for the area, the booby gannet, courser, noddy, pelican, sandpiper, tattler, tern, and tropic bird are probably also found. Fruit pigeons and jungle fowl are numerous on nearly all the islands. Among the land birds found, mainly on the high islands of Yap and Palau, are the chimney swallow, cuckoo, domestic swallow, dove, falcon, finch, flycatcher, ground pigeon, hummingbird, rail, sea swallow, starling, and woodcock. The Sylvia syrinx, a warbler, is found in the bush on all the larger islands, while the white-eye and the whitethroat are reported from Palau only. Other birds not specifically reported but probably present are the horned owl, nightingale, parrot, reed warbler, and sunbird.

Fish. The marine fauna of the Western Carolines is very similar to that of the other South Sea Islands in the same latitude. Hundreds of species of lagoon and deep-sea fish have been reported, including barracuda, the poisonous bladder fish, bonito, carp, eel, flatfish, flying fish, garfish, grouper, herring, jewfish, moray, mullet, poison fish, ray, sea bass, sea bream, serrano, shark, sheepshead, surgeon fish, swordfish, tiger fish, and tunny. Other species probably to be found but not reported from the area include blenny, butterfly fish, cardinal fish, damselfish, dorado, flying gurnard, globefish, halfbeak, needlefish, porcupine fish, snapper, and squirrel fish. For fishing, see 313.

Shellfish. Crustacea and molluscs abound on the reefs and in the lagoons. Among those reported are clams, cockles, cowries, crabs, crawfish, lobsters, pearl oysters, sea snails, shrimps, and whelks. Land snails are common, and several species of land crabs are also present.

Other Marine Fauna. Of the sea mammals, porpoises are numerous throughout the area, whales were formerly common and are still sometimes caught, and dugong (sea cows), though now relatively scarce, were formerly very numerous in Palau and constituted an important source of food and item of commerce. Trepang (sea slugs) are found seasonally in large numbers, especially in the western part of the area. Other lower forms of marine life include jellyfish, octopus, sea urchins, squid, starfish, and many others. Coral polyps are extremely numerous. The only sizable fresh-water lake within the area, Lake Ngardok on Babelthuap Island in Palau, does not support much plankton--only a few diatoms and duckweeds, somewhat more numerous protozoa and potatoria, and a high proportion of hairy caterpillars (Gymnodinium).

126. Major Facilities

Installations. The principal installations in the Western Carolines are docks, ship berths, and wharves (see 294), airfields and seaplane bases (see 293), radio stations (see 273), telephone, telegraph, and cable stations (see 272), phosphate mines and loading facilities (see 324), electric power plants (see 284), fish products factories (see 313), water works (see 281), coal depots, warehouses, and other storage facilities (see 295), lighthouses and beacons (see 294), and roads, causeways, and bridges (see 291).

13. HISTORY

131. Discovery and Early Contacts

Prehistory. The evidence of archeology, language, and physical and cultural characteristics indicates that the western Carolines were originally peopled by the same wave of migration from Indonesia that settled other parts of Micronesia, namely, the Marianas, the Eastern Carolines, the Marshalls, and the Gilbert Islands. Subsequent to this original occupation, the various Micronesian peoples appear to have undergone a normal process of cultural evolution and differentiation, producing the regional differences observable today. Impressive archeological remains of stone pillars on Palau, and of embankments, terraces, stone-paved roads, and stone platforms, graves, and fish-weirs on Yap, which led certain early theorists to postulate a former period of higher civilization, are now known to have been produced by the recent ancestors of the present population.

The principal prehistoric complication concerns the migration of the Polynesian peoples into the remoter parts of the Pacific. It is now believed that the Polynesians moved eastward into the Pacific by way of the Micronesian islands about 1200 A.D. They may well have represented the first part of the wave which later brought the Micronesians themselves into the area, although they may have found the Micronesians already in possession and passed on to the remoter unoccupied islands. It is clear, however, that the Polynesians, though resembling the Micronesians in many respects, differ appreciably from them in language and culture, and that the Micronesians show more admixture with Melanesian and Malayan blood and exhibit more recent cultural borrowings from the Philippines and the East Indies than do the Polynesians.

The inhabitants of the southwestern islands of the Palau district, especially Tobi, show presumptive physical traces, and a few possible cultural evidences, of contact with the Papuan natives of New Guinea.

Discovery and Exploration. The Western Carolines appear to have been discovered in 1526 by a Portuguese captain, Diego da Rocha, who sighted Yap and Ulithi on an exploratory voyage from the Moluccas undertaken five years after Magellan's discovery of the Marianas. During the next century and a half the only visitors to the area, except for a voyage by Sir Francis Drake in 1588, were Spaniards. Alvaro de Saavedra, sailing in search of Magellan, rediscovered Yap and Ulithi in 1528. Ruiz Lopez de Villalobos, in 1543, sighted Yap and discovered Palau and other islands. Other Spanish explorers visited the area, but Spain made no attempt to establish trade, colonies, or missions in the Western Carolines during either the sixteenth or the seventeenth centuries. Knowledge of the islands increased rapidly during the late eighteenth and early nineteenth centuries in consequence of visits by traders and explorers of various nationalities, especially the French explorer Duperrey, the Spaniard Don Luis de Torres, and the Russian scientist Lütke. A probably incomplete list of the discoverers and principal early explorers of the various islands and atolls is given below:

Angaur: probably discovered by early Spanish explorers, possibly Villalobos (1543), and doubtless visited by English traders, but not specifically mentioned until late in the nineteenth century.

Eauripik: discovered by Lütke (1828), though frequently referred to earlier on the basis of information from natives.

Elato: discovered by the Englishman James Wilson (1797).

Fais: discovered by Villalobos (1543); visited by de Tromelin (1828); tentatively mapped by Lütke (1828).

Faraulep: probably discovered by the Spaniard Lazeano (1686); sighted by Rodriguez (1696); visited by de Torres (1804) and Lütke (1828).

Gaferut: no information.

Ifalik: discovered by Wilson (1797); visited by Lütke (1828).

Lamotrek: discovered by Wilson (1797).

Kayangel: discovered by the British trader John Meares (1788); investigated by Semper (1862) and Kubary (1871).

Merir: discovered by Captain John Payne (1769); visited by Hastings (1781) and by Foulkes and Dorin (1789); sighted by the Spanish surveyor Malaspina (1792).

Ngulu: possibly discovered by Villalobos (1543); probably sighted by the Spaniard Legazpi (1565); sighted by Sir Francis Drake (1579); visited by the Dutchman Schapenham (1625), the Spaniard Lazeano (1686), and the Englishman Ranier (1796).

Olimarao: discovered by Lütke (1828).

Palau: discovered by Villalobos (1543); rediscovered by the Spaniard de Padilla (1710); the scene of British activity under Captains Henry Wilson (1783), John McCluer (1790-94), and James Wilson (1797); frequently visited by Spanish traders for trepang (1800-30); the scene of violent mercantile enterprise by the British adventurer Cheyne (1843-67) and the Irish trader O'Keefe (1872-80), both ending in punitive visits by British warships.

Pikelot: discovered by the French explorer Duperrey (1824).

Pul: discovered by the English trader Dewar (1761); sketched by Carteret (1767); repeatedly sighted and reported thereafter, but not actually visited again until late in the nineteenth century.

Satawal: discovered by James Wilson (1797).

Sonsorol: discovered by de Padilla (1710); visited by O'Keefe (1885); investigated by Kubary (1885).

Sorol: discovered by the Spaniard Alonso de Arellano (1564); probably sighted by Drake (1588); first described by the Englishman Hunter (1791); frequently visited by whalers and traders in the nineteenth century.

Tobi: discovered by Rogers (1710); visited by Carteret (1767); sighted by the Spanish pilot Felipe Thompson (1773); visited by the Englishman Douglas (1788) and Dorin (1789); the scene of the captivity of American seamen (1832).

Ulithi: discovered by the Portuguese explorer da Rocha (1526); sighted by Saavedra (1528), Villalobos (1543), and Bernardo de Egui y Zabalaga (1712); scene of an ill-fated Spanish effort at colonization and missionization (1731-33); visited by Lütke (1828) and by numerous whalers and traders.

West Fayu: discovered by Lütke (1828).

Woleai: discovered by James Wilson (1797); visited by Captain Samuel Bell of Boston (1804); studied by Luis de Torres (1804); visited by Lütke (1828) and Cheyne (1844).

Yap: discovered by da Rocha (1526); visited by Saavedra (1528) and Villalobos (1543); rediscovered by Lazeano (1686), who called the island Carolina, whence the name of the archipelago; visited by Bernardo de Egui y Zabalaga (1712); little known until described by Cheyne, Kubary, O'Keefe, and Tetens in the nineteenth century.

Early Contacts with Europeans. The contacts of the natives with the early Portuguese and Spanish explorers were exceedingly slight. Abortive attempts were made by the Spaniards to missionize Sonsorol in 1710 and Ulithi in 1731, but in both cases the missionaries were slain (see 134). Discouraged, the Spaniards withdrew and did not again become active in the Western Carolines until late in the nineteenth century (see 132).

The first intensive contacts of the natives with Europeans were with British merchants engaged in the China trade. In 1783 a schooner of the East India Company, outward bound from Macao under the command of Captain Henry Wilson, was grounded on a reef off Palau. Delighted at the friendly reception accorded by the natives, who brought gifts of food and drink and furnished labor and material for building a new vessel, Wilson placed his crew and his firearms at the disposal of his hosts, who proceeded to wage war against their neighbors with striking success. Wilson did not neglect to raise the English flag and proclaim British sovereignty. On his departure, he took with him the son of the chief, young Prince Leeboo, who died of smallpox four months after arriving in England.

In 1790, Captain John McCluer was sent from Bombay to Palau with two British vessels. He established cordial relations with the chief by presenting him with cattle, sheep, goats, pigs, poultry, ammunition, silverware, and saws. Becoming enamored of the islands, he sent his ships on to China and remained in Palau, where, he said, "he was not only doing a service to his country but also to the world as a whole by thus furthering the projects of these noble-minded natives." McCluer was not without political ambitions, however, for, with the consent of the chief, he raised the British flag, declared Palau a British territory, built a stone fort on Arakabesan, and proceeded to establish personal authority over the island. After 15 months, however, he abandoned his plans and sailed for the Philippines. Returning briefly in 1794, he carried off to India a half dozen women and other native followers. With a visit by Captain James Wilson in 1797 the first period of British interest in Palau came to an end.

During the first three decades of the nineteenth century, ships of several European nations visited the islands for purposes of trade and exploration. In 1832 the crew of a shipwrecked American vessel under the command of Captain Edward C. Barnard were rescued by friendly natives of Palau, whom they persuaded to attempt to return them to civilization in native canoes. They encountered serious difficulty at sea, however, and in a state of exhaustion finally reached Tobi, where they were taken captive. The captain and one member of the crew, who soon escaped aboard a Spanish vessel, reported that they had received friendly and considerate treatment, but two other survivors, who remained in captivity on the island for many months, told a contradictory story of hardship and cruelty. Their reports, published in the United States between 1834 and 1839, brought the islands into public notice.

After 1840 began a period of increasing trade (see 133). Whalers, who featured prominently in the opening up of the Eastern Carolines, seldom visited the western islands of the archipelago. Missionaries, who became active in the Eastern Carolines about the middle of the century, and who had long since christianized the Marianas, failed to establish any permanent stations in the Western Carolines until the end of the nineteenth century (see 134). It was mainly in the persons of the traders, then, that the natives of this area first became familiar with Europeans.

The natives at first received the Westerners with ungrudging hospitality. A number of sailors deserted ship to lead the idyllic life of the islands, and a few islanders visited the West or at least its Oriental outposts. Early visitors report that the natives quickly learned the value of iron and would attempt to strip the ships of iron articles. They were astounded at firearms, begged for them as presents, and sometimes received them. British visitors in particular were not averse to participating in native wars to further their own interests, and to such activities may be attributed a good part of the animosity with which natives are later reported to have greeted visitors. In the early nineteenth century, the people of Koror and Peleliu were reported to be fierce and piratical. A little later the natives of Yap several times behaved hostilely to strangers, and as late as the 1880's the people of Tobi are reported repeatedly to have attacked foreign ships. From the very earliest times, there occurred isolated instances of attack and looting and murder. By far the majority of the accounts from all periods, however, indicate that the natives were friendly and peaceful.

Westerners found no great riches in the islands, and possibly for that reason created few disturbances. They introduced livestock, which in most cases quickly became extinct; firearms, which soon rusted; and diseases like smallpox and syphilis, which unfortunately flourished. Contemporary accounts make clear, however, that the greatest hazards the natives faced were not the new dangers of civilization but the old dangers of famine and storm and warfare, which again and again depopulated whole islands.

132. Political History

Period of Virtual Independence (prior to 1886). From early in the discoveries period the Western Carolines lay within Spain's sphere of influence, and so long as no other nation was interested in them they were tacitly regarded as Spanish possessions. To be sure, Captain Wilson in 1783 and Captain McCluer in 1790 raised the British flag in Palau (see 131), but Great Britain did not press these claims. On the other hand, Spain never made any formal assertion of sovereignty; she made but two early and unsuccessful attempts to establish mission stations on the island (see 134), and until late in the nineteenth century she made no serious effort to administer them.

With the development of trade in the region in the middle of the nineteenth century (see 133), Spain, Great Britain, and Germany all experienced a quickening of interest in the matter of sovereignty. In 1867, the British dispatched a man-of-war to avenge the death of the unscrupulous trader, Cheyne, at the hands of the natives of Palau, and the responsible chief was killed. In 1882, after the natives of Palau had plundered a wrecked ship belonging to another dubious trader, O'Keefe, the British dispatched two warships, which, when a demand for an indemnity was refused, sent a landing party ashore and razed the village of Melekeiok. In neither case, however, did Great Britain make any territorial claim.

In the meantime, German traders had opened trading stations on Yap and Palau. In 1873, when a vessel belonging to one of these traders, Eduard Hernsheim, was about to sail for Palau from Hongkong, the Spanish consul at the latter port demanded that Hernsheim pay customs duties for his trade with Palau and that he deliver over the Palauans on board as Spanish subjects. The British governor of Hongkong refused to support the consul's demands, and Hernsheim disregarded them. Spain took the occasion, however, to assert her sovereignty over the Carolines. Germany, in 1875, protested to Madrid that there was no treaty entitling Spain to make any such claim, and that no representatives of the Spanish Government had ever been established on the islands. Great Britain sup-

ported the German position. In 1876, Germany dispatched a corvette to Yap, Ngulu, and Palau to map the area and to protect the interests of German merchants and, at the request of the British Admiralty, of English traders as well. An exchange of diplomatic notes between Spain, Germany, and Great Britain resulted the following year in an agreement whereby Spain recognized complete freedom of trade in all Pacific areas not actually occupied by a European nation.

Spain now began slowly to mature plans for the occupation of the Carolines. A Spanish cruiser visited Yap and Palau in 1883, and on February 24, 1885, the Madrid government ordered the governor of the Philippines to take possession of the islands. On August 21 and 22 respectively, two Spanish vessels arrived at Yap with a new governor, soldiers, convict laborers, two priests, riding horses, cattle, water buffaloes, and stone to build a church and a governor's residence. Instead of raising the Spanish flag immediately, however, the party spent five days in selecting a suitable site, in landing their animals, and in planning an appropriate ceremony. Suddenly, early in the morning of August 25, the German gunboat Iltis sped into port, landed a party, planted the German flag, and took possession of the islands in the name of the Kaiser. Taken completely by surprise, the Spaniards resorted to the ineffective subterfuge of raising their flag during the night and claiming priority of action. Later, however, they lowered their flag, and the matter was submitted to Pope Leo XIII for adjudication. In December, 1885, the pope confirmed Spain's claim to sovereignty on condition that she maintain an orderly government, grant full protection to all western traders, allow Germany in particular to trade freely, to establish fisheries and plantations, to send warships to any port, and to establish coaling stations. Early in 1886 Great Britain reached an agreement with Spain and Germany whereby she too gained the above-mentioned rights. Germany meanwhile dispatched a warship to make surveys of Palau, and her traders proceeded with their plans for commercial expansion.

Spanish Rule (1886-1899). Her claim to the Carolines confirmed, Spain, in 1886, dispatched nine priests and monks of the Capuchin order to found missions on Yap and Palau (see 134), and established on Yap a government office for the administration of the Western Carolines. Here, as on Ponape in the Eastern Carolines, fortifications were built and a military garrison maintained. Missionary endeavor, though modest, was the principal activity of the Spaniards throughout the period of their rule. They interfered very little in local affairs, and from what little effort they expended they reaped no economic rewards, for the trade of the area was monopolized by Germans, Americans, and Japanese. On several occasions Spain dispatched warships and troops to punish the natives of outlying islands for offenses against traders or missionaries, but her hold over the region remained tenuous and her influence small.

German Rule (1899-1914). At the close of the Spanish-American War, in 1899, Germany negotiated a treaty with Spain by which she acquired the Caroline and Marianas Islands, except for Guam, in return for a payment of 25 million pesetas ($4,500,000). On July 18, 1899, an imperial edict declared these regions a German protectorate and placed them under the administration of the Governor of German New Guinea. The Germans at once took possession, establishing administrative headquarters for the Western Carolines on Yap. Here they erected a new administrative building, established a hospital with a resident physician, who soon began to train native assistants and make tours of the other islands, and set up a police force composed first of Malays but soon of trained natives. The administrative officials consisted of the district officer, a secretary, a police officer, and a government physician, and this staff was never much increased. The system of native administration was completely patriarchal, the Germans interfering as little as possible with local political and social traditions. Six paramount chiefs on Yap were confirmed in office and were made responsible, with the help of their assistant chiefs, for the administration of local affairs. The district officer met with the chiefs once a month, discussed problems, and explained policy; the paramount chiefs then met with their subordinates and gave them instructions.

Although they encountered difficulties in imposing their administration in the Eastern Carolines, the Germans met practically no opposition on Yap, and little more in the other islands of the Western Carolines. As soon as possible, the district officer at Yap began to visit the other islands, explaining to the native chiefs that Germany had now assumed sovereignty and confirming them in office with some police supervision. In 1901 he visited Palau, where he delegated supervisory authority to one James Gibbon, an educated West Indian Negro of mixed blood who had lived in the islands for more than 40 years, and placed him in charge of five native policemen. In 1905, Gibbon was replaced by a German official, who set up a branch office at Koror. Trips and visits of inspection were made to other islands, and systems of local government similar to that on Yap were instituted. In general, native chiefs were left in authority, though made subject to German supervision and deprived of their power to inflict the death penalty.

The administrative control of the islands was centralized in 1907 by converting the district office for the Marianas at Saipan into a branch office subordinate to the headquarters on Yap. In 1910 another branch office was opened on Angaur in consequence of the growing economic importance of that island with the development of phosphate mining.

The Germans succeeded in imposing their control throughout the Western Carolines without unduly antagonizing the natives. They did, however, encounter some opposition from local political and religious leaders, who several times stirred up near rebellions. The most important of these occurred in the village of Arekong on Palau in 1906, but it was promptly quelled by the speedy appearance of the German director of the Palau branch station with his police force. Regular visits by German warships helped to prevent more serious outbreaks, such as occurred in Ponape. The main reasons for the peaceful imposition of German rule, however, were the mild disposition of the people and the sound administrative policy of not interfering with native customs.

The Germans worked conscientiously for the improvement of the area. They built roads, and worked out an ingenious way of making fines payable in native stone money (see 351). They encouraged the expansion of the missionary activity carried on by the German Capuchin order (see 134). They sent officials and scientists to the various islands to report on local conditions, to prepare improved maps and charts, and to explore economic possibilities. The natives were protected from unscrupulous traders by forbidding the extension of ruinous credits, and their property and fishing rights were respected. The administration sought to correct existing evils by prohibiting the sale of firearms and liquor to natives, by putting an end to warfare, by attempting to control sorcery, by forbidding "prostitution" in the men's clubhouses (see 153), by discouraging infanticide, and by encouraging emigration from the poorer islands to Yap and Palau. After the disastrous typhoon of 1907, when Woleai in particular was devastated, the administration sent prompt relief and made every effort to rehabilitate the area and its inhabitants.

Only in the promotion of trade, which was after all the primary concern of the administration, did the district officers on occasion resort to dictatorial steps. Native chiefs were required to have their people increase the acreage planted to coconuts, to maintain the groves in good condition, and to give a regular accounting to the authorities. In order to discourage idleness, able-bodied men in Palau were forbidden to frequent their clubhouses during the daytime, and the police were made responsible for the enforcement of this regulation. On the whole, however, the German administration was moderate, enlightened, and efficient.

Japanese Rule (since 1914). In October, 1914, a Japanese naval squadron took military possession of the Caroline Islands, interning the German officials and businessmen and eventually shipping them back to Germany. The squadron commander immediately established a military administration of the islands. In December of the same year the administration was taken over by a newly created Provisional Naval Garrison or South Seas Defense Corps, which had its headquarters on Truk and established regional garrisons at Saipan, Palau, Truk, Ponape, and Jaluit to conduct civil affairs in five administrative districts centering on these islands. In April, 1915, a sixth district was created, with garrison headquarters on Yap.

On July 1, 1918, the Japanese established a Civil Administration Department, which remained, however, under the control of the Naval Garrison. The regional garrisons relinquished their administrative functions, retaining only their police functions, and civil administration stations were set up by the new Department in each of the six administrative districts. These stations were manned by civilian personnel, and were responsible directly to the Department.

By a secret agreement in March, 1917, Great Britain recognized the claims of Japan to all the former German possessions in the Pacific north of the equator, and the approval of France and Russia was also obtained. When the peace conference met at Versailles, therefore, it was faced with the fact of virtual annexation. American efforts were powerless to effect any significant change, although the situation was rendered somewhat more palatable by devising a special category of Class C mandates to cover the case. Such a mandate differed from outright annexation only by imposing upon the mandatory power a number of obligations, notably, to promote the material and moral well-being and social progress of the natives, to prohibit slavery and forced labor, to control traffic in arms, to exclude alcoholic beverages, to refrain from building fortifications and military bases, to permit freedom of worship and missionary activity, and to submit an annual report to the League of Nations. On these terms Japan was confirmed, in 1920, in her possession of the Caroline, Marshall, and Marianas Islands as a mandatory under the League of Nations. It was not until 1922, as a result of the Washington Conference, that the United States accepted the arrangement, and then only after prolonged negotiations and special assurances that American interests in Yap would be safeguarded.

The difficulty centered about the Pacific cable system. At the time of World War I the Deutsch-Niederländische Telegraphengesellschaft, a German company supported largely by Dutch capital and subsidized by both the German and Dutch governments, owned and operated cables which ran from Guam to Yap and there diverged, one line going south to Celebes and the other running north to Shanghai. Another concern, the American Commercial Pacific Cable Company, owned cables running from San Francisco to Guam via Honolulu and Midway Islands, from Guam to the Japanese Bonin Islands, and from Guam to Manila and thence to Shanghai. In addition, the American company operated the Guam end of the German cable from Yap. During interruptions of service on the Guam-Manila cable, messages could be redirected over the German cable, via Yap to Shanghai and thence relayed to Manila by the American cable. This alternative route was regarded by American interests as of the utmost importance in maintaining uninterrupted communication with China and the Philippines. The seizure of Yap by the Japanese in 1914 and the diversion of the Yap-Shanghai cable to a Japanese island, Nawa in the Ryukyus, deprived Americans of this alternative route and meant that, whenever the Guam-Manila service was interrupted, all American cable traffic with China and the Philippines had to pass through Japan.

Accordingly, when the question of mandates was being discussed at the Versailles Conference, President Wilson made certain reservations in regard to Yap, and these were apparently accepted by the Supreme Council. They were not, however, a matter of record, and when the Council of the League of Nations in 1919 confirmed Japan in her mandate over "all the former German islands situated in the Pacific Ocean and lying north of the Equator" it made no mention whatever of special considerations in regard to Yap. The United States Government brought the matter to the attention both of Japan and the Council of the League, but considerably weakened her case by waiting for more than a year after the confirmation of the mandate before registering her protest. The issue was a complex one, feelings were sensitive on all sides, and discussion became acrimonious. Japan declined to concede that her mandate was limited by any unwritten understandings at the peace conference, and the United States refused to acknowledge that the mandate thus granted by the League was valid.

When the Washington Conference assembled late in 1921, the problem of the mandated islands was listed for discussion. The scheduled discussions did not actually occur as a part of the conference itself, but were carried on quietly between the Japanese and American delegations and resulted in a treaty, signed in February, 1922. Article I of this treaty gave the consent of the United States to the Japanese mandate. Article II conferred upon the United States all the rights and privileges granted to members of the League by the terms of the mandate, including religious freedom whereby American missionaries might acquire and possess property, erect religious buildings, and open schools throughout the islands. Article III granted to American citizens free access to the island of Yap on an equal footing with Japanese "in all that relates to the landing and operation of the existing Yap-Guam cable, or of any cable which may hereafter be laid or operated by the United States or by its nationals connecting with the Island of Yap." Similar rights were pledged in regard to radio-telegraph, but with the reservation that these should not become operative so long as Japan maintained an adequate station. Article IV secured to citizens of the United States unrestricted rights of entry and residence in Yap, together with the privileges of acquiring and holding all kinds of real and personal property and exemption from censorship over cable and radio. Article V provided that the Japanese Government would exercise its power of expropriation in the island to secure for the United States or its nationals needed property and facilities for the purpose of electrical communication if such could not otherwise be obtained.

Japan thus acknowledged the special interests of the United States in Yap, but the matter never actually went beyond formal acknowledgment. In 1925, when the cable service between Yap and Guam was interrupted, the United States Navy, when approached by the State Department on the subject, declared that since the cable was not a naval undertaking the Navy would take no action. As late as 1929 the United States still retained technical control over the Yap-Guam cable, but there is no indication that it was in effective operation at that time.

In accordance with the terms of the mandate, the Japanese began to withdraw their armed forces from the islands in 1921 and completed the withdrawal in March, 1922. During the period from 1920 to 1922 the Civil Administration Department acted under direct instructions from the Minister of the Navy. In preparation for civilian administration, the headquarters of the Department were transferred from Truk to Koror in Palau in July, 1921. In March, 1922, the Provisional Naval Garrison was abolished, and in the following month its place was taken by the South Seas Government, a civilian administrative organization which has governed the mandated islands ever since (see 213). The six administrative districts were retained, with a Branch Government (see 214) at the head of each. In the Western Carolines, the Yap Branch Government was given jurisdiction over the islands from Pikelot in the east to Ngulu in the West, and the Palau Branch Government

was given jurisdiction over the islands from Kayangel in the northeast to Tobi in the southwest.

Whereas the principal objective of the Spanish administration was religious proselytism and that of the Germans was commercial expansion, the primary ends of Japanese policy were political and military. Native political heads were shorn of much of their authority. Trade and intercourse with foreign nations was quietly discouraged. The islands attracted little attention in the outside world until 1932, when rumors gained currency that Japan was fortifying some of the islands, notably Truk. When questioned by the League of Nations, the Japanese Government categorically denied the reports. Although its word was accepted by some, many remained skeptical until the outbreak of war in December, 1941, demonstrated that the rumors had a basis in fact.

Japan's threat to withdraw from the League of Nations as a result of the Manchurian affair again brought the islands into public notice, providing an opportunity for international jurists, mostly American, to pronounce the opinion that if Japan withdrew she would forfeit her mandate, and the islands would revert to the League. Japanese jurists held the opposite opinion. When Japan actually did withdraw in March, 1935, she kept the mandated territory, defining it as "an integral part of the Japanese empire," but she continued to administer it in much the same way and to submit annual reports to the League through the year 1938. After that year all pretense of international supervision vanished, and the islands were increasingly treated as a closed military area.

133. Economic Development

Aboriginal Trade. Even before the appearance of Europeans, the natives of the Western Carolines carried on considerable trade with one another by means of barter and, on Yap at least, by the use of a primitive sort of currency (see 351). The flourishing trade which prevailed among the various island groups depended upon a high achievement in the art of navigation (see 294) and upon specialization of products for trade. Yap produced turmeric and various ornaments made of spondylus and conus shell. Woleai built canoes, Ngulu and Eauripik fabricated the best mats and dance girdles. Ulithi and Fais excelled in the production of turmeric, and Lamotrek in ropes and cordage. The natives voyaged near and far to exchange these goods. The most curious and most profitable of all the early exchanges arose between Yap and Palau. The natives of Yap undertook the extremely hazardous 260-mile sea journey to Palau to acquire aragonite, of which they made the great stone discs that were the distinctive money of Yap. Arriving in Palau hungry and exhausted, they were permitted to quarry their stone from the coral reefs south of Babelthuap and were often required in return to gather firewood, carry water, build fish weirs, and act as fortune tellers, medical specialists, and magicians for their hosts.

Practically all of the islanders engaged in some interisland trade, but the people of the smaller outlying atolls, being relatively less self-sufficient than those of the larger islands, had the greater incentive and were in general more energetic. A vigorous trade grew up around such centers as Yap and Babelthuap. Besides being strategically located, Yap was regarded as the home of the principal deity of the Micronesians and thus received tribute from islands far to the east. The people of Yap themselves, besides their expeditions to Palau, maintained a lively trade in mother-of-pearl, tortoise shell, dugong teeth, mats, belts, combs, lime boxes, hats, and baskets with islands as far east as Woleai. The natives of Woleai and Ifalik journeyed eastward as far as Truk, exchanging canoes, dance girdles, and ornaments for turmeric and spondylus shells. Lamotrek natives traded from Yap to Puluwat and northward to Guam.

After the coming of the Spaniards, Guam became an irresistible magnet to traders from the central Carolines, for there they could dispose of their native products and receive in return iron implements, which all the islanders quickly learned to esteem. Once a year, down to 1873, flotillas of a score or so of canoes from Faraulep, Lamotrek, and Woleai in the Western Carolines and Puluwat in the Eastern Carolines assembled at West Fayu for a joint trading voyage to Guam. They set out at the end of the northeast trades in April, made the 300-mile trip to Guam in eight days, and returned at the beginning of the southwest monsoon in May or June. In Guam they bartered shells, mats, cordage, and even their canoes themselves, which were in great demand in the Marianas, receiving in return iron axes and machetes, glass beads, and cloth.

Early Trade with Europeans. From the time that the natives of Guam robbed Magellan of all the ironware which they could remove from his ship, European visitors to Micronesia found the natives eager for foreign goods, which, in the Western Carolines at least, they were generally content to acquire by the more respectable procedure of trade. Iron knives, axes, kettles, and fishhooks were especially in demand. Firearms and ammunition were even more acceptable, when the westerners were rash enough to supply them.

As trade became more regular, cotton cloth and twist tobacco grew in favor, the latter to such an extent that it served for a period as a standard medium of exchange. The Europeans, in their turn, discovered the desirability of a number of native products. The fine native cordage and coconut-fiber ropes brought good prices in China. Fruits and other food products, tortoise shell, shell ornaments, wood carvings, and hats of fiber and tortoise shell were also much in demand. The major attraction, however, was trepang, a sea slug which is considered a delicacy in China. It was trepang which brought a number of Spanish trading vessels to Palau in the early years of the nineteenth century, and it was trepang which attracted the wily British trader and adventurer, Andrew Cheyne.

Cheyne arrived in Palau in 1843, and in a few years, through shrewdness and intrigue, earned himself a small fortune and a very unsavory reputation. In return for trade favors he supplied Koror with arms and ammunition to fight its traditional enemy, Melekeiok. Later, after repeatedly defrauding the natives of Koror and defaulting on his indebtedness for goods received, he supplied arms to their enemies. He attempted to bind an English competitor, Woodin, by a contract assuring to himself a monopoly of the valuable trepang trade and confining Woodin's operations to the petty commerce in coconut oil and tortoise shell. The two naturally came to an open quarrel. Woodin enlisted the aid of Babelthuap natives hostile to his rival and succeeded in establishing trade supremacy in a region which Cheyne had made practically his own. Native hostility toward Cheyne rose to such a pitch that he found it expedient to leave the islands for some months. He engaged a German, Tetens, to conduct his business affairs in his absence, and on his return paid him only a part of what he had promised. At last the people of Palau could tolerate Cheyne no longer. They lured him out of his house one night, fell upon him with axes, ground his body to pieces with a large flagstone, and threw his remains into the sea. The British sent a warship to avenge his death.

A more colorful figure was an Irishman, D. D. O'Keefe, a self-styled American citizen, who arrived in Yap in 1872 as the captain of a Chinese junk. By the simple expedient of quarrying quantities of stone money in Palau and importing it to Yap, where it was current, this adventurer ingratiated himself with the native chiefs and gained a position of trade dominance, outdistancing and enraging his German competitors. He acquired such power on the island that he presumed to deport any native whom he considered undesirable, and he even set up a small private battery in front of his property and caused a salute to be fired whenever one of his ships entered the harbor. When some Palau natives in 1880 plundered the wreck of one of his ships, O'Keefe was inclined, in the interest of good will, not to press his claim for repayment. Great Britain, however, took advantage of the occasion to dispatch warships to Palau to collect an indemnity. The matter was settled in 1883 by a small payment, but not until after the village of Melekeiok had been razed by a landing party. When the German administrators took possession in 1899, they stripped O'Keefe of his power. When he left Yap in 1901, O'Keefe claimed nearly the whole island as his private property, later willing it to his widow, and his heirs are said to have made an unsuccessful attempt to establish their claim to this extraordinary estate.

Development of the Copra Industry. Traders like Cheyne and O'Keefe willingly accepted copra, as well as trepang, mother-of-pearl, and other marketable commodities, but it was the Germans who really developed the copra industry. Godeffroy and Sons, a Hamburg firm which had been active in Samoa, opened a branch on Yap in 1869. Tetens, who had been Cheyne's manager, was made the company's representative. Hernsheim and Company, also of Hamburg, established trading stations on Palau, Woleai, and Yap in 1873, and later took over the Godeffroy interests. The Deutsche Handels- und Plantagengesellschaft, the largest German firm in the Pacific trade, also entered the Western Carolines, and in 1885 was operating stations at Palau, Ulithi, and Yap.

In 1887 the leading German mercantile firms amalgamated to form the powerful Jaluit Company, with an initial capitalization of Mk. 1,200,000. Although less active in the Western Carolines than in the Marshalls and Eastern Carolines, this company maintained trading stations on Faraulep, Ifalik, Lamotrek, Palau, Satawal, Woleai, and Yap in 1893. Under the German administration it received a government subsidy of Mk. 120,000 a year in return for operating an interisland shipping service, carrying mails, and supplying coal to the German Navy. In 1912 it planned to expand operations in the Western Carolines, and for this purpose organized a subsidiary, the West Caroline Company, with which O'Keefe's firm was amalgamated. In accordance with its plan for expanding copra production under unified control, this company took 30-year leases on 5,662 hectares of land which the government had bought from the natives at an average price of less than ten marks per hectare. Its program was brought to an abrupt end, however, by the outbreak of World War I.

Despite their efforts, the Germans were never able to dominate, much less to monopolize, the copra trade in the Western Carolines. From the beginning they found their path blocked by the resourceful and strongly entrenched O'Keefe, and after 1893 they encountered determined Japanese competition. The copra of the area was not of high quality,

and its production did not reach large enough proportions to bring in substantial profits. Exports reached 1,000 tons in 1892-93, but immediately thereafter production fell off in consequence of the introduction of the ruinous scale insect from the Philippines, and in later years came damaging droughts and typhoons. So serious did the situation become that trade in copra was prohibited altogether during the first two years of the German occupation, partly to conserve the depleted food supply of the natives and partly to give the groves an opportunity to recover. More droughts and typhoons forced a second copra embargo between 1906 and 1908. Despite official efforts to control the blight, to improve the methods of growing and curing, and to expand the area planted to coconuts, the exports of copra in 1912 amounted to only 1,100 tons, valued at Mk. 301,827. For copra production under the Japanese, see 326.

Development of Phosphate Mining. Economic surveys conducted by the Germans revealed the presence of phosphate deposits on Angaur, Fais, and Palau (see 123). In 1908 the South Seas Phosphate Company was organized, and in February, 1909, a force of 23 Europeans, 55 Chinese artisans, and 98 Yap laborers began operations on Angaur. Installations were built, including a short railroad, an iron loading bridge, a sawmill, lathes, a repair shop, an administration building, 32 residences for Europeans, a mess, a social hall, a hospital, 11 barracks, a storehouse, and a drying establishment. Shipments increased from 9,641 metric tons in 1909 to 54,000 metric tons, valued at Mk. 1,523,200, in 1912. When the Japanese seized the islands in 1914 they closed the mines but soon reopened them under Navy supervision. In 1922 the Japanese Government bought out the property rights of the German owners for ¥ 1,939,960, and turned the operation of the mines over to the South Seas Government (see 324).

Japanese Commercial Penetration. Japanese traders first appeared in the Western Carolines in 1890. In that year, one Ukichi Taguchi launched a plan to benefit samurai who had suffered in the dissolution of the feudal system, and at the same time to extend the power of Japan, by settling samurai in the South Sea islands and establishing them in business there. With ¥ 44,400 which had been entrusted to him by the Governor of the Tokyo Prefecture for the support of impecunious samurai, he organized a company called the Nanto Shokai, bought a sailing vessel of 91 tons, took on a cargo of merchandise, and set out to trade with the natives of Micronesia. He visited Guam, Yap, Palau, and Ponape, leaving some of his company at Ponape to open a branch there. The venture failed.

Another Japanese company, the Koshin Sha, was organized in 1891 to trade with Truk, but in 1893 it shifted its office to Palau. Here it carried on business until 1914, trading Japanese goods for copra and marine products. In 1906, the Nanyo Boeki Hioki Kaisha and the Murayama Shokai, two Japanese firms which had been trading in the Marianas and Eastern Carolines, amalgamated to form the Nanyo Boeki Kaisha. After 1914 this important firm rapidly crowded out foreign competition and acquired a dominant mercantile position in the Western Carolines as well as elsewhere in the mandated area (see 327).

As early as the Spanish period Japanese business had become strongly entrenched in Palau. When the Germans arrived they found the Japanese in control of nearly all of the trade of this island group, which amounted annually to between 70 and 100 tons of copra, 20 to 30 tons of trepang, from a ton to a ton and one half of shell, and 130 to 200 pounds of tortoise shell. The fisheries of Palau were developed by the Japanese, and when copra production fell off during the German regime more Japanese fishermen and traders immigrated to the area. In 1912, 73 of the 122 foreigners living in the Marianas and Western Carolines were Japanese, and approximately one third of the foreign trade of this area was with Japan. German mercantile interests were in second place, despite official support and encouragement. With the occupation of the islands by Japan in 1914, Japanese business rapidly forced out all foreign competition and secured almost exclusive control of commerce and industry in the Western Carolines.

134. Missions

Early Missionary Attempts. Nearly two centuries elapsed between the discovery of the Western Carolines and the first attempt to missionize them. Finally, in 1710, fired by reports from native castaways, the Spaniards in Manila fitted out an expedition and sailed for Palau with two Jesuit fathers, one brother, and a suitable armed guard. Coming upon Sonsorol en route, they landed and were so hospitably received by the natives that the Jesuits decided to establish themselves there. They landed with their guard, and vanished. The ship returned to search for them, but in vain, and several later expeditions had no greater success.

A second and equally ill-starred attempt was made in 1731, when two Jesuit fathers sailed from Guam to Falalop in Ulithi, established a colony there, and set about con-

verting the natives. One of the fathers, returning to the Marianas for supplies, was shipwrecked, and did not get back to Falalop until 1733, only to learn that in his absence the other priest, eight lay Spaniards, and four Filipinos had been murdered. A century and a half passed before the Spaniards attempted further missionary activity in the area.

Catholic Missions. In 1886, when Pope Leo XIII confirmed Spain's sovereignty over the Caroline Islands, he entrusted to Spanish Catholic missionaries of the Capuchin order the task of converting the natives to Christianity. On April 28 of that year two Capuchin fathers arrived at Palau and established a mission station there, and later in the year one father and six brothers began proselyting activities on Yap. By the end of the Spanish period the Capuchins had established four fathers, six brothers, and six churches on Yap, and two fathers, two brothers, and two churches on Palau. No missions were opened on any of the other islands of the area.

The Capuchins worked hard, but with little real success. To be sure, with government support behind them, they were able to baptize 1,018 natives on Yap and to enroll 542 of their children in the church schools. Attendance at the church, however, was conspicuously small; the few who appeared did so for material reasons and were wont to explain their action by the common saying, "I go to deceive the padre." The school attendance was better, because parents were compelled, under pain of punishment, to send their children. In Palau there were only a handful of converts, and attendance at services was even more casual than on Yap.

When Germany took over the administration of the islands, the Spanish missionaries were gradually replaced by German Capuchins of the Rhenish-Westphalian order. The first German father arrived at Yap in 1902, and by 1908 all the Spaniards had been replaced. In 1906, Alsatian sisters of the Franciscan order were admitted to the Carolines. In 1908, the German Catholic missionaries in the Western Carolines numbered five fathers, six brothers, and two sisters. In 1911, they operated three main and four branch stations in Yap, and two main stations and one branch in Palau. In 1905, Pope Pius X made the Caroline Islands an apostolic prefecture; its seat, first located at Ponape, was transferred to Yap in 1907. In 1911, the prefecture was combined with that for the Marianas under a vicar apostolic. The present seat of the vicariate is at Dublon in Truk.

The Germans removed the administrative pressure upon church and school attendance, with startling results. In Yap, all except nine school children dropped out of school immediately, and church attendance, already poor, fell almost to the vanishing point. The missionaries had practically to start afresh. By 1903 they claimed only 241 native converts in Yap, as compared with the 1,018 reported by the Spaniards. Building slowly, they were able, in 1912, to report 330 native Christians in Yap and 184 in Palau. There were still no missions in the other islands.

The German missionaries did much to improve the church schools. Religious training was supplemented by elementary schooling, including, in some instances, instruction in German and domestic science courses for girls. In 1912-13 there were ten schools in Yap with a total enrollment of 321 boys and 152 girls, and five schools in Palau with 213 boys and 152 girls.

When the Japanese seized the Carolines in 1914 they compelled the German Capuchins to leave. In 1921, however, they permitted Spanish missionaries, this time of the Jesuit order, to resume activities in the islands, and even supported their work with modest subsidies. In 1937 there were two Spanish fathers and one brother in Yap and a like number in Palau. Since they are neutrals, the outbreak of war has presumably not affected their work or status.

Protestant Missions. In 1920 the Nanyo Dendo Dan (South Seas Mission), which is affiliated with the Congregational Church of Japan, was encouraged through government subsidies to enter the Micronesian field. It began work in Truk and Ponape in the Eastern Carolines, taking over the stations of the Lutheran Liebenzeller Mission of Württemberg. The German missionaries, banished at the time of the Japanese occupation, were permitted to return to Truk in 1927. Shortly thereafter the Nanyo Dendo Dan participated in a plan to assist some of them to remove to Palau. One German, the first Protestant missionary in the Western Carolines, arrived in Palau in 1930. By the next year he had built a church and gained 12 native converts. In 1932 he had been joined by a second missionary, and 196 natives had been admitted to the church. Protestant activity increased each year, until in 1937 there were three churches, five missionaries, one native evangelist, and 1,406 native believers in Palau. A later report indicates that one German Protestant has since opened a mission in the Yap district. The German Protestant missionaries in Palau are said to have been unfavorable to Nazism from the first and, as a consequence, to have had all financial support from Germany cut off, even before the war. How they have fared more recently is unknown.

Shinto and Buddhist Missions. Shintoists of the Tenrikyo sect have been active in Palau since the Japanese occupation. They are said to have worked mainly among the natives. In 1937, official reports listed two Shinto churches, three missionaries, and 84 native and 27 Japanese adherents in the Palau district. In the same year, professing Buddhists were reported to include 500 natives and 2,060 Japanese in the Palau district, with one Buddhist temple and two missionaries.

14. PEOPLE

141. Racial Characteristics

Physical Appearance. Two physical types are distinguishable in the Western Carolines. The natives who live on the southwestern islands of Merir, Pul, Sonsorol, and Tobi are long-headed and average about five feet three inches in stature. Those who inhabit Palau and the islands of the Yap district have considerably rounder heads (cephalic index about 80) and average approximately two inches taller in stature. In other respects, however, the two groups resemble each other, being characterized by a slender lithe physique, light brown skin, black or dark brown hair which is usually wavy, scanty body hair and beards, high foreheads, prominent cheekbones, broad noses, large mouths, and thick lips. The natives of the Yap district, however, tend to be somewhat more burly than their Eastern Caroline neighbors, and the Mongolian eyefold occurs more frequently in the Palau district than elsewhere in Micronesia.

Racial Affinities. The inhabitants of the Western Carolines are a part of the so-called Micronesian race, which is closely related to the Polynesians. The presence of the Mongolian eyefold on the one hand and of frizzly hair and Negroid features on the other bespeaks racial admixture, but whether this occurred in prehistoric or historic times has not been established. The more prevalent theory is that the Mongoloid features have come from the ultimate Malayan ancestry of the people, and the Negroid characteristics from Melanesian and Papuan admixture in later but still prehistoric times.

"Kanaka" as a Racial Term. "Kanaka," the Polynesian word for "men," is used widely throughout the Pacific as an equivalent to the word "native," irrespective of the racial affinities of the poeple concerned. In Micronesia it has commonly been used for the aborigines of the Caroline and Marshall Islands, to contrast them with the Chamorros of the Marianas Islands, who have a strong admixture of Spanish and Filipino blood. Since the word "Kanaka" tends to carry with it a spurious connotation of racial or cultural homogeneity, the term "native" is to be preferred.

142. Language

Native Language. Three distinct native languages are spoken by the inhabitants of the Western Carolines. One language is confined to the natives of Yap and Ngulu. The second is used by the natives of Angaur, Kayangel, and Palau. The third language is spoken with minor dialectical differences in the southwestern islands of Merir, Pul, Sonsorol, and Tobi, in all the coral islands of the Yap district except Ngulu, and in most of the islands of the Truk district in the Eastern Carolines. Thus a native of Truk could be used as an interpreter everywhere in the Western Carolines except on Yap, Palau, and the islands immediately adjacent to them. All three of the above languages belong to the Malayo-Polynesian linguistic stock and have enough common elements, both in grammatical structure and in vocabulary, to permit a native who knows one of them to master the others rather easily.

Foreign Languages. Pidgin English was widely spoken in the Western Carolines at the beginning of the present century, but since there has been little contact with pidgin speakers from outside the area since the Japanese occupation, it is doubtful whether any but a few of the older natives still speak the language. Although a few Spanish words were adopted prior to 1900, apparently none of the natives speak Spanish. During the German period, missionaries and government officials attempted to teach German to the natives, but the latter are reported to have found the language difficult to learn, and probably very few of them speak German today. Japanese has been taught in the public schools since before 1920, with the result that some of the younger natives are fairly fluent in this language and most of them have a smattering. Nowhere, however, has Japanese supplanted the native tongue, although it is probably spoken more frequently by the natives living in the town of Koror on Palau than elsewhere in the area. For interpreters see 145; for literacy see 262.

143. Population

Depopulation. Before the coming of the Europeans, the Western Carolines were heavily populated. During the last century, however, newly introduced diseases ran rampant in the islands and decimated the population. Available estimates indicate that there were from 50,000 to 65,000 natives in the Yap and Palau districts around 1780, but that this number had decreased to about 20,000 by 1860 and to about 14,000 by 1880. Tuberculosis, other pulmonary diseases, syphilis, and dysentery took the heaviest tolls. The German and Japanese governments gradually brought the more virulent diseases under control,

with the result that during the period from 1880 to 1920 the population appears to have remained approximately stationary, hovering in the vicinity of 14,000.

Under the Japanese administration the total population of the islands rose rapidly from 14,800 in 1920 to 29,016 in 1938. The increase was entirely due, however, to Japanese immigration, for the native population resumed its decline. To be sure, the natives have increased slightly in numbers in the Palau district, but they have shown a marked and steady decrease in the Yap district, with the result that the total native population of the Western Carolines (exclusive of Chamorros) dwindled from 13,782 in 1920 to 11,852 in 1937. The alarming depopulation of the Yap district has spurred the Japanese to remedial measures (see 144).

Total Population. The following table summarizes the census figures for the population of the Western Carolines for various years subsequent to the Japanese occupation:

Year	Natives	Chamorros	Japanese	Foreigners	Total
1920	13,782	310	689	19	14,800
1925	12,950	373	1,210	32	14,565
1930	12,123	372	2,319	22	14,836
1935	11,823	375	6,926	21	19,145
1937	11,852	454	11,963	39	24,308
1938	------12,188------		16,788	40	29,016

By 1939 the Japanese inhabitants numbered 20,464, and since then they have doubtless increased even more rapidly through the accession of military personnel and large numbers of laborers.

Distribution by Locality. The following table analyzes the census data by administrative districts, giving the figures for natives and total population in various years:

	Yap District		Palau District	
Year	Natives	Total	Natives	Total
1920	8,177	8,439	5,605	6,361
1925	7,215	7,535	5,735	7,030
1930	6,329	6,735	5,794	8,101
1935	5,801	6,347	6,022	12,798
1937	5,617	6,438	6,235	17,870

The following table, compiled from different sources and thus somewhat at variance with official census data, presents the distribution of the population in 1935 (unless otherwise noted) by individual island and atolls.

Atoll or Island	Natives	Japanese	Foreigners	Total
Angaur	420	406	6	832
Eauripik	110	-	-	110
Elato	71	-	-	71
Fais	334	-	-	334
Faraulep	291	1	-	292
Gaferut	-	-	-	-
Ifalik				388
Flalap I. (1937)	76	-	-	
Ifalik I. (1937)	269	-	-	
Pik I. (1937)	54	-	-	
Kayangel	*	*	*	*
Lamotrek	192	1	-	193
Merir	171	9	0	180
Ngulu	53	-	-	53
Olimarao	-	-	-	-
Palau				12,764
Babelthuap I. (1937)	3,380	1,535	5	
Koror I.	1,169	5,489	11	
Peleliu I. (1937)	778	441	2	
Pikelot	-	-	-	-
Pul	19	-	-	19
Satawal	287	3	-	290
Sonsorol	153	7	-	160
Sorol	8	-	-	8

Atoll or Island	Natives	Japanese	Foreigners	Total
Tobi	171	9	-	180
Ulithi				434
Asor I.	47	-	-	
Falalop I.	160	1	-	
Fassarai I	67	-	-	
Lossau I.	39	-	-	
Mogmog I.	95	-	-	
West Fayu	-	-	-	-
Woleai	570	1	-	571
Yap	3,713	392	11	4,116
Total	12,697	8,295	35	20,995

*In the 1935 census figures the population of Kayangel is presumably included in that of Palau. The only specific information on the population of Kayangel comes from a German report in 1910 that this atoll had about 100 inhabitants.

Of the totals in the above table, the population of the Yap district included 6,436 natives, 399 Japanese, and 11 foreigners, and that of the Palau district included 6,261 natives, 7,896 Japanese, and 24 foreigners.

Distribution by Sex. In 1937, the natives of the Western Carolines showed a sex ratio of 106.9 men to 100 women. The ratio was 96.4 in the Yap district and 117.7 in the Palau district, the disproportion resulting in part from the recruiting of males from the former district for labor in the phosphate mines of the latter. The Japanese population revealed the very high sex ratio of 167.8 (154.2 in the Yap district and 168.5 in the Palau district), presumably in consequence of the predominance of males among immigrants. The following table shows the sex distribution of the population in 1937, for the Western Carolines as a whole, for each of the constituent administrative districts, and for three important individual islands:

	Natives		Japanese		Foreigners	
	Male	Female	Male	Female	Male	Female
Western Carolines	6,361	5,945	7,496	4,467	25	14
Yap District	2,874	2,983	347	225	6	3
Palau District	3,487	2,962	7,149	4,242	19	11
Yap Island	1,839	1,677	338	225	6	3
Babelthuap Island	1,719	1,661	895	640	2	3
Koror Island	385	350	3,453	2,342	10	2

Distribution by Age. The following table indicates the distribution by age of the Japanese and native population of each district of the Western Carolines in 1937:

	0-5	6-10	11-15	16-20	21-25	26-30	31-35	36-40	41-45	46-50	Over 50
Japanese											
Yap	92	49	23	32	63	92	65	62	41	25	26
Palau	1,382	1,033	773	1,070	1,641	1,806	1,295	1,070	638	348	335
Natives											
Yap	390	420	479	519	485	448	360	418	486	553	1,299
Palau	752	676	745	690	791	528	417	352	322	320	856

It will be noted that the Japanese population between 11 and 15 years of age is comparatively small, which would seem to indicate that the Japanese prior to 1930 were largely unmarried men, presumably laborers from the Okinawa prefecture, who did not bring their families with them. The large number of very young children, on the other hand, suggests a growing tendency for Japanese to bring women and establish families. The small number of Yap natives in the lower age brackets points, of course, to the source of the declining native population in this district.

Migration. The gains and losses of population through immigration to and emigration from the Western Carolines, classified according to district, race, and sex, as officially reported for 1937, are shown in the following table:

	Yap District				Palau District				Total Net Immigration
	Immigration		Emigration		Immigration		Emigration		
	Male	Female	Male	Female	Male	Female	Male	Female	
Japanese	144	80	60	59	6,325	2,414	2,089	511	6,244
Natives	67	55	39	5	613	-	450	3	238
Foreigners	-	-	-	1	9	-	-	-	8
Total	211	135	99	65	6,947	2,414	2,539	514	6,490

The large net immigration of Japanese during 1937 reflects a steady trend which has been in process since 1920, and which has been largely responsible for the increase in total Japanese population in the Western Carolines from 689 in 1920 to 20,464 in 1939. It should be noted that there are marked discrepancies in the official census figures for the area when net population changes through immigration and emigration and through births and deaths are compared with gross population figures for successive years (see 144).

Provenance of the Japanese Population. The prefectural affiliations of the Japanese inhabitants of the Western Carolines in 1937 are indicated in the accompanying table. Although the prefecture listed is by no means always that of a person's birth, the table gives some indication of the regions in Japan and its territories whence immigrants to the islands have come. The large number from Okinawa reflects the fact that the great bulk of common laborers are drawn from the Ryukyu Islands.

Prefecture	Yap District	Palau District	Total
Hokkaido	2	788	790
Aomori	2	42	44
Iwate	5	30	35
Miyagi	3	159	162
Akita	-	58	58
Yamagata	4	138	142
Fukushima	13	349	362
Ibaraki	5	124	129
Tochigi	1	78	79
Gumma	1	49	50
Saitama	2	91	93
Chiba	19	159	178
Tokyo	61	607	668
Kanagawa	14	180	194
Niigata	5	163	168
Toyama	-	36	36
Ishikawa	15	59	74
Fukui	9	59	68
Yamanashi	5	55	60
Nagano	10	85	95
Gifu	-	32	32
Shizuoka	9	415	424
Aichi	26	142	168
Mie	4	190	194
Shiga	5	45	50
Kyoto	3	54	57
Osaka	-	56	56
Hyogo	6	88	94
Nara	-	62	62
Wakayama	-	357	357
Tottori	-	15	15
Shimane	11	22	33
Okayama	6	89	95
Hiroshima	7	125	132
Yamaguchi	13	64	77
Tokushima	2	38	40
Kagawa	1	34	35
Ehime	4	153	157
Kochi	6	132	138
Fukuoka	17	275	292
Saga	-	114	114
Nagasaki	4	69	73
Kumamoto	2	238	240
Oita	6	87	93
Miyazaki	3	72	75

Prefecture	Yap District	Palau District	Total
Kagoshima	25	236	261
Okinawa	144	4,799	4,943
Korea	92	67	159
Formosa	-	1	1
Karafuto	-	11	11

144. Vital Statistics

Births. The following table shows the number of births and the birth rate per thousand of population for natives and Japanese in the Western Carolines for the period 1924-1930 and for individual years from 1931 through 1937:

	Native Population				Japanese Population			
	Yap District		Palau District		Yap District		Palau District	
	Births	Rate	Births	Rate	Births	Rate	Births	Rate
1924-30 (average)	98	14.0	141	24.2	9	44.4	59	40.8
1931	110	17.2	181	30.8	9	31.6	96	38.6
1932	130	20.6	147	24.3	10	33.3	95	28.4
1933	121	19.3	172	28.3	10	29.6	145	36.8
1934	94	15.4	137	22.7	16	32.8	206	38.4
1935	78	13.0	153	24.6	15	40.8	245	37.4
1936	77	13.0	166	25.5	19	41.2	268	29.1
1937	72	12.4	159	24.7	21	36.8	338	29.7
1931-37 (average)	98	15.9	159	25.8	14	35.6	199	32.9

In 1937 birth rates per thousand of population in the mandated area as a whole were 25.0 for natives, and 44.5 for Japanese. Comparable birth rates in 1935 were 31.6 for Japan and 16.9 for the United States. As had been the case for many years, the birth rate among the natives of the Yap district in 1937, namely, 12.4 per thousand, was the lowest of any administrative district in the mandated area and was, indeed, one of the lowest birth rates in the world.

The number of births per thousand women of childbearing age (15 to 45) in 1937 was 52 for natives in the Yap district, 131 for natives in the Palau district, 160 for Japanese in the Yap district, and 131 for Japanese in the Palau district. The comparable figure for England and Wales in 1931 was 56.5, and for Japan in 1930 was 137.4.

There were 24 reported stillbirths in the Western Carolines in 1937: 2 among natives of the Yap district, 4 among natives of the Palau district, 1 among Japanese of the Yap district, and 17 among Japanese of the Palau district.

Mortality. The number of deaths and the death rate per thousand of population for natives and Japanese in the Western Carolines for the period 1924-1930 and for individual years from 1931 through 1937 are shown in the following table:

	Native Population				Japanese Population			
	Yap District		Palau District		Yap District		Palau District	
	Deaths	Rate	Deaths	Rate	Deaths	Rate	Deaths	Rate
1924-1930 (average)	275	39.1	115	19.8	1	5.0	18	12.5
1931	198	30.9	121	20.6	3	10.6	44	17.7
1932	211	33.4	98	16.2	3	10.0	28	8.4
1933	266	42.5	147	24.2	1	3.0	58	14.7
1934	226	37.1	103	17.0	9	18.4	59	11.0
1935	166	27.8	78	12.5	8	21.7	69	10.5
1936	209	35.4	95	14.6	8	17.3	78	8.5
1937	192	32.8	77	11.9	6	10.5	134	11.8
1931-37 (average)	210	34.2	103	16.6	7	13.5	67	11.1

In 1937 the death rate for natives in the Yap district was the highest reported for any administrative district in the mandated area, while the native death rate in the Palau district was the lowest. Death rates for the mandated area as a whole in 1937 were 21.8 for natives, and 11.7 for Japanese. Comparable rates were 16.8 for Japan in 1935 and 10.9 for the United States in 1936.

The most frequent causes of death are tuberculosis, influenza, and diseases of the digestive system (for a discussion of diseases prevalent in the area, see 251). Infant mortality is relatively high. The distribution of deaths according to age in 1937 is shown in the following table:

Age	Yap District				Palau District			
	Natives		Japanese		Natives		Japanese	
	Male	Female	Male	Female	Male	Female	Male	Female
Under 1	6	1	-	-	2	6	28	13
1 to 4	8	2	2	-	11	10	14	21
5 to 9	3	4	-	-	1	1	1	1
10 to 14	2	1	-	-	-	-	1	1
15 to 19	8	3	-	-	3	3	2	1
20 to 24	4	4	-	-	3	1	5	2
25 to 29	4	6	-	-	7	3	6	4
30 to 34	6	2	-	-	-	-	5	1
35 to 39	6	7	3	-	1	-	4	3
40 to 44	7	9	-	1	3	-	5	3
45 to 49	13	8	-	-	2	1	3	1
50 to 54	9	10	-	-	2	3	3	-
55 to 59	6	7	-	-	1	1	3	-
60 to 69	17	7	-	-	7	3	-	-
70 and over	9	13	-	-	2	-	-	2

Population Trends. The estimation of population trends is hampered by a lack of internal consistency in the official Japanese census data and vital statistics. If there were no errors in these figures, the gross population reported for one year would exceed that for the previous year by an amount equal to the excess of births over deaths plus the net gain from immigration. That this is not the case, however, is seen from an analysis of the statistics for 1937:

	Natives	Japanese	Foreigners
Net change in gross population as compared with 1936	- 129	+ 2,276	+ 10
Net change through natural increase and immigration	+ 200	+ 6,463	+ 7
Net change from births and deaths	- 38	+ 219	- 1
Net change from immigration and emigration	+ 238	+ 6,244	+ 8

Despite such discrepancies, however, certain population trends are quite clear. Among them are the striking natural increase of the Japanese population, the heavy Japanese immigration, and the progressive decline in the native population of the Yap district. The last phenomenon was already apparent during the Spanish regime, and the decline has continued with but slight abatement under the German and Japanese administrations. During 1929 and 1930 a special investigation of the problem was undertaken, with a view toward designing and applying counter-measures. The Japanese investigators concluded that the principal cause of the decreasing population in the Yap District is the high death rate, a considerable proportion of which was found to be attributable to tuberculosis, chronic bronchial catarrh, and acute infantile intestinal inflammation. The factor of next greatest importance, they decided, was the low birth rate, attributable largely to the high incidence of gonorrhea, which is detrimental to conception and the birth of healthy offspring. A third contributory factor was reported to be the prevalence of many unsanitary living practices and of maladaptive superstitions concerning illness. Subsequent to the investigation the following remedial measures are reported to have been applied:

Improvement of drinking water through:
- Subsidies to encourage the sinking of wells,
- Subsidies to encourage the construction of tanks for catching the rainwater from roofs,
- Examination of the sources of drinking water and the issuance of warnings to natives of contaminated sources.

Improvement of native housing through:
- Subsidies for rebuilding homes,
- Construction of model homes,
- Subsidies for improving menstrual isolation houses.

Establishment of latrines for common use.

Provision for medical attention through:
Medical examinations and treatment by traveling physicians,
Construction of three buildings for use of traveling physicians as consulting rooms,
Free medical treatment to all venereal cases,
Depositing of first-aid supplies at police stations and houses of village officials,
Reduction or remission of medical fees for the poor.

Education and training through:
Offering of popular lectures on hygiene throughout the area,
Training of one or two young native women from each island of the Yap district for medical and hygienic work in their respective localities, giving them instruction at the Yap Hospital in midwifery, gynecology, nursing, internal medicine, and pharmaceutics.

Recent vital statistics appear to indicate that these remedial measures have had little effect in curbing the population decline among the natives of the Yap district.

145. Personalities

Former Residents and Visitors. A number of missionaries, travelers, scientists, and other persons who have lived in or visited the Western Carolines now reside in the United States or elsewhere. They are listed alphabetically below, with their present addresses.

Major Bodley (presumably British), journalist: made a trip through the islands in 1932-33 as special correspondent for the Sphere. Address: unknown.

Professor Paul H. Clyde (b. 1896, Canada), historian: visited Palau and Yap in 1934. Address: Department of History, Duke University, Durham, North Carolina.

Lieut. William F. Coultas (b. 1899, Illinois), naval officer, spent three months in Palau in 1931-32. Address: Room 3067, Navy Building, Washington, D.C.

Professor Henry E. Crampton (b. 1875, New York), scientist: visited Yap and Palau in July, 1928, accompanied by Mrs. Crampton and their son, to study snails. Address: Columbia University, New York, N.Y.

Dr. Albert W. Herre (b. 1868, Ohio), ichthyologist: spent one month in Angaur, Palau, and Yap in 1931. Address: Natural History Museum, Stanford University, Palo Alto, California.

Professor William H. Hobbs (b. 1864, Massachusetts), geologist: visited Palau and Yap in 1921. Address: 2078 Natural Science Building, University of Michigan, Ann Arbor, Michigan.

Mr. Henry W. Kinney (b. 1877), journalist: made a tour of the mandated islands about 1930. Address unknown; probably traceable through the State Department.

Mr. Yoshio Kondo (b. 1910, Hawaii), malacologist: spent six months in the Carolines in 1935-36. Address: Bishop Museum, Honolulu, Hawaii.

Rev. Clarence F. McCall (b. 1881), missionary: spent four years (1936 to 1940) on Kusaie and made several trips to Palau. Address: 399 Beech Street, Ashland, Oregon.

Mr. Willard D. Price (b. 1887, Canada), traveler: spent four months in the Carolines, in 1936, including visits to Palau and Yap. Address: Cathedral City, California.

Mrs. Fitz L. Reed (b. 1894, Iowa): visited Palau and Yap in 1934. Address: 215 Las Flores Avenue, Arcadia, California.

Captain Ellsworth L. West (b. 1864, Massachusetts), master mariner: acquired familiarity with the Western Carolines as a mariner and whaler in the late nineteenth century. Address: R.F.D., Vineyard Haven, Massachusetts.

Mr. Junius B. Wood (b. 1877, Pennsylvania), journalist: visited the Carolines in 1923. Address: 116 Woodridge Avenue, Silver Springs, Maryland.

Present Residents. Persons who have been reported as living in the Western Caroline Islands in recent years, and who are presumably still living there, are listed below. All known European residents are included, but only such Japanese as might prove useful. Japanese officials are listed elsewhere--branch government staffs under 214, personnel of the courts of law under 226, government physicians under 254, schoolteachers under 262, and post-office personnel under 271. The names of a few prominent natives are included. The list, arranged alphabetically by islands, is as follows:

Fais

Bunko Hijikata, a graduate of the Tokyo Fine Arts School, was reported in 1934 to have been living for several years on Fais, studying native life.

Sasuke Sugiura, a Japanese carpenter, left Palau in 1934 to join Bunko Hijikata on Fais.

Faraulep

Shinji Tamada, the Japanese manager of the Nanyo Boeki Kaisha branch office on Faraulep in 1934, is reported to be an expert on copra production and on native customs.

Lamotrek

Ramoru, a native, is reported by Japanese travelers to have been most helpful to them.

Onjiro Yamata, the Japanese manager of the Nanyo Boeki Kaisha branch office on Lamotrek in 1934, is reported to know a great deal about copra production and something about phosphate mining, and to be skilled in dealing with natives.

Palau

Fey (first name unreported), a German Missionary, was living with his wife in the village of Alklung on Ngatpang Bay on the west coast of Babelthuap in 1936.

William Gibbon, the son of a Jamaican Negro of the same name and of a daughter of a former chief of Koror, was living in Palau in 1936, when he was about 66 years of age; he is reported to speak, read, and write English and to be reliable; his six children speak only Palau and Japanese.

Ernst Lang, a German Lutheran missionary, was living in Palau in 1936; he is reported to be unreliable.

Elizabeth Lewis, the daughter of a British sea captain and a native woman, was living with the Gibbon family in Koror in 1936; she is said to speak English, German, Japanese, Chamorro, and Palau.

Pedro, a native residing in Palau in 1934, is reported to speak German, and Spanish,and to be anti-Japanese.

Morishige Sakugawa, a Japanese, was the owner of a fire-clay deposit at Nerasaka in 1931.

Wilhelm Siemer, a German Lutheran missionary, was living in Koror in 1934 but is reported to have moved to Yap in 1936.

Charles Smith (Schmidt), a Chinese-British half-caste with a native wife, was living in northern Babelthuap in 1931; he speaks English, German, Palau, and some Japanese; he is reported to have had difficulties with the Japanese over property confiscations.

Otto Umang, a native chief in Palau in 1931, is reported to be anti-Japanese; he speaks German and some Japanese, Spanish, and pidgin English.

Zimmern (first name unreported), a German Lutheran preacher who was living in Palau in 1931, is reported to be unreliable.

Ulithi

Akinaga (first name unreported), a Japanese, was manager of the Nanyo Boeki Kaisha branch office on Ulithi in 1934.

Matsuji Yamaguchi, the Japanese assistant manager of the Nanyo Boeki Kaisha branch office in 1934, was reported at that time to have had 17 years of experience in Lamotrek, Ulithi, and Woleai.

Yap

Fleming (first name unreported), a German who speaks English, German, and Spanish, was living on Yap in 1931.

Funai, a native, was village chief of Nif in 1934.

Henry Hofschneti, a German employed in the Yap Post Office in 1931, speaks English, German, and Spanish.

Masao Nobayashi, a Japanese, was manager of the Nakayama Company in Yap in 1934; in 1936 he was reported to be established in the town of Yap as a photographer.

Mrs. Scott, the half-caste wife of a British consul during the German period, is reported to live on a small island in Tomil Harbor; she speaks English fluently, drinks excessively, and is said to be very anti-Japanese.

Wilhelm Siemer, a German Lutheran missionary, is reported to have opened a mission station on Yap in 1936.

Tamak, a native who had succeeded to the chiefship of the district of Rull, was reported to be teaching in the Yap Public School in 1935.

Tol, a son of the chief of Rumung, was living in the village of Fal in 1936; he has visited Guam and speaks a little English.

Tretanoff (first name unreported), a white Russian with a native wife, two grown daughters, and a son, moved to Yap in 1926 to engage in labor recruiting; in 1933 he was reported under pressure from the Japanese to leave the island, but he was still there in 1934; he speaks German, Russian, and Japanese, and is said to be well liked by the natives.

Jesus Untalan, a Chamorro, was living in Yap in 1936 with his wife, Macaila, and twelve adult children, Manolo, Juanita, Maria, Teresa, Marcos, Tomasa (a nurse), Jose, Filomana, Urzula, Joaquina, and Felicida; they speak Chamorro, a little Japanese, and possibly a little Spanish.

15. CUSTOMS

151. Clothing and Ornamentation

Men's Clothing. Before the coming of Europeans, the basic attire for men in the Western Carolines was a long narrow band of bast or woven material, which was wrapped around the loins. On many of the islands, particularly in Palau, men not infrequently wore no clothing at all, especially when they were fishing or canoeing. The breechclout is still the most popular form of attire, except among the Chamorros, who are generally fully clothed. The manner of attaching and wearing the garment varies markedly in the different islands. In Palau it is drawn between the legs, and the front end, at about the height of the navel, is slung to the side and around to the rear, where it is intertwined with the back portion so that a small part of the end hangs down; the rear end of the band is similarly slung to the other side and around to the front, where it is intertwined, the end forming a short flap. Very much the same method is used in Tobi except that only the rear end is permitted to hang down. In Ulithi, on the other hand, only the front end forms a flap. In Yap the man holds one end of his band against his abdomen, draws the other through his legs to the small of his back, wraps it completely around his body, and then fastens it in the back, the front end being permitted to hang down as a flap. On both Ulithi and Yap, bunches of dyed hibiscus bast are tied to the breechclout in front, and on ceremonial occasions these tassel-like appendages frequently assume gigantic proportions.

The native breechclouts produced on Fais, Ulithi, and Woleai were and still are noted throughout the area for their excellence, while those produced on such islands as Lamotrek and Satawal are equally notorious for their crudeness, so much so in fact that even today the natives refer to goods of poor quality as being as rough as those of Satawal. Many patterns are produced, the more common being a black and white pattern achieved by interplaiting bleached pandanus and black hibiscus fibers. Other colors are also employed. The native fabric, particularly when new, chafes the skin, and to lessen the irritation it is generally rubbed with turmeric powder. Even then it is less comfortable than modern cloth, which for this reason has largely supplanted or supplemented the use of the native fabric. Where modern cloth is used as a supplementary garment, as in Yap and Ulithi, a native breechclout is worn over one made of modern textiles.

Yap men have shown a particular predilection for their native attire, and it is reported that children upon leaving school, and native officials employed by the government, invariably discard their European clothing before returning to their home villages. Although shirts and jackets are prized, trousers, if worn at all, are used as a shawl, the legs being tied around the neck. Shoes are rarely worn. Where a need exists for some sort of foot covering it is met by homemade wrappings, frequently plaited pandanus leaves. Japanese sandals are seen occasionally. An indispensable accessory throughout the area, particularly in Palau and Yap, is a small basket or bag, generally plaited of coconut leaves, in which are carried personal items of all kinds, including all the essentials for betel chewing. On Yap it is considered discourteous to pass in front of an upper-class person, or a group of people, without carrying such a pouch.

Women's Clothing. The women, like the men, still continue for the most part to wear their native attire. Indeed the wearing of European clothing is often frowned upon by the native community. As late as 1936, for example, a chief's daughter in Yap was compelled to discard a relatively expensive dress which she had bought. The customary women's apparel consists either of a breechclout resembling that of the men, or of a mat or grass skirt, the body above the waist being left unclad in either case. The garment is generally held in place by a string of fiber or human hair to which shell ornaments are often attached. Over this string may be worn an elaborately ornamented girdle of varying width. The girdles made on Eauripik, Ifalik, and Ngulu, are particularly noted for their ornamentation and design.

The grass skirts worn by the women of Yap have attracted considerable attention. They are the largest to be found in the South Seas and extend down to the ankles. Like the petticoats of our grandmothers, several such skirts are worn, sometimes as many as seven, one on top of another. At home, all but two are removed. When a Yap woman is attired in three or four of these shaggy fibrous skirts, they form a thick bundle around her hips which sways at every step, while the long dependent leaf fringes ceaselessly whip the ankles with a rustling sound. The outer skirt is made of colored fibers and is frequently adorned with flowers. By reason of this fact, and because the fibers and grasses used give off a sweet odor, these skirts have received enthusiastic praise from South Seas romanticists. A Japanese physician has pointed out, however, that when freshly made such a skirt may contain as much as a quart of water, that, in addition to being damp, it imposes an excessive weight on the abdominal muscles, and that, consequently, a thin cotton dress would be more healthful.

The women of Ngulu are similarly attired in a dense shaggy fiber skirt made of pinnate coconut leaves, with an overskirt or two of pandanus fiber or slit fern leaves. Ginger leaves are commonly included because of their fragrance. On Palau a single grass skirt of pandanus leaves and hibiscus fiber is worn, although there are a variety of types or styles to suit the taste of the wearer or the needs of the occasion. The skirt is shorter than that worn on Yap, reaching only to the knees. It has been described as consisting of two aprons, one in front and one in back, held together and fastened about the waist with a waist cord, the front portion usually being longer than that in the rear. In the islands east of Yap the women generally wear breechclouts or mat skirts.

Hair Styles. Unlike their neighbors in the Eastern Carolines, the men have not adopted the European customs of cutting their hair short and shaving. The hair of children is cut short, but adults of both sexes generally wear their hair either at full or at shoulder length. In a few localities, e.g., on Eauripik and Woleai, many of the men wear their hair short, but even there some of them wear their hair long. On Yap the men gather up their hair, after combing it well, and form a twisted knot or bun on the back of the head. Formerly this knot was worn on the top of the head, but only a few older men do so today. On the other islands, the long hair is gathered together as on Yap or is merely pushed back from the forehead, as on Ngulu. The natives of Tobi are particularly noted for the care they take with their fine-looking black tresses, which they wash daily and rub with coconut oil. The women of Eauripik, Ngulu, Yap, and some of the other islands part their hair and gather it together in a knot. On Yap it is coiled over the left ear in such a manner that the free ends are invisibly twisted into the coiffure. In other areas less care is taken, and the knot may be either at the side or the back of the head.

Throughout the Western Carolines it is customary for the men to wear a comb in their hair. Usually this is only for ornamentation, but on Fais and Yap the comb is one of the conventional marks distinguishing a freeman from a serf; the length of the comb, moreover, indicates the social rank of the wearer, the longer the comb the higher being the rank. The Japanese have found that cutting a man's hair short is an effective punishment on Yap, since it prevents wearing the symbols of social status.

Although beards are frequently worn, mustaches are rarely seen. Body hair is everywhere considered unattractive, and is plucked or torn out by both sexes with shell tweezers. It is even reported that in some localities the women pluck their pubic hair, but this has never been reported of the men.

Cosmetics. Both men and women anoint their bodies and frequently their hair with coconut oil, which serves to protect them from the wind, the rain, and the burning rays of the sun. The oil is sometimes scented with flowers and fragrant herbs. The body and oftentimes the face are also rubbed with yellow turmeric, a favorite aromatic cosmetic produced by grinding the roots of curcuma, soaking it in a wooden vessel, and then drying and preserving it in hardened form. In some localities, face and body paint are also applied.

Many of the natives of the Western Carolines, and especially those of Yap, stain their teeth black. Visitors have erroneously reported this stain to be the result of chewing betel. Actually, betel chewing merely discolors the teeth a dirty brown, whereas artificially stained teeth such as those of the Yap natives are a brilliant black. The teeth of both sexes are stained at the time of puberty. A paste prepared from a particular type of swamp mud and the juice of certain herbs is applied to the teeth at night, several applications sufficing to produce a brilliant ebony. The process of staining is said to make the individual temporarily quite ill. In the early years the color can be removed by assiduous scraping, but thereafter the teeth remain permanently stained and the original white can no longer be restored. From time to time, however, the edges of the teeth lose their color; and it is necessary to restain them.

Tattooing. In former times tattooing was extensively practiced throughout the Western Carolines, and it is still prevalent among the older natives. The younger people are less inclined to subject themselves to the practice because of the pain and inconvenience, the high cost, and the disapproval of foreigners. In 1922 a Japanese ordinance expressly forbade tattooing. While this has not extirpated the practice, it has doubtless contributed to its waning popularity.

Tattooing is generally confined to the arms, legs, and chest. A wide variety of designs or patterns are employed. In some of the islands, such as Elato, Lamotrek, and Satawal, very little tattooing is practiced. On Eauripik and Woleai only the arms and legs are tattooed. The natives of Fais, Palau, Sonsorol, Ulithi, and Yap practice the art more extensively, and tattooing of the entire body or a large part of it is not infrequent. The art is most highly developed on Mogmog in Ulithi, and Yap nobles formerly visited this island to be tattooed.

Tattooing was formerly surrounded with taboos and ceremonial. The art required great skill, and the process took a considerable period of time to complete. During this period neither the artisan nor the person being tattooed could have relations with women. In many instances the work could not be done in public, and was performed in a special shelter. Few of these institutional practices survive. In some areas, certain forms of tattooing were restricted to persons of high rank, and serfs could not be tattooed. These distinctions are still observed to a limited extent on Yap. Early investigators found the natives extremely loath to discuss the significance of tattooing designs. It is possible that tattooed natives may still resent undue curiosity about their designs, although mere observation and expression of admiration would not be objected to.

Mutilations. In former times the natives of both sexes practiced various forms of mutilation which are now encountered only rarely. Among these may be noted scarification of the arms, legs, and chest, piercing of the septum of the nose, a form of circumcision, and the artificial lengthening of the labia minora in females. A Japanese ordinance promulgated in 1922 forbade all forms of mutilation, but the above-mentioned practices were already on the wane at that time. A far more widespread practice, still prevalent, is that of puncturing the ear lobes of both sexes at an early age. The holes are gradually widened or enlarged by the use of discs of tortoise or cocoanut shell, or by other means. Ornaments of various kinds, including varieties of shell and cocoanut rings, are suspended from the ear lobe. In some areas, such as Eauripik, Ifalik, and Woleai, these ornaments are frequently so heavy that the lobe is often pulled down nearly to the shoulder.

152. Life Routine

Annual Cycle. The climatic variation during the year, though small, is sufficiently dominated by the northeast trade winds in the winter and the southwest monsoon in the summer to affect native fishing and agricultural activities. Breadfruit, a staple food in the coral atolls of the Yap district (see 311), yields most abundantly during the relatively wet months from April to September, whereas the steady northeast trade winds of the relatively dry months are more suited to deep-sea navigation than are the calms, variable winds, and storms of the wet season. The natives therefore divide the year into two periods: the breadfruit season (rak), which is devoted to reef and lagoon fishing and the harvesting and storing of breadfruit, and the trade wind season (efan), when the gardens are burned for planting and trading voyages and deep-sea fishing are undertaken. In the islands to the west and southwest, different names are used, but the year is similarly differentiated in accordance with the prevailing winds.

The seasonal variation is sufficient to cause temporary food shortages on the coral atolls and considerable suffering was observed by a number of early voyagers. Moreover, the Western Carolines are situated in a typhoon area, with Yap as its approximate center. Typhoons, and the tidal waves which sometimes accompany them, have periodically caused great loss of life and famine conditions on a number of the islands. In 1904, a destructive typhoon caused famine conditions on Merir, Pul, and Tobi. The low-lying coral atolls, where the natives are dependent for food upon the coconut palm, breadfruit trees, and taro, are especially vulnerable. The coconut trees which are not destroyed by a typhoon are frequently rendered unproductive for several years, the breadfruit trees are usually broken down, and taro may be washed away. Fallen coconuts, pith from fallen trees, and stored breadfruit may serve to tide the natives over for a month or two, but unless alternative food resources are made available to them thereafter, they face a real emergency. In former days a destructive typhoon meant starvation or dire famine. The development of other food resources and of transportation has mitigated but not entirely eliminated the recurrence of such food shortages in the wake of typhoons, and war conditions might well make them even more critical.

Monthly Cycle. Although the natives have now largely adopted the western calendar, to some extent they still continue to reckon time on the basis of the lunar month. The method of reckoning varies considerably from island to island. The calendar system of Yap is distinctive, being characterized by alternating annual cycles of 12 and 13 months respectively. It bears little resemblance to the systems of the other islands of the area, although it is said to have features in common with the old native calendar of the Marianas.

Daily Routine. The natives normally arise at sunrise or shortly thereafter. They often bathe, and on the atolls sometimes spend some time fishing on the reef, before breakfast. The latter is eaten about eight or nine o'clock, and is usually the lightest meal of the day. Thereafter the natives proceed about their daily tasks. In some of the islands three meals a day are eaten, the evening meal being uniformly the principal one. In

Yap only two meals are customary: a light breakfast, sometimes none; and the main meal in the evening. During the evenings the natives visit each other or engage in some form of recreation. Occasionally torchlight or moonlight fishing is undertaken. In Yap during the season for flying fish, in May and June, all able-bodied men go out in canoes every night. With the light from their torches they lure the fish from the water and catch them in nets. This is a period of continuous festivals for the natives of Yap.

Formerly, and to some extent even at present, the time of day is determined rather indefinitely by the position of the sun, and there are terms for sunrise, early morning, late morning, noon, early afternoon, late afternoon, sunset, early evening, late evening, and night. Frequently even finer divisions of the day are recognized and named, e.g., 14 on Yap, 16 on Sorol, and 21 on Pul and Sonsorol. Nowadays time is more frequently measured by the clock, especially in the larger centers of population. The Japanese have promoted this habit by installing three bells in Palau on which the hour is struck three times daily--morning, noon, and night.

Bathing. The natives of the Western Carolines bathe frequently, often two or three times a day. The inhabitants of Palau are particularly noted for their habit of frequent bathing, while those of Yap and Tobi are considered to be less cleanly. Fresh water is preferred where it is available. The natives of Palau construct bathing pools outside of their villages by digging holes in the ground and lining them with stones. The water is partially renewed only when downpours of rain cause the water to rise and overflow, and during the dry seasons the pools become stagnant. Communal bathing in these unsanitary pools subjects the natives to various infections, particularly of the eye. Strict segregation of the sexes is observed, some pools being used exclusively by men, others by women. Coconut shavings are frequently used for soap, and are sometimes scented.

Where fresh water is unavailable the natives bathe in the sea, but they save rainwater to rinse the salt from their skins. The body is usually anointed with coconut oil after every bath, with the result that dirt immediately attaches itself to the skin again and a rancid oily odor is imparted. Statements that the natives are dirty doubtless arise from this practice. The Japanese have made an effort to install public baths (see 256).

Diet. The staple foods of the Western Carolines are coconut, taro, breadfruit, yams, sweet potatoes, and arrowroot, all of them starch foods. The first three constitute the principal items of the native diet throughout the area, their relative importance varying from island to island in accordance with the quantities available and the customs of the natives. Since breadfruit is relatively scarce on Yap, it plays a minor role in the diet of the inhabitants, and the principal items of native fare are coconut, taro, and yams. The staple foods are prepared in an almost infinite variety of ways, either individually or in combination with other foods. On the coral atolls a common dish consists of a mashed vegetable to which is added either grated coconut meat, coconut milk, or bananas.

The basic starch diet is supplemented by a number of auxiliary food items such as fish of all kinds, shellfish, pork, chicken, and indigenous game such as the flying fox and various birds. In recent years rice and tinned meats have come into favor. Other supplementary food items include native fruits and nuts of various kinds. Fish are available and eaten throughout the entire area, usually in cooked form but occasionally raw, and the same is true of the various species of shellfish. The Sonsorol natives are reported to live on a diet of fish and palm wine. Pigs and chickens are found throughout the area, though the quantity locally available varies considerably. Native taboos and taste determine the extent of their consumption, particularly of pork. The pig is considered an especial delicacy on Palau, and when an animal is slaughtered the various parts must be distributed in accordance with well established customs. Yap natives, on the other hand, though they possess pigs, rarely eat the meat but prefer to use the animal in trade.

The high islands of Palau and Yap have the greatest variety of local food resources, and for this reason the greatest range of native dishes. Palau is particularly noted for its cuisine, and a number of the native dishes are reported to compare favorably with those of civilized countries and to please the taste of discriminating Europeans. The natives of Palau have developed a method of preserving fish by smoking and are able to preserve pork in the same manner for a period of a week or more, a not inconsiderable achievement in a warm, moist, tropical climate.

On the coral atolls, food is prepared in an earth oven by means of heated rocks covered with leaves. On the larger islands, open hearths and pots of iron or clay are utilized. In Palau in particular, where clay is available, pottery has long been made, and cooking over an open hearth is well established. In some islands, such as Yap, the women alone prepare the food, while in others both sexes engage in cooking. On Yap there is a taboo which prevents a man from eating food prepared for a woman, so that it is the practice to prepare the food for each individual in a separate pot over a separate fire.

To add to the difficulties of the Yap housewife, the food prepared for each person must come from the plot of ground especially set aside for him.

Beverages. The natives commonly quench their thirst by drinking the milk of green cocoonuts or the sap drawn from coconut buds. This latter beverage is secured by binding the young stems of the coconut tree which bear the flowers a few inches from the top. The top is then cut off, and in about ten days the section above the binding becomes limp and bends over, providing a natural faucet. When the binding is released, the sap oozes out through this faucet and is caught in a coconut shell or other container. Each morning and evening the tree is climbed by means of step-like notches cut into the trunk, and the sap is removed. Periodically a little more is cut from the stem until the hanging or faucet-like portion becomes too short. The sweet, slightly tart, watery juice thus obtained is considered excellent for nursing babies, and is often used by the natives as a substitute for or supplement to mother's milk. In Yap this practice was particularly prevalent, since many women were unable to nurse their babies. The Japanese administration, however, found it necessary to intervene and forbid the practice because the natives too frequently permitted the sap to stand for several days and ferment, when it becomes a strong alcoholic beverage relished by adults. Later, however, the administration, recognizing the importance of this substitute for mother's milk, permitted the tapping of one tree per child, providing permission is obtained from the government hospital.

The natives of the Western Carolines generally do not like fresh cows' milk, although they are fond of canned milk. Cider and lemonade have recently become moderately popular, but whether among natives or Japanese is not known. In 1937, imports of these beverages totaled 37,776 liters at Palau, 5,280 liters at Angaur, and 3,766 liters at Yap.

Narcotics and Stimulants. The fermented sap drawn from coconut buds, called palm toddy or palm wine, is the favorite drink throughout the Western Carolines. A Japanese ordinance forbidding natives to manufacture intoxicating liquor has restricted but not eliminated the use of palm toddy, the ordinance apparently being laxly enforced. The natives developed a taste for hard liquor when it was first introduced by traders during the last century. The use of spirituous liquors became so excessive that the Spanish administration placed severe restrictions upon its distribution and consumption. The German administration followed much the same policy, permitting its consumption only on certain days and at special occasions, and requiring payment for liquor to be made in German currency. These measures brought the use of alcoholic liquor effectively under control. The Japanese administration has continued the control of liquor among the natives (see 258).

The Japanese population of the islands consumes considerable quantities of beer and sake, which are largely imported from Japan. The following table shows the quantity of these imports, in liters, for 1937:

	Palau	Yap	Angaur
Sake (16%)	104,089	3,032	1,899
Sweet sake (25%)	743	32	-
Beer (4%)	831,546	18,588	6,040
Grape wine (13%)	3,400	206	92
Distilled spirits (30-45%)	583	-	1,274
Whisky (40-45%)	2,025	-	-
Miscellaneous	1,045	133	18
Total	943,811	21,991	9,323

In place of the Polynesian custom of kava drinking, the natives of the Western Carolines have for centuries indulged in the Indonesian practice of betel chewing. Every native carries with him as an indispensable accessory, a basket or bag in which he carries the necessary ingredients for betel chewing: a stock of the nuts of the Areca palm, which look somewhat like large acorns, leaves of the pepper plant (Piper methysticum), and a quantity of lime made by burning coral or shells and kept in a small container or cocoonut shell or bamboo. When the nut of the Areca palm is unavailable or scarce, the natives use cocoonut seeds as a substitute. After the shell is removed, the palm nut is placed in the pepper leaf with some lime and then chewed much like a quid of tobacco. The chewing extracts an aromatic and stimulating juice from the pepper leaf, and a bitter oil from the fibers of the nut. The former assumes a dirty red color when it mixes with the lime, although normally it is greenish in hue. Betel chewing darkens the teeth, reddens the saliva, and imparts an extra tinge of carmine to the lips. The quid has a very sharp flavor, and those who are unaccustomed to betel chewing feel a sort of giddiness. Elderly natives who have lost their teeth carry a small mortar and pestle with them, so that they may crush the ingredients before chewing. Everywhere in the vicinity of dwellings the ground is spattered with expectorated red fluid. The practice is indulged in by

both sexes, and frequently even by children. In certain of the islands, particularly Palau and Yap, one hardly ever sees a native without a quid in his mouth.

Second only to the native's taste for betel chewing, is his love of tobacco, which he both chews and smokes in pipes or, more commonly, in the form of cigars or cigarettes. To form a cigarette the tobacco, usually in roll form, is cut or crushed and then wrapped in a pandanus leaf. Tobacco is grown in larger or smaller quantities on most of the islands, but particularly on Fais and Palau. In the former island, after the tobacco is dried out it is wrapped in a pandanus leaf in the shape of a spindle about one foot long and used as an article of trade. The native tobacco, introduced originally from the Philippines, is strong and bitter. Imported tobacco is usually preferred to that grown locally. Preference is shown for American tobacco twist or stick, which is said to be treated with honey. It is black and sticky, and looks somewhat like a licorice stick. It is exceedingly strong and is used as an article of trade. In recent years substantial amounts of tobacco have been imported from Japan.

153. Sex and Marriage Customs

Puberty. In former times the onset of puberty, as indicated by the first menstruation for girls and the first appearance of pubic hair for boys, was marked by special ceremony and the donning of adult clothing. Girls were secluded in special menstruation huts for a period of from eight days to one month, depending upon the practice in the particular island. Either before or after this confinement they were presented to native society as marriageable, and on this occasion, a special feast frequently took place. On several islands, mothers often arranged for either natural or artificial defloration of their daughters prior to the marriageability announcement. On Yap, the period of special ceremony lasted for about a year. After being isolated for a month in the menstrual hut, the girl was required to spend the following 100 days without intercourse. Thereafter she repaired to another special hut for a period of about six months, during which time she was expected to have lovers freely. All this time the girl did no work of any sort. When the year was over, her teeth were blackened (see 151) and she was given a neck cord of blackened hibiscus fiber as marks of marriageability. She was then introduced to household and agricultural tasks, and was considered free to marry or to enter a men's club as an attendant and prostitute. Ceremonies for pubescent boys throughout the Western Carolines were considerably less elaborate than for girls. Often the only visible change was the addition of the breechclout to their costume. In recent times, the influence of the missionaries and the public school system has probably resulted in at least partial modification of some of these practices.

Premarital Sex Relations. Premarital chastity was esteemed nowhere in the Western Carolines. As soon as girls and boys passed puberty they were expected to experiment as lovers, and even before this time many indulged in sexual intercourse. Few if any girls were virgins at marriage, and men did not value chastity in a prospective wife. It is reported for the Yap district that sexual play began among children at the age of five or six, and that their early attempts at promiscuity were regarded as games by their elders. Unmarried girls on Yap and Palau often served periods of sexual apprenticeship at the men's clubhouses for a considerable time between puberty and marriage.

Public schoolteachers and particularly the missionaries have striven to inculcate Western ideas of morality, and this pressure has probably had the effect of making the natives more virtuous. The old pattern, however, is apparently difficult to eradicate, and while the natives are now less open in their premarital liaisons than formerly, a very high proportion of the young people still indulge in them.

Extra-marital Sex Relations. The freedom allowed to the unmarried was not extended to the married, among whom fidelity was in general expected. The philandering of married men with unmarried women constituted a special exception. A married woman caught in an act of unfaithfulness was sometimes beaten and cast off by her husband, but more often she went unpunished. The male adulterer, however, was nearly always attacked and sometimes even killed. The affair was usually settled by requiring the adulterer to forfeit all his belongings or to pay a heavy fine in the form of a canoe, clothing, stone or shell money, or other prized items. These restrictions did not suffice, however, to prevent clandestine affairs from occurring with considerable frequency.

Since conjugal fidelity was expected on the basis more of property relationships than of virtue, it was not unusual for a husband to lend his wife to visiting friends or relatives, particularly brothers, or to ignore wife "stealing" if done with his consent. Furthermore, a man usually had sexual access to his wife's unmarried sisters as well as to other unmarried girls in the community and at the men's club. The missionaries have tried of course, to put an end to such practices, and have doubtless had a measure of success in the few islands where their influence has been strong.

Sexual Restrictions and Taboos. Theoretically, sexual relations between members of the same clan and between close relatives are prohibited, but the rule is not infrequently broken. Sexual intercourse is also taboo for men on the following occasions: before and during important fishing expeditions, before playing a major part in a religious ceremony, and during the construction of an important public work, house, or canoe. It is taboo for women during menstruation, and after childbirth for periods ranging from two months to a year, or until the child is able to walk, depending upon the custom in the particular island. The prohibition of intercourse during pregnancy varies. In the Yap district intercourse during pregnancy is generally prohibited, but in the southwestern islands (Sonsorol, Pul, Merir, and Tobi) it is sanctioned until quite late in the pregnancy. On Yap, intercourse is reported to be taboo during certain seasons of the year and under particular conditions of wind and weather. Furthermore, any native who plans a trip away from Yap is forbidden to have sexual relations for one month prior to his departure, during his absence, and for one month following his return.

The natives of the Western Carolines observe a strict etiquette in various matters concerning sex. Discussion of sexual matters or use of sexual terms in mixed company is taboo. Touching the parts of women's bodies covered by the grass skirt and undressing by men in the presence of women are also considered serious offenses against decency and entitle the husband or male relatives to punish the guilty person. Women are expected to conduct themselves in a manner of conventional bashfulness and restraint, particularly in the presence of their husbands, male relatives, and paramount chiefs.

Prostitution. Although prostitution in the usual sense did not exist in the Western Carolines before the coming of Europeans, there were native customs on Yap and Palau which somewhat resembled it. In these islands it was the practice for each men's club to maintain several unmarried girls at the clubhouse to perform the work and to bestow their favors upon club members. The girls, known as mespil on Yap and as armengol on Palau, were obtained almost entirely from neighboring villages because of the prevailing taboos against sexual intercourse with members of one's own clan. As a rule, prior arrangements were usually made with the girls, their parents, or their village chiefs. A raiding party would then be formed, and the village would be visited at night for the purpose of abducting the girls while the villagers slept. If the villagers awakened, custom required token resistance to the abductors, and a brief fight generally ensued. The resistance, however, was not great, since payments in food and shell or stone money were almost always subsequently made by the abductors to the parents and sometimes to the whole village. In some cases, girls were supplied regularly by villages which were of a lower social status or which had previously been subjected in warfare. In still other cases, girls were exchanged between villages through mutual agreements.

Girls furnished by socially inferior or subjected villages were often bound to the clubhouse for life. Those obtained through purchase were expected to stay at the clubhouses for periods ranging from three months to a year. However, they frequently stayed longer because the perquisites of the position were considered quite attractive. While in residence at the clubhouse, they did menial tasks but they did not have to work in the fields as other women did. Club members kept them supplied with food, clothing, and such luxuries as tobacco and betel. In addition, the girls were privileged to participate in or witness many political and ceremonial activities to which other women were denied access. If a girl had been brought into the club exclusively through the efforts of one member, she was generally treated as his private property, but since most girls were acquired through joint effort, they were accessible to all members, usually in rotation. After serving her initial term, the girl was free to stay on at the clubhouse or to leave and marry. Actually, marriages with club members often resulted. Moreover, since the girls gained prestige in their own communities because of their stay at the clubhouse, there were always a number of males back home who were anxious to obtain a girl with such experience for a wife, especially since club members frequently gave the girls presents and money when they departed. In the area of the clubhouse, however, the girls were ranked lower socially than other women in the community.

Several restrictions were placed on this custom during the German administration, largely because it was thought to be partly responsible for the declining birth rate among the natives of Yap and for the relatively static birth rate on Palau. It is reported that the Japanese government has attempted to obliterate the custom altogether.

With the coming of Europeans and Americans to the islands, the prevailing laxity of morals favored the quick development of prostitution in the usual sense. Many natives found they could make a considerable profit by providing their daughters and sisters, and sometimes their wives, to visiting traders for a fee. The women involved were usually not at all averse to such arrangements, since it added to their prestige to have relations with white men. The practice of demanding fees appears to have spread soon thereafter among native women in their relations with native men, particularly in the Palau district where the avarice of natives for foreign goods and money developed comparatively rapidly.

Sexual relations with foreigners led to the wide dissemination of venereal disease among the population (see 251). Both the missionaries and the Spanish, German, and Japanese governments have attempted to stamp out prostitution, and apparently they have met with some success.

An ordinance of the South Seas Government makes any person who has prostituted himself, or pandered, or let rooms for immoral purposes liable to a punishment by detention for a period not exceeding 30 days or to a minor fine not exceeding 20 yen. Detected prostitutes, moreover, must submit to a medical examination and if found diseased must submit to medical treatment.

Although no system of licensed prostitution exists in the mandated area as is the case in Japan, it is known that Japanese geisha, shakufu ("bar maids"), and Jokyu ("waitresses"), who commonly indulge in prostitution, have been imported into the islands. In 1937, 77 geisha, 155 shakufu, and 93 Jokyu were officially reported in the Palau district, and one arrest was made for a violation of the regulations concerning prostitution. No prostitutes or arrests were reported in the Yap district for the same year.

Acquiring a Wife. In the Western Carolines, native marriages often result from premarital love affairs, but it appears that they are more frequently effected on the basis of material considerations. There is actually little connection between sex and marriage, owing to the prevailing laxity of morals, and men marry largely to acquire a wife to cook for them, work in the fields, and bear children. Childhood betrothals are frequently arranged on Palau and the adjacent islands, and to a lesser degree elsewhere in the Western Carolines. The natives usually marry while quite young, the age of marriage being from 12 to 15 as a rule. When a young couple decide that they want to marry, the youth usually discusses the matter with his family, and if they agree, he calls upon the girl's parents and presents them with gifts, usually food but sometimes money, ornaments, and clothing. If the girl's parents also agree, a feast is arranged, at which time the parents of both bride and groom usually exchange presents. On Yap this exchange frequently involves both food and shell or stone money. The money exchange was formerly of economic importance but nowadays is principally a matter of prestige and a mutual exhibition of possessions reflecting wealth and social position. On Palau, the groom's family present money to the bride's family, and the latter reciprocate with taro and other foods. On other islands the exchange between parents usually consists only of food. The practice of paying a bride-price appears to be absent except on Palau, where the prospective son-in-law is expected to make a money payment in addition to the presents made at the time of the proposal, or to perform an equivalent amount of service in the household of the bride's parents after the wedding.

Except for the banquet, which is usually attended by the parents, relatives, and clan and village chiefs, the marriage ceremony is not at all elaborate. As a general rule, the bride and groom simply participate in the feast and then proceed to their future residence. If a bride or groom is a church member, the ceremony may take place at the church, where, of course, it will be considerably more elaborate. However, it appears that the influence of Western religions upon native marriage customs has been relatively negligible in the Western Carolines.

In former times, marriage was completely exogamous, i.e., a man could not marry anyone in his own clan. Since clan relationships are determined matrilineally everywhere in the Western Carolines except in the southwestern islands of Merir, Pul, Sonsorol, and Tobi (see 162), this meant that a man was free to marry any girl except one related to him through his mother or her female relatives. On Yap, however, the practice of living in patrilocal groupings resulted in the imposition of an additional taboo against marriage between persons related through the father. In the southwestern islands, where clan relationships are determined patrilineally, a man was free to marry any girl except one related to him through his father or the latter's male relatives. Nowadays, except on Palau, the clan prohibitions are less rigidly observed and a man may generally marry any girl except his sisters or close female clan relatives. On Palau, the clan prohibition is still rigidly observed, and a man cannot marry any girl in his own household or in any household of his own clan in any other village, but he may marry into a household that is paired with his own in the dual village organization (see 162). Another restriction concerning marriage is that of social status (see 164). Marriage between free natives and serfs or slaves is prohibited, although marriage between highest-ranking slaves and lowest-ranking freemen is sometimes permitted by the chiefs. In such cases, however, if the man is of the higher social class, he always goes to live in the village of his wife and thus does not lose his social ranking. As a general rule, men marry women of their same or a lower social class.

Residence after Marriage. There is no hard and fast rule governing where the couple shall live after they are married. As a general rule, married couples on Elato, Faraulep, Ifalik, Lamotrek, and Satawal live in or near the home of the bride's parents.

On Sorol, Woleai, Yap, and the southwestern islands of Merir, Pul, Sonsorol, and Tobi, they usually establish themselves in or near the home of the groom. In Angaur, Palau, and Kayangel the couple usually set up housekeeping in or near the house of the groom's maternal uncle. If, however, the groom is unable to make satisfactory gifts and other payments for his bride, he usually binds himself to serve in the home of his wife's parents for a period of time, and the couple reside there until the obligation is fulfilled.

Polygamy. In former days, a man could marry as many wives as he could afford. This meant, in actual fact, that polygamy was largely restricted to wealthy chiefs and nobles, principally on Palau. However, polygamy was apparently prevalent among all social classes in the southwestern islands, where custom limited the number of wives to two or three, depending on the particular island. This may have been due largely to the fact that families on these islands lived in the village of the father's clan, and that when a husband died his widow was inherited by one of his surviving brothers. In view of the prevailing laxity of morals in the Western Carolines, polygamy was probably due more to social, political, and economic considerations than to sensuality. Monogamy is the rule today, although polygamy is still not altogether unknown. There are no reports of polyandry anywhere in the Western Carolines.

Divorce and Remarriage. Divorce has always been easily obtained in the Western Carolines and is still frequent. As a rule, if mates find they cannot live together harmoniously, they simply separate. Mutual agreement to dissolve the marriage is not required, however, and it is not unusual for either husband or wife to take sudden leave without prior announcement and to return to his or her parents' home. In the event of divorce between persons of unequal social status, the wishes of the higher ranking mate take precedence. In the Yap district, the children of a divorced couple, if they are old enough to leave the mother, regularly remain with the father. In Palau, however, they go to live with the mother.

In most cases, the first of a divorced pair to remarry must pay a forfeit to his former spouse, and sometimes his family must similarly recompense the former spouse's family or relatives. Customs regarding remarriage are generally the same as for a first marriage. A widow, if still of marriageable age, frequently espouses a brother of her deceased husband, and a widower, conversely, often marries a sister of his deceased wife. As a rule, there is very little mourning and another marriage follows quickly for the widow or widower.

Menstruation. A woman is considered to be unclean during her periods of menstruation. On Yap she is required to repair to a village hut (dopal) which is specially constructed for this purpose for all the women of the village. Here she must remain in isolation for the duration of her period. After returning home she must keep to herself, and must not prepare either her own or the family's food for a period of another five days. Similar customs exist in the other islands of the Western Carolines, although each household generally has its own menstrual hut (see 323). It is possible that today in some islands other than Yap, the women may confine themselves within the main dwelling itself rather than a special hut, but this has not been specifically reported.

Pregnancy. As soon as it is obvious that a woman is pregnant, a feast announcing the fact is often given in her honor. Thenceforth until the birth of the child she must observe dietary restrictions. As a rule, bananas, fish, and certain kinds of taro must be avoided. On Yap, the father also must observe food as well as work restrictions. He must not eat bananas, fish, tortoise, or coconuts which have fallen from the tree, and must carefully avoid certain tasks such as felling a tree, twisting a rope, or removing stones from the shore, as well as noisy work on a house or a canoe. All these taboos reflect superstitions concerning the safe delivery and future well-being of the child. On most islands, sexual intercourse is avoided during pregnancy and for several months after the child is born, although this rule is not rigidly observed. In many cases, native medicine men are called in from time to time during pregnancy to administer magical conjurations, and frequently native medicines. On Palau, the woman nearly always returns to her parents' home before the sixth month of pregnancy, and thereafter much feasting and exchanges of presents and money take place between families and relatives.

Childbirth and Postnatal Care. When labor pains begin, the woman generally retires either to the menstruation hut or a special maternity hut, except on Palau where delivery usually takes place in her parents' home. A native midwife is commonly summoned to take charge, and other female friends or relatives lend assistance. The father and other men frequently remain nearby, but do not attend the delivery, being called in only if the birth is a difficult one and additional help is needed. After the infant is born, it is washed off with warm fresh water and rubbed with coconut oil. The mother goes to the sea and bathes in salt water and then returns to the maternity or menstrual hut, where she remains with the baby for several days before returning home.

154. Funeral Practices and Religion

Burial. Throughout the Western Carolines the body of a deceased person is washed, anointed with a mixture of coconut oil and turmeric dye, and wrapped in mats. Variations in funeral practices are, however, far more apparent than similarities. In the eastern islands of the Yap district the original practice was to scoop out the sand of the beach with sticks and coconut bowls, and to mark the shallow graves with small mounds surmounted by coral slabs. More recently the practice has been to weight the body and to drop it into the ocean off the reef. In either case, burial was rapid, occuring in the afternoon of the day of death, or on the following afternoon if the death took place in the evening.

On Yap it was considered that the longer the interval between death and burial, the greater the honor shown to the deceased. Consequently a great chief might not be buried for several weeks or a month, and in some cases the body was embalmed and kept as a mummy. The usual practice, however, was to bury the body on the second or third day after death. Because of the belief that the corpse polluted all those who came in contact with it, the women who prepared it for burial were isolated for a month thereafter. The pall-bearing was left to serfs, who carried the body to the cemetary, located at the outskirts of a serf village. Above the grave there was erected a low, wide platform of coral or slate with from one to six terraces depending upon the rank of the deceased. Decorative shrubs and coconuts were planted around the tomb, and then it was forgotten.

The Palau natives, not sharing the Yap belief that the dead pollute the ground around them, buried the corpse under the stone platform in front of the house. On Merir, Pul, Sonsorol, and Tobi immediate sea-burial was practiced. The bodies of wealthy persons were set adrift in canoes. For those who did not own a canoe, the burial was cruder: the chin was fastened with ropes to the chest and the lower leg to the thigh, and the corpse was placed on the reef at low tide. Children who had not yet cut their teeth were buried in a grove of palm trees near the women's clubhouse, and their graves were marked by small wooden huts.

The position of the body in burial was important on those islands which practiced interment. The general custom, followed on Palau, was to place the body on its side with the head towards the east. In certain parts of Yap, however, the position of the body varied with the manner of the death: if the person died from old age or an ordinary disease, he was buried with the head to the west and the knees drawn up; if he died in battle, the head was oriented to the north and the legs and body were extended; if he died of bronchial disease or tuberculosis, he was buried face downward with the knees drawn close to the chest.

Japanese are usually cremated. An hour before dawn the boxed body is placed on an iron tray and slid into a large furnace. When the burning is over, the tray is removed. The bones are unceremoniously dumped nearby, but the ashes are respected and in most cases sent back to Japan. The Japanese have set up a crematory on Yap and one on Palau. To the natives the idea of cremation is said to be very repugnant, and they have resisted all efforts to introduce the custom among them. However, it is reported that those who formerly practiced sea-burial have in many cases abandoned this method in favor of interment.

Mourning. The native pattern of mourning includes a vigil by the relatives with the body, during which the virtues of the deceased are extolled and dirges are sung, followed by wailing at the grave, an exchange of gifts, funeral feasts, and a short period of celibacy for the widow or widower. Here again there are variations from island to island. On Palau, where mourning is chiefly the women's business, the men gather in small groups in the yard of the deceased and converse in low tones. Inside, the women express their sorrow either in a series of individual laments voiced in the same cadence or in dirges sung by the whole group. During intermissions they eat, chew betel, and chat quietly. At the grave, while the men throw dirt on the body with their hands and feet, the women kneel and wail loudly. The more distant female relatives are rewarded for these services by presents of syrup and of objects made of tortoise shell, and by the restrained banquets which customarily take place on the fifth and tenth days after burial. Meanwhile, a temporary hut has been erected over the grave, and one member continues the vigil, pushing a tiny portion of all food eaten into the ground. The group mourning and banquets for important persons usually last for a period of ten days. Mourning by the immediate family may continue for another three months.

On Yap the distant female relatives who mourn are paid in shell money for the songs during the vigil and for the wailing at the grave. The emphasis, however, is placed on holding a carnival of eating and dancing in honor of the dead. The relatives may have to wait two or three years after the death before they can accumulate sufficient

coconuts, taro, and pork for the feasting and enough money for presents to the dancers and guests; even then they may have to go into debt for the occasion.

Supernatural Beings. The supernatural beings in which the natives formerly believed may roughly be classified into heavenly gods, gods of nature, earthly gods, and lesser spirits. Least important of these, from the native point of view, were the heavenly gods, who were glorified human beings dwelling in paradises variously located in the sky, on uninhabited islands, or under the sea. With the exception of the much-feared god of death, they passed their time in their own human-like activities and rarely meddled in earthly affairs. The nature gods, such as the divinities of the wind and rain and typhoon, were deified natural phenomena. They were particularly feared in the small islands east of Yap and southwest of Palau, where they were appeased by sacrifices of food.

In Yap and Palau, chief concern was paid to the earthly gods and lesser spirits. Seven great earthly gods resided on Yap. Originally the guardian spirits or deceased ancestors of the more powerful families, they had increased in importance until they were feared by a whole district. In addition to their intense interest in the affairs of the natives of their own district, each was able to influence some activity of native life for the whole island. The natives believed that the spirits of these gods lived in seven stones, which were located in inaccessible groves scattered througout Yap. Less powerful, but the source of perpetual anxiety to the natives, were spirits who could ward off or cause accident, illness, and death. These were the spirits of deceased ancestors who took up a temporary abode in fish, birds, snakes, or inanimate objects.

In Palau each family had at least one patron god and goddess. Here, as in Yap, the household gods of the leading families became the political gods of villages, districts, or leagues of districts, depending on the fortunes of their family. These political gods influenced only major events involving the whole community; the problems of the individual were usually the concern of the household divinities. Both types of gods had their "canoes" in which they frequently visited the earth. The "canoe" of the political god was an altar suspended in the house of worship built in his honor. Oftentimes this altar actually took the form of an out-rigger canoe. Household gods liked to frequent the storage shelf on the roof-beams inside the native house along the front wall. They might also frequent the body of a particular animal, with the result that for each native there was a species of fish or bird which he could not eat.

Religious Specialists. All the natives believed they had a limited power to win the protection of the lesser spirits and to guard against their malignant outbursts. Part of this power came from charms purchased from medicine men, part came from the knowledge of magical phrases. This belief was especially prevalent on Yap, where natives carried magic baskets with charms against poisoning, illness, and even against theft of the basket, and where almost every movement was accompanied by a muttered magical formula. In Palau the power was vested chiefly in the hands of the head of the household, who made the sacrifices to the family god. Everywhere, however, specialists were consulted for non-routine matters. Most of these specialists were mere medicine men and soothsayers, who had inherited the ability to control a few of the lesser spirits. A few at the top of this hierarchy served as high priests in addition to being the natives' doctors for serious illnesses (see 254) and forecasters of the future. As high priests they decided what the ancient customs had been and meted out punishment in those rare cases where fear of divine retribution was not strong enough to keep a native from breaking one of the many dietary or sexual taboos. Because of this, and still more because they alone could communicate with the supreme local god and understand his answers, their power was great. In the islands southwest of Palau the high priest was often equal in rank to the head chief. In Palau, where the priesthood was not hereditary, any man who convinced his fellows that his spirit had been replaced in part by the spirit of the local god, became a priest and decided how high a position he wished to occupy in the society of his community. Occasionally he would declare himself head chief; more often he became merely one of the ten ranking chiefs. The power of these high priests was shorn by the Germans, who placed a ban on their activities and sentenced several of them to penal labor on Saipan in the Marianas. In Yap the position of high priest was held by a younger branch of the chief's family, and the chief could remove an incumbent who became too independent.

Religious Ceremonial. The chief religious ceremonies were in honor of the great earthly gods. In Yap a definite period, sometimes as long as a month, was devoted annually to the worship of the god of the locality. During this period the high priests placed food before the stone in which the spirit of the god resided, and the sacrifice was eaten by the large lizards who dwelled in the grove. Laymen did not witness this ceremony. Their part consisted in preparing for and enjoying the nightly festivals, at which huge piles of taro, coconuts, and pork were consumed and ritual dances were performed. One of the favorite dances symbolized the life cycle of the lizard from his

conception through his stalking of prey to his final death beneath the club of the hunter. In Palau religious ceremonies were held principally on the occasion of a victory over the enemy to thank the god for his help. Here, too, the high priest would offer sacrifices of food to the god, but for the layman the banquet was the memorable part of the ceremony.

Divination. The priests claimed that their gods communicated to them the fortunes of battle and other important future events. But divination was also practiced by a group of soothsayers who asserted that they could predict the outcome of a voyage, agricultural undertaking, or illness. Some of them used cloud formations, the edges of a broken Areca nut, or the wrigglings of snakes as the source for their predictions. But the most common method was to have the anxious client repeat his question aloud as he tied knots at random in four strips of cocoanut leaf. Certain numerical combinations of knots were favorable, others unfavorable. If any of these prophecies failed, that failure could be blamed on some irregularity in the client's conduct or on the intervention of some powerful spirit who had thought the payment of money or food to the soothsayer insufficient.

Conversion to Christianity. The Western Caroline Islands were the last in Micronesia to be directly affected by Christianity (see 134), and have consequently been the least influenced by it. The missionaries who have worked in the islands have all, until 1930, been Spanish or German Catholics (see 134). Official Japanese figures for 1937 indicate that native Catholics numbered 2,394 out of a total native population of 5,857 in Yap, and 2,113 out of a population of 6,449 in Palau. Catholic church and mission activities in the area are organized under the Apostolic Vicariate of the Marianas, Caroline, and Marshall Islands, the administrative seat of which is located on Dublon Island in Truk. In 1939 the vicar apostolic was Monsignor Iacobus Lopez de Rego Labarto.

Since 1930 the Nanyo Dendo Dan, a Japanese Congregational mission organization, has sent a number of German Protestant missionaries to the Western Carolines (see 134). Their activities have met with such success that in 1937 1,406 native Protestants were reported for the Palau district.

Buddhism and Shinto. Many of the Japanese inhabitants are professing Buddhists; their number was reported as 2,060 in 1937. Both Buddhists and Shintoists of the Tenrikyo sect have engaged in a certain amount of missionary activity among the natives (see 134). In 1937, one Buddhist and two Shinto temples were reported in the Palau district, and in 1941 a South Seas National Shrine was established at Koror with Takeo Miyachi as priest (see 213).

Governmental Control of Religion. The terms of the mandate of the League of Nations obliged the Japanese Government to allow freedom of worship and to permit missionaries of other nations to pursue their calling in the islands. The Japanese have for the most part abided by these terms. Indeed they have gone even further. According to an official statement, the Japanese Government recognizes "religion to be a powerful factor in the moral elevation of the natives." Accordingly, it not only permitted a resumption and extension of missionary activities but has even granted substantial subsidies to missionary bodies, as much as ¥ 8,000 a year to the Spanish Jesuits and commonly ¥ 22,000 a year to the Japanese Nanyo Dendo Dan.

The government has, of course, exercised considerable supervision over missionary activities. It has declared that it would place no restriction upon missionaries so long as their activities were not considered prejudicial to public peace and good morals. While it has never brought charges against missionaries on such grounds, it has undoubtedly discouraged the missionary educational program (see 262) and has in other ways made its control felt.

Formal regulation of religious institutions did not begin, however, until 1931. In that year an ordinance of the South Seas Government required persons desiring to establish a temple, church, preaching station, or private or public school to obtain recognition from the Governor by presenting a statement covering the reason for its establishment, the time, its name and location, details of construction (with a plan of the premises), the faith to be propagated, the methods of management and maintenance, and the qualifications and mode of selection of personnel. It was also specified that managers of missions already established should obtain recognition in the same manner and make an annual report to the Governor. Since 1938 formal governmental control has become much more rigorous, and all religious organizations have been officially co-ordinated.

Native Religion Today. Although little precise information is available, it is believed that the native religion is still strong today except in the thickly settled areas of Palau. It seems probable, also, that in most cases where the natives have embraced Christianity, the conversion has been only skin-deep. It is relatively easy

for the natives to convert their aboriginal concepts of heavenly gods and nature deities, but it is far more difficult for them to give up their beliefs in the earthly gods and lesser spirits and the practices associated therewith.

155. Art and Recreation

Decorative Art. The natives express their sense of color and form in their textiles and woodwork (see 321) and in their tattooing (see 151). They use geometric designs in their mats and textiles, and their favorite colors are red, yellow, white, and black. Utensils were formerly undecorated or at most dyed red, with the exception of Palau, where mother-of-pearl inlay on bowls was not uncommon. The private houses are plain, the only common decoration consisting of colored lashings around the poles and rafters. The men's community houses, however, are often richly adorned with paintings and carvings on the gables and rafters. Artists were far more advanced in Palau than elsewhere in the area, and public houses were richly decorated with carved human figures and with painted friezes of men and animals. The human figures, which depict the body from the front and the head and limbs in profile, bear a certain resemblance to Egyptian sculpture. For the most part they are conventionalized copies of previous work, but occasionally original friezes illustrating a folk tale appear (see 323). As the importance of the men's clubs and of the sacred cults dwindled, this form of decoration has been abandoned. The Japanese have attempted to turn the skill of the carvers to the production of small human figures for the tourist trade.

Dancing. Dancing was formerly a favorite pastime of the natives and formed a part of nearly every festive ceremony. The typical dance was similar to the Hawaiian "hula" and consisted of rhythmic gestures and body movements, performed in unison by a group seated in a circle or standing in long rows. The dances were invariably set to chants, and often the dancers accented the rhythm by beating their bodies with the cupped palm of the hand or by striking bamboo sticks together. Although the significance of much of the pantomime has long since been forgotten by both performers and audience, in certain of the dances of war and love it is unmistakable. Because of this, and because the dances often turned into night-long revels, the missionaries endeavored to stamp them out. The German and the Japanese administrations backed the missionaries in the hope of removing one of the chief causes of absenteeism. As a result, native dancing is now practiced in much greater moderation than formerly.

Music. There are no native musical instruments in the Western Carolines. The drum was unknown. The conch-shell trumpet was used as the chief's signaling device and not as a musical instrument. The bamboo flute and coconut-leaf pipe were regarded as toys for children. Singing, however, was highly developed. The melody was always simple and covered a narrow range. Each sentence repeated the cadence, with the result that the whole song resembled a Gregorian chant. Although the lyrics usually told of love or the deeds of a great chief, there were occasional satirical songs and dirges. In recent years ukeleles and guitars of Japanese manufacture have become popular with the natives, and a few phonographs have been bought by those who can afford them. However, singing is still the favorite form of musical expression.

Games and Pastimes. Except for Yap, where the only adult game was a form of checkers, native games were enjoyed by adults as well as the young. Wrestling, spear-throwing, foot-racing, tugs-of-war, prisoner's base, a ball game in which a mass of coconut fronds was kept aloft by blows with the flat of the hand, and swimming and diving contests were the most popular men's games. The Japanese have encouraged this interest in sports and have founded young men's associations (see 166) in the principal villages. Baseball, introduced through these associations, has become very popular with the natives, and intervillage games are played on most of the Japanese holidays. In Palau the local young men's associations send uniformed teams to Koror to compete in an annual track meet, and the ensuing rivalry has helped to break down class lines. However, even today, of all forms of recreation, gossip stands preeminent. Nearly every evening the men and women assemble to talk over the events of the day and to speculate about the future.

Places of Amusement. Certain places of amusement, located mainly at the larger centers of population such as Koror in Palau, cater principally to a Japanese clientele. In 1937, one hotel and two lower-class restaurants were reported for the Yap district and six hotels, 13 upper-class restaurants, and 42 lower-class restaurants were reported for Palau. The Palau establishments employed 147 female receptionists, 77 geisha, 155 barmaids, and 93 waitresses, many of whom engaged openly or clandestinely in prostitution (see 153). The figures for Yap reveal no women in any of these classifications. Motion pictures are shown occasionally (see 274).

156. Native Warfare

Intertribal Wars. Before warfare was finally outlawed, the natives of the Western Carolines were continuously exposed to the dangers of raiding parties and of large-scale warfare. The small islands lying to the east of Yap were often pillaged by warriors from Yap. Merir, Pul, and Sonsorol launched frequent raids against one another, which ended when a few persons had been kidnaped or killed. Warfare on a large scale was carried on only on Yap and Palau. On Yap, wars were conducted between villages, districts, or leagues of districts. The principal causes were shortages of women or of money. In a typical affray, permission to wage war would be obtained from the paramount chief of the traditionally neutral district of Tomil, warning would be sent to the opponent, and then leisurely preparations would be made, the most important of which was the swallowing of medicines with power to prevent spear wounds to the heart, liver, head, or stomach. The battlefields, situated in the cultivated lands or on the hills between the feuding villages or districts, were always the same. The warriors would take shelter behind previously prepared stone or earthen walls, while slaves threw rocks at the opposing party. Then they would rise up cautiously and hurl their spears. When several persons on one side had been killed or seriously wounded, their side would sue for peace and pay a money fine. The victors were satisfied with this and with the temporary display of their victims' heads on poles; very seldom did they attempt to establish hegemony over the conquered district.

On Palau the districts were aligned in two roughly equal leagues, headed respectively by Koror and Melekeiok. A state of war between the leagues was normal, and great sea battles between fleets of war canoes were not uncommon. If the losers also lost a rear-guard action on the beach, their movable property was seized and their houses burned. With the introduction of firearms, however, these battles at close quarters grew so murderous that the natives came to rely more and more on small-scale ambuscades, which yielded them the head of an unsuspecting enemy at small risk.

Resistance to Europeans. During the period of early contacts there were a number of serious attacks upon Europeans (see 132), but these decreased after the British sent punitive expeditions to Palau and after the Spaniards established a garrison on Yap. Since 1906, when German administrators crushed an incipient revolt led by the medicine men of Palau, the natives have been completely pacified.

157. Attitudes and Values

Ethics. The main ethical and moral ideas of the vast majority of the natives are still derived from their aboriginal religions. Their code is simple: only conduct that violates a specific taboo is sinful, and sinners can expect immediate punishment from the gods, the priests, or the chiefs. Those few natives who have been converted to Christianity (see 134 and 154) have been schooled by the missionaries to regard drinking, dancing, sexual irregularity, immodesty, lying, stealing, and aggressiveness as sinful. Most of the younger natives have been exposed in the Japanese public schools (see 262) to one hour a week of "ethics," which consists mainly of political indoctrination.

Prestige Motives. On Yap the natives can buy their way from the lowest to the highest rank within their village, whether it is free or serf. When a native reaches a certain age, he is advanced in rank, provided he has accumulated sufficient money to pay the members of the rank he is entering. On Palau, a commoner who convinces others he is divinely inspired may become a high priest and a chief. Elsewhere in the Western Carolines, status is almost completely determined by birth and age (see 164).

Attitude toward Half-Castes. Half-castes, if they are the product of a marriage between a native of high rank and a respectable European or Oriental, are highly regarded. They share the prestige of their foreign parent, Europeans in particular being commonly regarded as of noble class.

Attitude toward Japanese. The native attitude toward Japanese can best be described as apathetic. The majority neither feel any strong loyalty to Japan nor have any marked resentment of Japanese domination. In some localities bullying Japanese policemen or officials have aroused antagonism, but in general the policy of local officials has been to avoid trouble by permitting the natives to go their own way as much as possible. Consequences of the war, such as stricter surveillance, blackouts, and compulsory training for military defense (see 233), may very well have caused some resentment which the Japanese have not succeeded in turning against the Americans, but this should not be exaggerated. A few natives who have gained materially or socially by ingratiating themselves with the Japanese (see 145) will undoubtedly be found to be pro-Japanese in varying degrees. They represent, however, a small minority of the population.

In their propaganda program (see 263) the Japanese have rewarded natives for citizenship by honoring them and by awarding them trips to Japan. In most cases this is reported to have had relatively little effect upon those so honored. The propaganda line of stressing the invulnerability of the Japanese is one which will recoil against them when they are defeated. The Greater East Asia Co-prosperity Sphere, if it has been publicized in the Western Carolines since the war, is not likely to appeal to natives who have had so little recent experience with racial discrimination and exploitation by Europeans.

Attitude toward Americans. The natives have had almost no contact with Americans. Towards the end of the nineteenth century an adventurer by the name of O'Keefe, who claimed to be an American, created a favorable impression on the chiefs of Yap, for whom he imported large quantities of stone money (see 133). There are no American missionaries in the Western Carolines, and few American traders or travelers have visited the islands in recent years (see 145). Consequently most of the natives' knowledge of the United States has been acquired in a distorted form in the Japanese public schools. It is believed that the natives will be apathetic at first and that their friendship will have to be won.

158. Etiquette

Hospitality. The natives are extremely hospitable. They always offer food to a visitor, and the latter may either accept or decline, depending upon the degree of his intimacy with the host and the circumstances of his visit. If nightfall is near, they will offer the visitor a mat in the house of a man of equal rank, European visitors being accommodated in the men's community house or in the house of the chief. This hospitality is extended with an expectation of tangible reciprocation, and the host often makes a mental calculation of every scrap of food consumed. As a result, some missionaries have adopted the pattern of offering tea and ship's biscuits to the natives who visit them. This form of etiquette is to be recommended in dealing with native chiefs.

Greetings. Natives of the same social class greet one another by asking the questions, in the appropriate native language, "Where have you been?" or "Where are you going?" rather than "How are you?" or "How do you do?" In the southwestern islands this was at one time accompanied by a rubbing of noses, but this custom is reported to have been replaced by a symbolic raising of the hand to the nose, or abandoned altogether. The handshake, introduced by early European visitors, is sometimes used between acquaintances of the same social standing. In the old days a man did not verbally greet or shake hands with a married woman, particularly in the presence of her husband, for this would have been regarded as a sexual advance. This avoidance is still observed in many parts of the archipelago.

Deference to Chiefs. An elaborate court etiquette existed throughout the Western Carolines in aboriginal times and has not entirely disappeared even today. When a commoner met a chief on a path, he had to step aside and bow low. If it were necessary to pass in front of a chief, he had to walk with the body bowed forward parallel to the ground and the hands clasped behind the back. A native who spoke to the chief was obliged to do so in the squatting position, sitting on his heels, with his face averted. His share of the conversation was limited to answering the questions of the chief, and to answer in a voice above a whisper was strictly forbidden. He must remain at a respectful distance, for even an accidental contact with the person of the chief was a grave offense. The handbasket of a chief had to be honored in the same way as his person; to jump across it or to step on it was an uncouth offense. In front of the house of a chief, no native might walk quickly or shout loudly. When sailing past the house of a chief, boatmen had to stop and hold their poles and paddles obliquely. If the chief sent a man to the shore to motion the canoe on, they might proceed. Otherwise they had to land and tell the object of their trip. Similarly, if commoners met a chief on the water, they had to stop and tell him the object of their journey. As the two canoes came alongside, both crews raised their paddles and assumed a squatting position in honor of the chief. If the commoners were returning from a fishing trip, they were obliged to give the chief some of the catch.

While the above forms of etiquette applied to the chief in particular, his immediate family, particularly his wives, also demanded marked respect. The lesser headmen on Palau and all the upper classes on Yap likewise expected deference from social inferiors; but the forms were somewhat less elaborate.

In former times these rules were rigidly enforced. If a chief felt that a commoner had failed to be properly respectful, he would impose a fine upon him. Extreme disrespect sometimes led to the exaction of the death penalty. Although the chiefs have

been deprived of the power to administer this latter punishment, it is believed that much of the old deference is still observed.

Etiquette at Ceremonies. Precedence was adhered to in most ceremonies. Distributions of money and other presents were made in descending order of rank. At banquets the chief was served first, and nobody could eat until he had commenced. The deference rules were relaxed, however, in funeral ceremonies (see 154).

Etiquette between Kinsmen. In former days in the islands east of Yap, a strict etiquette of avoidance prevailed between brothers and sisters. The burden of observance fell primarily upon the girl, whose duty it was to avoid her brother as much as possible. When they did meet, she had to avert her eyes and walk in stooped obeisance. She could not touch any food which her brother had eaten, nor eat any that he had touched. On some of these eastern islands avoidance is also said to have been customary between a mother and her adult son and between a father and his grown daughter. A trace of this avoidance pattern appeared in Yap, where the food for each member of the family was prepared and served separately. No etiquette of avoidance between kinsmen has been reported in the Palau district.

Modesty. In most of the islands natives were careful not to utter words relating to the sexual organs or to intercourse in the presence of a member of the opposite sex. Certain dances could be viewed and certain songs heard only by members of the same sex as the dancers or singers. A loincloth concealed the genitals of the men, and although there was no covering for the breasts of the women, a shapeless grass skirt covered their buttocks, thighs, and pubic region. Men and women had separate bathing places, and when a person of the opposite sex was forced to pass nearby, etiquette required him to issue a warning. Modesty patterns may have been accentuated in areas of missionary influence and relaxed in areas of strong Japanese influence, but it is believed that they are relatively unchanged.

159. Conduct Considered Especially Offensive

Impoliteness. Since the natives have had considerable contact with Englishmen, Spaniards, and Germans for approximately a century, they are well aware of European standards of politeness, and they can be expected to react appropriately to courteous and discourteous behavior in terms of those standards. Moreover, because of the importance of social class distinctions in native culture, they will expect American officers in particular to be courteous to them, and will be offended by rudeness from them. Especial courtesy should be shown to the chiefs.

Immorality. Although in the last century unmarried native girls were very lax in their sexual behavior (see 153), they are considerably more strict today. The distribution of the favors of a married woman belongs exclusively to the husband. Any disregard of his rights will not be tolerated by the natives.

Irreverence. Although any breach of the innumerable taboos of the aboriginal religions will be offensive, some breaches will be especially resented. On Yap, no one is allowed to cut down trees of the sacred groves or even to walk through those groves. On Palau, persons invited to enter the houses of the priests or of the gods are expected to remove their hats, to remain bowed, and to speak in low voices. Native Christians consider it irreverent to work on Sunday, and are likely to resent being asked to do so.

16. ORGANIZED GROUPS

161. Family and Kinship

Family. The native family consists of a man, his wife or wives, and their children. Generally speaking, however, two families live together in a single household. In the eastern islands of the Yap district, i.e., from Ifalik to Satawal, where married couples live near the home of the bride's parents, the families of two sisters often dwell in the same house. Living with them may be one or both of their parents, or a married daughter of one of the sisters. In the remaining islands of the Yap district, and in the southwestern islands of the Palau district, namely, Merir, Pul, Sonsorol, and Tobi, where a married couple usually lives near the home of the groom, a household normally consists of the families of brothers, sometimes including their parents. In Angaur, Kayangel, and Palau, where a married couple sets up housekeeping in or near the house of the groom's maternal uncle, households are composed of the families of brothers, or of male first cousins, i.e., men whose respective mothers are sisters, or of maternal uncles and nephews.

The importance of the family in social affairs is overshadowed by that of the clan community (see 162). The functions of the family as a social group are likewise attenuated by the fact that the husband and father spends much of his time in the men's house. On many of the islands and particularly on Yap, moreover, the boys above the age of six or seven sleep regularly in the men's house.

Domestic Authority. Authority in the household varies considerably in the different islands. In the eastern islands of the Yap district, the oldest woman in the household holds a dominant position. In the remaining islands of the Yap district and in the southwestern islands of the Palau district, the oldest man of the household wields the greatest authority. On Palau and the islands immediately adjacent to it, authority is divided between the oldest man of the household and his mother. If she is no longer living, her authority is vested in the man's eldest sister or female cousin, even though these women normally do not live in the household.

Adoption. The custom of adopting a child from another family is frequently practiced in the Western Carolines. By means of adoptions, each lineage and clan is able to keep an approximately equal number of members, and thus to maintain a constant relationship between individuals and the land which they own, a necessary adjustment when land may not be bought or sold (see 341). Children adopted are usually those of close relatives; if a child of a non-relative is adopted, the foster parents commonly pay a fee to the real parents. An aberrant type of adoption occurs on Palau. Here a family of high status may adopt and bring up a child of inferior status, but the latter becomes essentially a servant and does not rise in rank.

Kinship. The natives of the Western Carolines have a few basic terms for close relatives and refer to more distant ones descriptively. The basic terms are those for father, mother, spouse, child, brother or sister of the same sex as the speaker, and brother or sister of the opposite sex. Other relatives are referred to by using a combination of the above terms. Thus the term for paternal grandfather is "father of my father," and that for maternal uncle is "brother of my mother." Cousins are classified with brothers and sisters in the eastern islands (Satawal to Fais), and have descriptive designations in the southwestern islands (Sonsorol to Tobi). Kinship terms are used only to refer to relatives on the former islands, and only to address them in the latter group; their use in Yap and Palau is not reported. The basic terms for the Western Carolines are presented in the following table:

Relative	Eastern Islands	Yap	Palau	Southwestern Islands
Father	samei	chitomogen	kadam	papa (or tamai)
Mother	ilei	chitonigen	kadil	neita
Child (son or daughter)	lei	pageri	ngalek	rei
Brother (of a man), Sister (of a woman)	bui	nipumon	dos	uisi
Sister (of a man) Brother (of a woman)	moneal	nipin	dam	mianger
Spouse (husband or wife)	bubulei	-	-	ngali

The terms given above for the eastern islands are those of Satawal, and those for the southwestern islands are those for Pul. The terms used in the other islands of each area are in most instances the same, except for slight phonetic changes. Thus the word for father is samei on Satawal, tamai on Faraulep, damai on Ifalik, domol on Eauripik, damadj on Sorol, papa or tamaigl on Sonsorol, and papa or tamai on Pul.

Artificial Kin Relationships. On Satawal, and presumably also on other eastern islands of the Yap district, friends of the same sex may undergo a ceremony which makes them conventional brothers or sisters for life. The relationship entails mutual obligations, and the children of the parties concerned are forbidden to marry one another, just as though they were actual blood relatives. In Palau, children are regularly named after a living relative, who is obliged to act as a sort of godparent to his namesake.

162. Clans

Clans. The natives of the Western Carolines group themselves into a number of totemic clans, each of which has its myth of origin. The myth describes how in the beginning of the world some animal, plant, or fish gave birth to or otherwise created the first human being from whom all the members of the clan have descended. The fish, plant, or animal which represents this totemic ancestor is held sacred by the members of the clan, and in theory should not be damaged or eaten. These taboos are taken seriously only on Palau, where sickness is often attributed to breaking them. Members of a particular clan all feel themselves to be related to one another, and clansmen of the same generation, except in the southwestern islands, call one another brother and sister (see 161). This feeling of kinship, although present, is attenuated between clansmen living in different communities.

Clan Communities. Clans in the Western Carolines are not localized, but rather are scattered over a considerable area in small communities of clansmen, each of which occupies a section of a village or settlement. In the eastern islands of the archipelago, from Satawal to Fais, the communities of a single clan may be found on different atolls, not only in the Yap district but also in the Truk district of the Eastern Carolines. For example, in 1910, there were communities of the Mongulufaj clan on Gaferut, Lamotrek, Woleai, Pulap, Pulusuk, and Truk. In the remaining islands of the Western Carolines the communities of a clan are less widely distributed. One group of clans is distributed in Fais, Ngulu, Ulithi, and Yap. A second group may be found on Angaur, Kayangel, and Palau. A third is limited to Merir, Pul, Sonsorol, and Tobi.

In the Yap district and in the southwestern islands, clan communities usually consist of from five to ten households, and a settlement or village is composed of three or four clan communities. In Palau, however, the clan communities are smaller, usually consisting of but a single household, and the number of clan communities in a village is larger, usually from ten to 20.

The various communities of a clan do not unite to perform any religious, economic, or political function, although they provide a haven for travelers and traders from communities of the same clan in other villages. The clan community itself, however, plays a crucial role in the life of every native. Land rights are vested in it (see 341), work groups are made up from its members (see 335), and marriages are regulated by membership in it (see 153).

Descent. Throughout the Yap district and on Angaur, Kayangel, and Palau, membership in a clan is traced through the female line, that is, a child belongs to the clan of his mother. The southwestern islands of Merir, Pul, Sonsorol, and Tobi, however, are differentiated from all other parts of the mandated area by the fact that their inhabitants trace clan membership in the male line.

Clan Chiefs. Each clan community has a chief, who is normally its senior male member. In the eastern islands, one of his functions is to decide upon marriages; any young man or woman of the clan community who wishes to get married must gain his consent. The chief also sees that the clan's fields are properly maintained and its fruit trees properly cared for. He settles property disputes which may arise among the local clansmen, and he represents his community in dealings with the political chiefs of his village and district (see 211).

In Yap and the adjacent islands Fais, Ngulu, and Ulithi, where the village as a social unit is considerably more important than elsewhere in the Western Carolines (see 164), and the village chief has considerable power (see 211), the clan chief plays a less important role than he does in the eastern islands.

In Angaur, Kayangel, and Palau the clan communities in each village are arranged into a right and a left half or moiety, and into a front and a rear division (see 211). The chief of each clan community in the right moiety is, by virtue of his position, the ceremonial friend of the chief of the corresponding clan community in the left moiety, and marriages between members of the communities thus paired are looked upon with especial favor (see 153). The chiefs of the ten highest ranking clan communities in a village, in addition to performing social and political functions comparable to those described for

the eastern islands, represent the clan community on the village council of elders (see 211). In addition to the male chief of each clan community, there is also a female chief, who is usually the oldest woman of the group. Her duties are to oversee the taro plots and gardens of the clan community, and, if she belongs to one of the ten highest ranking communities in the village, she is a member of a female council of elders.

163. Settlements

Farmsteads. In the Western Carolines the farmstead still forms the basic unit of villages or settlements, and primitive conditions prevail except in the larger towns. Farmsteads consist of sizeable plots of land inhabited by one or more families composing a household (see 161). On the high islands of Palau and Yap they are scattered along the shore or the banks of streams. Occasionally a farmstead is located in a clearing in the forest, but for the most part the interior of the high islands is uninhabited. On the single islands without a lagoon the farmsteads are located along the shore. On coral atolls a farmstead normally consists of a cross-section of an islet, extending from the lagoon to the outer reef, with the buildings located near the sheltered shore of the lagoon.

A typical farmstead includes one or more dwellings, one or more cook-houses, a canoe-house, storehouses, and sometimes a pig sty, fowl house, and shed, and a shelter in the field. In addition, each farmstead, or several together, will have a menstrual hut and a birth hut. Banana and coconut trees are planted near the buildings. The gardens and taro plantations lie behind the dwellings, toward the interior of the island. Paths lead from the houses to the gardens, to the shore, and to neighboring farmsteads.

Villages. True villages were unknown to native life before European contact. Settlements consisted, not of houses clustered in villages, but of a number of adjacent farmsteads strung along the shore. In a few islands, such as Angaur, Palau, and Yap, native houses tend today to cluster in and near the administrative, industrial, and commercial centers, the natives having moved their homes from their farmsteads to the towns. For the most part, however, the old pattern of community settlement still persists. Menstrual huts are usually located some distance from the settlement, grouped close together, and each village has one or more birth huts. Canoe-houses lie along the lagoon or beach. In the Yap district each large settlement has a men's house and a spirit house; in small settlements the canoe-houses are used by the men as assembly houses. In the Palau district each village has an assembly house and one or more men's clubhouses.

The inhabited atolls and islands are listed below in alphabetical order, with information concerning their settlements or villages. (For population data, see 143.) Unless otherwise noted, the farmsteads and villages conform to the general pattern described above.

Angaur. The residents of Angaur who work in the phosphate mines and at the refinery live mainly in the town of Saipan (see below). The other native inhabitants presumably live in settlements similar to those on Palau.

Eauripik. The natives of Eauripik atoll reside on the islets of Eauripik and Oao. The settlement on Eauripik is divided into two large farmsteads of several houses each. That on Oao consists of several large houses.

Elato. The natives living on the atolls of Elato and Toas reside in typical lagoon settlements.

Fais. The natives of Fais live in three villages in the SW section of the island, above the beach of Mater. Their fields occupy the central portion of the island. A branch depot of the Nanyo Boeki Kaisha is located at the S end of the island.

Faraulep. The natives of Faraulep atoll live on the islets of Faraulep and Pigue. The Faraulep settlement includes numerous dwellings, several menstrual huts, and a spirit house. The office of the Nanyo Boeki Kaisha is located on the W side of Faraulep Island.

Ifalik. In Ifalik atoll there are settlements on the islets of Flalap and Ella, but the largest settlement is on Ifalik or Flarik Island. This islet is divided into several districts and has two assembly houses. Flalap likewise has two or more districts. The farmsteads lie along the coast, with taro fields in the central portions of the islands.

Kayangel. Although there were no inhabitants reported on Kayangel in 1935, there

were formerly two villages, located respectively in the northern and southern sections of Ngajangel Island.

Lamotrek. The largest village on Lamotrek atoll is located on the western or lagoon side of Lamotrek Island.

Merir. In 1906 the inhabitants of Merir were driven by famine to Palau, but they later resettled on Merir. The type of settlement is probably similar to that on Tobi.

Ngulu. All the natives of Ngulu atoll live in a settlement which extends over the major portion of Ngulu Island. This village is divided into two parts, Mator and Bologol, named after the principal canoe-houses. There are several farmsteads, one men's community house, and several canoe-houses. There are paved roads as in Yap.

Palau. The native villages of Palau are situated mainly along the coast. There are only scattered settlements in the hilly regions in the interior of the islands. A number of farmsteads are considered as forming a village, and several villages a district. The principal villages on the west coast of Babelthuap Island, from south to north, are Mukeru, Ngarekeai, Ngatpang, Ikulagalid, and Ngardmau; those on the east coast are Airai, Goikul, Aramarakarakkuru, Garashiyoo, Enkassar, Melekeiok, Blissang, Keklau, Galap, and Ikulrengerenlong. On the islands of Arekabesan, Koror, and Malakal, the natives live mainly in the town of Koror (see below) and its environs; in addition, there are a few native settlements, mainly fishing villages. Ngarmid is a fairly large native village in the western section of Koror Island. The main villages on Peleliu Island are Ngalkol, Ngal Kiok, and Attalabul on the east coast and Pittang, Umaok, and Ngaldolok in the west.

In front of every large native village is a sea wall or pier built of coral stone, for a landing place, near which usually stand two canoe-houses. A stone road, 15 to 30 feet wide, consisting of loosely piled stones, leads from the shore through the village. The dwellings with their outbuildings are situated along the road, not in rows but scattered in a heterogeneous fashion and often hidden in the shrubbery. The houses of the ten leading families have the best locations, and the taro fields on the immediate outskirts of the village belong to them. In the center of the village is a paved square, where consultations take place and dances are performed. Located on this square are usually from one to three assembly houses. A village may have from two to six or more men's clubhouses, located along the village street, the road, near the canoe-houses, or even on the landing piers. The stone road ends with the village, and gives way to paths or unpaved roads leading to the hills, fields, and other villages. The mangrove zone at the seashore and the forests and fields are used by all villagers. The demarcation of these areas is clear between villages but not between families in a village.

Pul. Although the native population of Pul is now greatly reduced, formerly there were two villages near the shore in the SW of the island, one with 40 houses and the other with 21. There was no sharp boundary line between them, and the chief's house occupied an intermediate location. A pathway led NE across the island, passing along the plantations.

Satawal. The natives of Satawal live in three villages, Lugaloo, Afan, and Jor, located in the middle of the western shore of the island, above the steep slope. Only the canoe-houses stand on the beach below. Farmsteads are located near their own breadfruit trees and taro fields. Menstrual huts, instead of being grouped together, are scattered over the island.

Sonsorol. The natives of Sonsorol live in four adjacent villages, probably located on the W side of the island. All the settlements are near the shore and are so close together that they seem like one continuous village. Boundaries between family fields are marked by trees or stones.

Sorol. The only residents of Sorol atoll live on the islet of Sorol. The population today is reported to be negligible, but formerly it seems to have been considerable. There was a fairly large village, divided into four sections on the W side of Sorol Island. A clan community (see 162) inhabited each section, with smaller family units living in separate dwellings.

Tobi. The natives of Tobi live in settlements extending around the southern and southwestern sides of the island. In the remaining portions of the island there are only a few isolated farms. The houses stand close together near the beach. There are eleven settlements, which are regarded as forming one large village.

The nucleus of the village, in the SW, comprises two spirit houses, a chief's house, and a women's house. Inland from the settlement are the wells, then a zone of mixed trees where the gardens are situated, and finally the taro fields. Pathways lined with coral stone lead around the island, diverging into branches in the larger settlements and running to the taro fields.

Ulithi. In the Ulithi group there are large settlements on Falalop Island and on the islet of Mogmog, and smaller ones on the islets of Asor, Fassarai, and Lossau. Velli is the main village on Falalop. The port and trading center, as well as the residence of the chief, are on Mogmog.

Woleai. The natives of Woleai live along the lagoon sides of the constituent islets. There are several villages on each of the larger islets, forming separate communities, although there are no obvious boundaries between adjoining settlements. The police station and the branch office of the Nanyo Boeki Kaisha are located on the SW side of Woleai Island, which has a wide path running the entire length of the lagoon shore.

Yap. The natives of Yap live in about 100 villages and in the town of Yap (see below) and its environs. The villages are of greatly varying dimensions, some consisting of only a few houses, others having as many as 80 houses. Whereas the European and Japanese residents are mainly aggregated on the shore of Tomil Harbor, the native settlements are widely scattered, especially in the low fertile parts of the islands. There are very few settlements in the mountainous sections. No distinct boundaries mark off the different villages from each other, and the chain of houses around the islands is unbroken except for occasional mangrove swamps, uncultivated land, or bays. Villages are connected with one another by good, partly paved roads, and a road cuts through the entire length of the southern region of the island. Generally only persons of one social class inhabit a village (see 164). The free villages are located mainly on the ocean side, serf villages in the interior.

Rull Island is heavily populated, with numerous villages along the coast and in the interior of the southern depression. The principal villages on the west coast of Rull, from S to N, are Nif, Aringel, Kanif, Okau, Atelu, Gillifitz, Yin, and Runu. On the SE coast of Rull are the villages of Gorror, Dulucan, Tabunifi, Lamer, Lueis, and Inuf. Around Tomil Harbor are the villages of Beniq, Balabat, Worwor, Nimar, Keng, Dugor, and Runu on Rull, and the villages of Maerur and Tomil on Tomil Island. On the east coast of Tomil Island are Ma, Libinao, Leng, Gatschapar, Cnoan, Riquen, and Gagil. The villages on Map Island are Ueloi, Chol, Omin, and Orila; those on Rumung Island are Fal, Uenfra, Ri, Canaun, Buluol, and Tagam.

The plan of the native villages on Yap depends upon the topography. Generally each village consists of a shore section, consisting of the men's clubhouses, canoe houses, and a few dwellings among the coconut trees, and of a main section farther inland with an assembly hall and most of the dwellings. Some villages have stone dams so that canoes can land at low tide. An outstanding feature of Yap villages is the paved road, made of blocks of coral laid without cement, leading from the landing through the village with a row of houses on either side. Each farmstead consists of a dwelling and several smaller buildings, is surrounded by a neatly swept clearing, and is separated from adjoining houses and from the road by low bamboo fences. Each large village has an assembly hall and one or more clubhouses for the use of men. The former is used for village councils and commonly stands in the heart of the community, with the stone money belonging to the village stacked up around it. Clubhouses are usually built on the shore, generally on a promontory or on a platform projecting into the lagoon. Poor villages often make one large building serve as both assembly hall and men's club. Some villages are divided into two sections, each with its own clubhouse. Close to the chief's residence and assembly hall the village street widens to form a paved plaza for general meetings under the open sky.

Towns. Under European and Japanese influence, small towns have sprung up in a few places, usually around an administrative center or a developed industry. The most important of these towns are Koror in Palau, Saipan in Angaur, and Yap on the island of Rull in Yap. In addition to native huts, these modern towns have dwellings in European and Japanese style, shops, restaurants, schools, churches, government offices, and other buildings.

The town of Koror, which occupies the western half of Koror Island in Palau, is the political, administrative, transportation, and industrial center of the mandated islands. In recent years its naval and military importance has increased, and in 1943 it

became the headquarters of the western administrative district (see 214), which effected a consolidation of the formerly separate Palau and Yap Branch Governments. Even before the coming of Europeans, Koror was an important native settlement and political center, and a Capuchin mission was established there during the Spanish period (see 134). Later the foundations for a more modern development were laid by the German administration. Because of its central location within the islands of the Palau group, and the position of these islands in the larger Pacific area, the town has not inconsiderable advantages, which should assure its continued growth as a modern transportation and industrial center.

The town of Koror was incorporated in September, 1932, into a Japanese administrative township, being expanded to include within its boundaries all of Koror Island, Malakal Island with the harbor area, and Arakebesan Island. The town has a municipal assembly (see 215). Koror Island itself is divided into twelve wards. In the west are five wards: Madalai, Galilutoeru, Adosugeru, Fittanburu, and Arakabetsu. In the eastern part of the island are six wards: Aibokuru, Arakamae, Arakasaoru, Arubodoru, Arabakedesao, and Arumizu. The twelfth ward comprises the central business section. The population of the township area in 1938 totaled 11,662 persons, of whom 10,448 were Japanese and 1,214 were natives. Of the total population, between 6,000 and 8,000 persons live in the more populated central and western sections of Koror Island.

Koror is a modern town in most respects, and its inhabitants enjoy many modern conveniences. It has a telephone system connecting with Malakal, and a radio-telephone service with Tokyo (see 272). There are several radio stations (see 273). Taxis and other modern vehicles are in use, the streets are surfaced with oil or concrete, and there are good road connections with other islands by means of causeways, bridges, and ferries (see 291). Rain catchments, however, are the principal source of water (see 281), and there is no modern system of sewage disposal (see 282). Shops line the streets in the business district. In the western section are located the government and administrative buildings with their open-style architecture and their galvanized iron roofs. These include the official residence of the Governor, the courthouse, the Meteorological Observatory, the Marine Products Experiment Station, a pearl culture station, the post office, a radio station, and an assembly hall. In the eastern section are located the hotels, the Tropical Industries Research Institute, radio towers, the Catholic church and mission, and other buildings. There are also a number of schools (see 262), a hospital and a leper sanatorium (see 253), a number of military establishments and barracks, and the offices of the various Japanese developmental companies (see 327). Koror is well equipped with piers, wharves, and other shipping facilities (see 294). On the shore of Arakabesan Island facing Koror there are fishing settlements and a small bonito-drying plant. There are also fishing settlements on Malakal Island, and a large bonito-drying plant with all accessories.

The town of Saipan (not to be confused with the island of Saipan in the Marianas) is situated in the approximate center of the west coast of Angaur Island. It owes its existence and development to the phosphate mining industry (see 324), and is a mining town. The German administration, in developing the phosphate industry, built a narrow-gauge railway, a sawmill, and a woodworking shop, a repair shop, an administration building, 32 residences for Europeans, an eating place, a social and recreational center, a hospital, storehouses, and eleven barracks. The Japanese thus took over a well established mining community at the time of their occupation.

Saipan town is divided into two wards, North Village (Kitamura) and Central Village (Nakamura). The population of Angaur Island is concentrated chiefly in the town area and is reported to be somewhat in excess of 1,000 persons, divided almost equally between Japanese and natives. The natives consist largely of laborers recruited from the Yap and Truk districts for work in the phosphate mines, which are located in the north central part of the island. The refinery, however, is located at Saipan. A three-story building with two stacks and large surrounding sheds, it is the most prominent structure in the town. Other buildings include the post office, the hospital, a public school, a radio station with masts, the mining company's offices, and native and Japanese residences. A power plant is connected with the radio station, and there is a small telephone system. A hard surfaced road probably extends along the west coast from the hospital through the town, and the narrow gauge railway provides access to the phosphate mining area and the interior of the island.

The town of Yap (also called Yap Town and Colony) is situated on the west side of Tomil Harbor in the southeast of Yap Island. It consists of two principal settlements, the one on the double island of Blelatsch, and the other on the adjacent shore of Rull Island, which are connected today by a substantial causeway. In the days of Spanish control, a massive rectangular citadel with thick cement walls was erected on Blelatsch, where it still stands. The Spaniards also erected a government building on the small island and some residences. When Yap came under German domination, the administration occupied the old Spanish government building and constructed additional facil-

ities on the island. Many of the residences, however, were built on the adjacent shore, and a European colony developed there. The town of Yap today includes both settlements.

The most conspicuous building in the town is the two-story black structure occupied by the Yap Branch Government. Northwest of this building are several large black-roofed houses which are conspicuous when seen from the sea. Other buildings include the post office and cable station, a meteorological observatory, the radio station, an elementary school for Japanese children, a public school for native children, shops, Japanese residences, and native thatched huts. A government hospital is located about a mile north of the town. Improved roads run north and south from the town along the west shore of Tomil Harbor, and other roads lead west for a short distance (see 291). Wires of the local telephone system are strung along some of these roads.

164. Social Classes

Social Status in the Eastern Islands. Distinctions of social class are minimally developed in the islands from Satawal to Fais, as in the Truk district to the east. The only status differences seem to be those based upon age and political power. In former days, when the inhabitants of these islands were tributary to Yap (see 211), they were rated by the population of Yap as serfs, but this status was operative only when they visited Yap to pay tribute.

Social Status in Yap. An extraordinarily elaborate development of class distinctions has occurred in Yap. Originally each village belonged to one of nine distinct social classes, and everyone in the village was a member of the same class. The three classes highest in rank formed the native nobility, the next three were commoners, and the three lowest were rated as serfs. The Japanese have attempted to simplify this system by recognizing only five classes: one noble class, three classes of commoners, and a single serf class. To become a district chief, one must come from a noble village. To own land, or to wear the comb and mat which are the emblems of freemen, one must come from a village either of nobles or of commoners. A serf cannot own land, he must perform certain unpleasant tasks such as burying the dead and working on roads, and he usually lives in a village in the interior of the island. In 1910, there were 23 noble villages, 43 common villages, and 40 serf villages, and the serfs were estimated to number about 20 per cent of the population.

Besides the classification by villages into nobles, commoners, and serfs, the men in each village are ranked with respect to one another. Six such ranks are distinguished, the lowest four of which are based primarily upon age. The two highest ranks, however, require the ownership of certain status-giving land in addition to meeting the criterion of age. Since these plots are owned exclusively by noble villages, the highest grades can be attained only in such villages. To advance from one grade to another, a candidate must have attained a certain age, and he must pay a fee to those who are already members of the higher grade. The members of each grade observe special food taboos, eat with one another on certain ceremonial occasions, and exchange hospitality with members of the corresponding grade in other villages. In order to become village chief, a man must have attained the highest grade possible of attainment in his village.

Social Status in Palau. In Palau and the adjacent islands of Angaur and Kayangel, in addition to the political ranking of the clan communities of each village in numerical order from one to ten (see 211), each village has three age-grades: the young, the middle aged, and the old. Each grade has four subdivisions based upon the divisions into sexes and into moieties. Thus there are the young men of the right moiety and the young men of the left moiety, each with a special clubhouse, and the young women of the right moiety, and the young women of the left moiety, who use the corresponding men's clubhouses at certain times of the year. The middle-aged and the elders are similarly grouped into four subdivisions each. Every clan community must be represented in each of the twelve sections, and if it lacks a member of the appropriate sex and age for one of them, it must provide a substitute. The relative numerical political ranking is maintained throughout. Thus the senior representative of the highest ranking clan community is automatically the head of each of the six sections of the right moiety, while the clan community which ranks second similarly provides the heads of the several sections of the left moiety.

Social Status in the Southwestern Islands. The natives of the southwestern islands of Merir, Pul, Sonsorol, and Tobi are divided into freemen and serfs. The former may own land, while the latter may not. Information is not available as to whether there are any more elaborate social class distinctions in this area.

165. Minorities

Ethnic Minorities. The only important minority groups in the Western Carolines are the Okinawa laborers from the Ryukyu Islands, the Koreans, and the Chamorros (see 143). Okinawans formed one quarter of the population of the Palau district in 1937, but numbered only 144 in Yap. Koreans constituted a much less important element, 67 of them living in the Palau and 92 in the Yap district. Neither group apparently presents any serious minority problems, although both are undoubtedly looked down upon by the Japanese. In 1937, there were 214 Chamorros (natives of the Marianas Islands) in the Palau district and 240 in the Yap district. Although relations between the Chamorros and the Caroline Islanders have not always been cordial, it is doubtful whether any serious feeling exists today. The attitudes of the natives toward the Japanese and other foreigners have been described elsewhere (see 157).

166. Associations

Men's Clubs. The principal native association in the Western Carolines is the men's club. In the eastern atolls of the Yap district a large canoe-house in each settlement serves as a clubhouse, at which the men of the community spend much of their time. In Yap itself, each village has one or more special community houses (see 323), elaborate structures which serve the men as workshops as well as recreation centers.

The men's club attains its greatest elaboration in Palau, where each village has from two to six or more special clubhouses. Each adult male belongs to a particular club, depending upon his age and his moiety affiliation (see 164). The women have a parallel organization but no clubhouses, although they take over the men's clubs for a period of several weeks each year. Each club is rigidly organized under the leadership of a representative of the highest ranking household represented in its membership. The clubs act collectively in a variety of community enterprises, e.g., roadmaking, housebuilding, fishing expeditions, headhunting forays, and warfare. The clubhouses are the recreational and ceremonial centers of the community. They are served by special hostesses (see 153), and ceremonial exchanges of gifts and feasts take place frequently between the corresponding clubs of opposite moieties.

With the suppression of headhunting and warfare and the extension of alien political control, the men's clubs have doubtless lost some of their former importance. They are still vigorous institutions, however, and might prove extremely useful as a source of communal labor, e.g., for village reconstruction. It should be noted that such work is traditionally carried on under the direction of the chief or head of the club, and that he receives the compensation, which ordinarily goes into the club's treasury to be used in defraying the expenses of a ceremony or of rebuilding or repairing the clubhouse.

Young People's Associations. The Japanese Government has encouraged the formation of native young people's associations with the objective of fostering their physical, intellectual, and moral well-being. The leaders are principally the government schoolteachers, other government officials, and interested Japanese. Activities include monthly meetings, at which the program consists of lectures, discussions, and athletic events, and participation in the annual Physical Education Day celebration (see 263). Members sometimes wear uniforms and have school songs and, according to Japanese report, frequently supply free labor for public undertakings or otherwise contribute toward enterprises for the public good. Through these associations and through public school alumni societies, the government offers "proper guidance" and "facilities...in regard to employment." Similar organizations exist for Japanese. The following table shows the number of associations and the number of members in 1937:

Type of Association	Number of Associations		Members							
			Yap District				Palau District			
			Natives		Japanese		Natives		Japanese	
	Yap	Palau	Male	Female	Male	Female	Male	Female	Male	Female
Young people's associations	5	14	415	106	-	-	683	542	149	-
Alumni societies	-	2	-	-	-	-	211	154	42	35
Youth associations (for younger people)	-	2	-	-	-	-	36	42	-	-

Educational Associations. There are two associations devoted to the promotion of public school education and to the study of educational problems (see 262).

2. ADMINISTRATION AND PUBLIC FACILITIES.

21. GOVERNMENT

211. Native Political Institutions

Political Organization of Yap. The natives of Yap still retain the essential features of their aboriginal form of government. The island was never organized into a unified native state, but has been divided into eight independent districts, each consisting of a number of village communities. Political power is based on land ownership (see 341) and is closely integrated with the native class structure (see 164).

There are about 100 villages in the island. Some are inhabited by landless serfs, who work on lands owned by persons of superior social status. They owe feudal labor to their lords and can be driven from the land at the will of the latter. Other villages are occupied by freemen of intermediate or higher rank. Each village is governed by an assembly of headmen, the hereditary representatives of its constituent wards or families. Presiding over the assembly is a village chief, who usually holds his position by virtue of his ownership of a particular plot of land. Land and office are commonly transmitted from father to son. The chief has charge of the assembly hall, he supervises agriculture and community enterprises, and he sets the dates for dances and ceremonies, but otherwise he has little authority. He has no punitive power, and the power to declare and wage war is vested in a special war chief. Nor can the chief levy taxes. In order to raise money, he invites a neighboring village to a special festival at which his constituents shower the visitors with generous presents of food. These must be returned soon afterwards, accompanied by gifts of native money, of which the chief keeps the lion's share and distributes the rest.

Each district is ruled by a paramount chief, who is the highest ranking village chief of the district. The position is dependent upon the ownership and inheritance of particular houses and lands, to which the title attaches. The eight districts and their chiefs are arranged in a fixed order of rank, as follows: Tomil, Rull, Gagil, Gillifitz, Nif, Kanif, Gorror, and Okau. The first three owe their predominant position primarily to the fact that they are the seats of three cult places of outstanding importance and wide renown. Succession is patrilineal, a chief being followed in office most commonly by his eldest son. This rule contrasts sharply with that prevailing in Palau, the Eastern Carolines, the Marshalls, and the Marianas, where succession to the chieftaincy ordinarily follows the female line. The paramount chiefs of Yap are held in great respect. Subjects bow low when a chief passes; indoors they sit while he stands; in walking, he precedes and they follow. As feudal lords, the paramount chiefs receive from their subjects a share of all the products of fishing and agriculture. They have the power to preempt tortoises and valuables. They are autocratic patriarchs who can command obedience and punish deviations, but they commonly use their powers with moderation.

All the lesser islands and atolls of the Yap district are politically dependent, and from time immemorial their chiefs have annually sent tribute in mats, turmeric, and spondylus shells to Yap. The chief of Ngulu, an atoll 60 miles SSW of Yap, owes allegiance to the paramount chief of the Gorror district, and the Gagil district has suzerainty over all the islands to the east. In general, the political organization of the lesser islands resembles that of Yap. Everywhere there are village chiefs with limited authority, and in most atolls there is a paramount chief with greater powers. In Elato, Faraulep, Ifalik, and Lamotrek there is a second chief, who acts as spokesman for the great chief. Satawal is exceptional in having no paramount chief and in following the matrilineal rule of succession which prevails in the neighboring islands of the Truk district. The paramount chief of Lamotrek has at times exercised authority over Elato, Olimarao, Pikelot, Satawal, and West Fayu, as well as over his own atoll, but even he has had to visit Gatschapar in Yap at least once every two years to bring tribute to the paramount chief of Gagil.

The Spanish administration contented itself with maintaining a strong garrison on Yap after 1885, and had little effect on the native political institutions. The Germans, after assuming sovereignty over the islands in 1899, put an end to native warfare and deprived the native chiefs of the power to impose the death penalty, but they adapted their administration to the local governmental organization. They assembled the eight paramount chiefs of Yap once a month at the administrative headquarters to transmit orders and instructions, but they left most matters, including policing, in the hands of the chiefs. Their principal difficulty was in getting roads built. The chiefs, being quite content with the existing native trails, were lax in carrying out orders. Fines proved ineffective because of the excessive cost of collecting and transporting the heavy stone money (see 351), which was the only medium in which they could be paid. The problem was finally solved by taking advantage of the native custom of transferring title

to money without moving it. An agent of the government traveled through the recalcitrant districts with a pot of black paint and marked the stone discs which the government claimed. The chiefs hurriedly got the road work done, the marks were erased, and everyone was satisfied. Since 1914, the Japanese administration has further curtailed the power of the chiefs, and has sought consciously to minimize the old class differences, but it has adhered closely to the local political structure in the selection of native officials (see 215).

Political Organization of Palau. The basic unit of Palau society is the household (blai), which consists of several related families occupying a large pile dwelling. A household is really a localized segment of a clan (see 162) and like the latter is united by descent in the female line. It owns several plots of land, all land in Palau being collectively owned by households (see 341). All the members of each sex are graded in rank according to a strict numerical order, which is determined primarily by age. The eldest and first-ranking male is the head of the household and bears as his title the name of the house. Besides exercising domestic authority, he is the priest of the household. He is treated with respect; the other members bow to him and avoid physical contact or familiarity with him. The eldest woman, usually the sister of the male head, enjoys a comparable position of authority and prestige among the females of the household. She is, in particular, the guardian of the traditional customs of the clan.

When the head of a household dies, he is succeeded by the male next in rank and age to himself, usually his younger brother or the son of his eldest sister. If the headman is incompetent, if he deviates from established custom, or if he loses the support of the group, he can be legally killed. To do so, however, the household must gain the consent of the important chiefs in the village, and the legal murder must be done by a brother or nephew, usually the heir, who must undergo thereafter a purification ceremony. It is said that ambitious young men not infrequently resort to intrigue and bribery in order to advance their personal fortunes in this way.

A number of households, commonly from seven to 20, form a village, which is the primary political unit in Palau. Each village has a deliberative council of ten men, called rubak, who are the headmen of the ten leading households in the community. They are called the "uncles of the land" and hold their position by virtue of the ownership of special taro fields. The heads of the other households of the village, which do not possess such fields, have inferior titles or none at all, and thus cannot serve on the council. The councilors are graded in rank from one to ten, and each occupies a special seat in the assembly hall. Administrative and judicial decisions are not reached by arguing aloud. While the members sit solemnly, chew betel, and are served by designated girls, a junior goes from one to another in order of rank, to secure the consent to the proposal under discussion. A decision is reached when the five senior members are in agreement. The female heads of the ten leading households form a parallel council, also graded numerically, and its ranking member, called the "mother of the village" exercises considerable social and even political influence.

The headman with the highest position in the council is the chief of the village. He presides over the council, handles external affairs, arranges for religious festivals, and is charged with the maintenance of highways and stone embankments. The supervision of most domestic affairs, especially of communal economic activities, is in the hands of the second ranking councilor or assistant chief. In some villages other functions, e.g., military or judicial, are assigned to the third, fourth, or other councilors.

Each village is split into two intersecting sets of halves or moieties--a front and a rear moiety, and a right and a left moiety. The first chief is the head of the front moiety and also of the right moiety, the second chief presiding over the rear and left moieties. The front and rear divisions are primarily political in character, the former usually including the first, third, fifth, and other odd-numbered households, and the latter the even-numbered households. The two groups treat each other with respect and formality, frequently exchanging gifts or arranging festivities in honor of one another. The right and left moieties are primarily concerned with economic matters. They are physically separated by the creek which flows through the middle of most villages. Each side has one or more men's clubhouses in which the young men live and the older men meet for various purposes. Each club is highly organized, likewise with a numerical system of ranking, and it is through these organizations that warfare and most communal enterprises are carried out.

Although villages enjoy a large measure of local autonomy, they are in most cases aggregated into federations or districts. The number of districts changes somewhat with the fortunes of war and political intrigue, but there are usually about ten--one in Angaur, one in Kayangel, and about eight in Palau proper. The government of a district is modeled on that of a village. It has a council which usually includes the first and second chiefs of the subordinate villages in addition to the councilors of the dominant village. The chief of the dominant village is the paramount chief of the district, and he is treat-

ed with great deference. He has a second chief, who handles domestic affairs. Legal regicide is customary in some districts, as in the smaller household and village units, but in others the paramount chief can only be deposed and exiled, not killed.

The chiefs of Koror and Melekeiok, two districts in Palau, have been hereditary enemies for centuries. They have waged war intermittently with the aid of other districts which have from time to time given allegiance to one or the other. Melekeiok had the upper hand until 1783, when Koror got firearms from shipwrecked English sailors and thus attained supremacy. The Japanese administration has dignified the heads of these two powerful districts with the title of "village chief," and has conferred the lesser title of "village headman" on 15 native rulers of other districts and islands.

Political Organization of the Southwestern Islands. Each of the islands in the Southwest of the Palau district is ruled by a paramount chief under whom there are a number of local chiefs--20 on Merir, 6 on Pul, 18 on Sonsorol, and 12 on Tobi. On Pul and Sonsorol, as in Palau proper, all the chiefs are graded in strict numerical order. In many respects, however, the political organization differs appreciably from that in Palau. Women chiefs, for example, are common, except in the position of paramount chief. Moreover, the rule of succession is patrilineal, in contrast to the matrilineal principle which prevails in Palau. A deceased chief is regularly followed in office by his eldest son or, in default of sons, by his eldest surviving brother; if there are neither sons nor brothers, a daughter or sister succeeds to the chieftaincy. In Pul, as in the eastern atolls of the Yap district, the second ranking chief acts as spokesman for the first. Sharp class distinctions separate commoners from the chiefs and their relatives. In approaching or passing a chief, a commoner must crawl on all fours. The special prerogatives of chiefs include a share of the catch from fishing and an exclusive right to turtles, whales, and certain species of fish. In general, the chiefs of these islands are leaders in community enterprises rather than feudal lords.

212. Colonial Policy

Spanish Colonial Policy. The colonial policy of Spain in the Caroline Islands was directed primarily toward maintaining a semblance of authoritative government at a few scattered administrative centers barely sufficient to uphold her claim to sovereignty against nations with imperialistic ambitions in the Pacific. The proselyting efforts of Catholic missionaries were supported, but only half-hearted attempts were made at economic exploitation, and the islands continued to be a financial burden until they were sold to Germany in 1899.

German Colonial Policy. German policy with respect to the islands was directed first of all to complete pacification and, when this was accomplished, to economic exploitation. Every encouragement was given to the development of trade and to the expansion of production, especially of copra. To the Germans the strategic value of the islands in a military sense was always of definitely subsidiary importance, as evidenced by the insignificant development of naval and military installations.

Mandate Policy of the League of Nations. The colonial policy of the League of Nations, expressed in the mandate system, represented a compromise between the conservatives, who favored outright imperialistic annexation of the territories of the central powers, and the liberals, who wished them to be directly administered by the League. Several classes of mandates were devised, depending upon the territory under consideration, the former German Micronesian islands being given to Japan under a Class C mandate.

The following charter was laid down by the League of Nations with respect to the manner in which the islands mandated to Japan should be governed:

> Article 1. The islands over which a mandate is conferred upon his Majesty, the Emperor of Japan (hereinafter called the Mandatory), comprise all the former German islands situated in the Pacific Ocean and lying north of the Equator.
>
> Article 2. The Mandatory shall have full power of administration and legislation over the territory subject to the present Mandate as an integral portion of the Empire of Japan, and may apply the laws of the Empire of Japan to the territory, subject to such local modifications as circumstances may require. The Mandatory shall promote to the utmost the material and moral well-being and the social progress of the inhabitants of the territory subject to the present Mandate.
>
> Article 3. The Mandatory shall see that the slave trade is prohibited and that no forced labor is permitted, except for essential public works and services, and then only for adequate remuneration.
>
> The Mandatory shall see that the traffic in arms and ammunition is controlled

in accordance with principles analogous to those laid down in the Convention relating to the control of the arms traffic, signed on September 10, 1919, or in any convention amending same. The supply of intoxicating spirits and beverages to the natives shall be prohibited.

Article 4. The military training of the natives, otherwise than for purposes of internal police and the local defense of the territory shall be prohibited. Furthermore, no military or naval bases shall be established, or fortifications erected in the territory.

Article 5. Subject to the provisions of any local law for the maintenance of public order and public morals, the Mandatory shall insure in the territory freedom of conscience and the free exercise of all forms of worship, and shall allow all missionaries, nationals of any State Member of the League of Nations, to enter into, travel, and reside in the territory for the purpose of prosecuting their calling.

Article 6. The Mandatory shall make to the Council of the League of Nations an annual report to the satisfaction of the Council, containing full information with regard to the territory, and indicating the measures taken to carry out the obligations assumed under Articles 2, 3, 4, and 5.

Article 7. The consent of the Council of the League of Nations is required for any modification of the terms of the present Mandate.

The Mandatory agrees that, if any dispute whatever should arise between the Mandatory and another member of the League of Nations relating to the interpretation or the application of the provisions of the Mandate, such dispute, if it cannot be settled by negotiation, shall be submitted to the Permanent Court of International Justice provided for by Article 14 of the Covenent of the League of Nations.

The Permanent Mandates Committee of the League sought to compel the Japanese to abide by the above articles by sending questionnaires asking clarification of ambiguous statements made in the annual reports. In 1924, for example, questions were asked with respect to the following matters: encouragement of the study of native languages, authority of native village officials, exercise of power by native tribal chiefs, participation of the natives of administration, native assemblies, traffic in women and children, labor conditions in the sugar industry, training of native teachers, moral standard of textbooks used in the public schools, treatment of framboesia, native land system, amount spent for the direct benefit of the natives, labor conscription, and sale of liquor to natives. These questionnaires resulted in more complete reports to the League but otherwise effected little if any change in Japanese policy.

The sharpest controversy between the Permanent Mandates Commission and the Japanese Government occurred in 1932, when an accredited representative of the latter was questioned by the Commission with respect to reports that submarine bases were being built in the area. These reports were denied flatly, and apparently mendaciously, as baseless rumors.

When Japan announced that she would withdraw from the League of Nations, the question of the sovereignty of the mandated islands arose. Many jurists were of the opinion that the League, and not Japan, had final sovereignty over the islands and that if Japan withdrew from the League the latter could transfer the mandate to another nation. The League, however, was in too weak a position to attempt such a step, and in withdrawing from the League, Japan took the islands with her without a struggle.

At no time was the League of Nations able to implement its policy except through mobilizing world public opinion. Japan, in the main, followed her own policy and merely kept silent or resorted to subterfuge whenever it conflicted with that of the League.

Japanese Colonial Policy. Except on the question of sovereignty, the Japanese colonial policy has officially been identical with that of the League of Nations. Actually, however, it has been quite different. Insofar as it can be inferred from events and from administrative acts, the colonial policy of the Japanese Government with respect to the mandated islands can be summarized under four headings, as follows: (1) to develop the islands in an economic sense; (2) to prepare them as a place to which Japanese nationals can migrate as colonists, thus relieving population pressure in Japan itself; (3) to Japanize the natives as rapidly as possible through education and propaganda and by promoting cultural change; and (4) to establish offensive and defensive military, naval, and air bases in the islands in preparation for a war of aggrandizement in the Pacific.

213. Central Administrative Organization

Development of the South Seas Government. When the administration of the mandated islands was transferred, in 1922, from the jurisdiction of the Minister of the Navy to that of the Prime Minister (see 132), the former Civil Administration Department was superseded by a strictly civilian organization, the South Seas Government. This organization, which has its headquarters at Koror in Palau, is often called, even in official sources, the "South Seas Bureau." However, "South Seas Government" is not only a more accurate translation of the Japanese name, Nanyo Cho, but its use serves to avoid confusion with the South Seas Bureau proper in Tokyo, which handles the affairs of the South Seas Government in Japan and maintains liaison with the various ministries of the Imperial Government.

As originally constituted, the South Seas Government consisted of the following: a Governor; his Secretariat, concerned primarily with matters requiring official secrecy and those relating to statistics; a Domestic Affairs Section, supervising local administration and police affairs; a Financial Affairs Section, handling budgets, accounts, and public works; and a Colonial Section, dealing with industries and communications. Under the central South Seas Government a Branch Government was set up for each of the six administrative districts, those of Saipan, Palau, Yap, Truk, Ponape, and Jaluit.

Since its establishment the South Seas Government has undergone frequent organizational changes. The most thoroughgoing of these occurred in December, 1924, when the Government was transferred from the jurisdiction of the Prime Minister to that of the Ministry of Overseas Affairs, which is the colonial rather than the foreign ministry of Japan. Reorganization increased the number of sections from three to five, as follows: Communications, Colonization, Police Affairs, Financial Affairs, and Miscellaneous (or General) Affairs. In addition to the Branch Governments, the following institutions were affiliated with the South Seas Government: a meteorological observatory, seven post offices, seven hospitals, a mining station, an industrial laboratory, courts of justice, seventeen public schools, three primary schools, and two subsidiary or branch primary schools. The following institutions were subsequently added: a Civil Engineering Station at Saipan and a Products Museum at Koror in 1929 and a Marine Products Experiment Station at Koror in 1931.

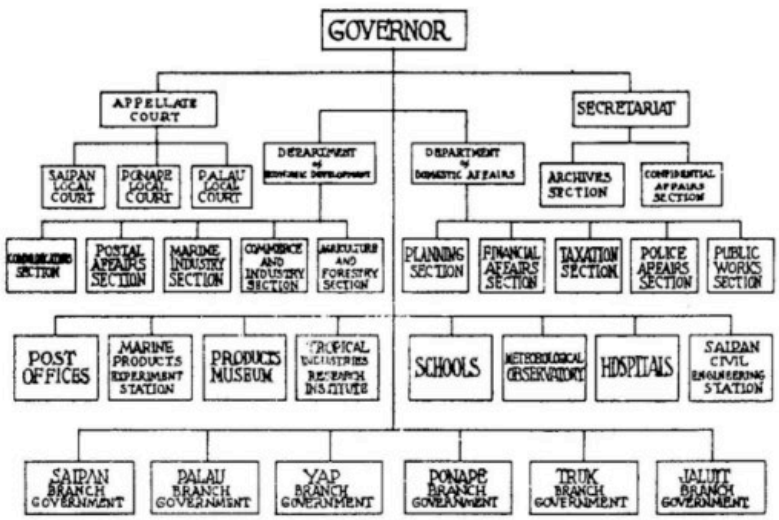
In 1935 the Secretariat was subdivided into two sections, a Confidential Affairs Section and an Archives Section, and to these was added an Investigation Section in 1937. The various sections of the South Seas Government likewise underwent frequent revision, and in 1937 they were grouped under two newly established departments, namely, a Department of Domestic Affairs and a Department of Economic Development (or Colonization).

Greater East Asia Ministry. On November 1, 1942, the Nanyo Cho was transferred from the jurisdiction of the Ministry of Overseas Affairs to that of the newly established Greater East Asia Ministry, which was organized to administer all the conquered regions of Asia and the Pacific not under actual military government. Formed as an emergency organization to handle all political, economic, and cultural affairs in the regions under its administration, the new ministry replaced a number of earlier organizations, assumed their functions, and, for the most part, absorbed their personnel. Among the organizations it superseded were the China Affairs Board (Board of Asiatic Affairs), the Manchukuo Affairs Board, the Colonization Bureau, the Northern Regions Development and Southern Regions Development Bureaus of the Department of Overseas Affairs, and the East Asia Bureau of the Foreign Ministry.

The central organization of the Greater East Asia Ministry, in Tokyo, consists of a Minister, directly responsible to the Prime Minister; a Vice Minister; six Councillors; a Secretariat with four sections, those of Archives, Personnel, Accounts, and Communications; a Bureau of General Affairs; a Manchukuo Bureau; a China Bureau; and a South Seas Bureau. The Minister in 1942 was Kazuo Aoki, who was born in 1889 and was graduated from the School of Law at the Tokyo Imperial University in 1926. He served as Secretary of the Japanese Embassy in London from 1917 to 1921, and thereafter until 1936 held various responsible positions in the Finance Ministry in Tokyo. Between 1936 and 1942 he was successively Vice Director of the Manchurian Affairs Board, Vice President and then President of the Cabinet Planning Board, Finance Minister of Japan, Supreme Advisor to the Nanking Government, and Minister of State without Portfolio. The Vice Minister, Kumaichi Yamamoto, had previously been Vice Minister of the Foreign Office. The Councillors function as individuals, making separate special investigations and acting as coordinating agents between the Ministry and its field offices.

The South Seas Bureau in the Greater East Asia Ministry was given jurisdiction over all general affairs connected with the southern regions, including Thailand and Indo-China. Its Chief in 1942 was Itaro Mizuno, who was born in 1896 and graduated in French law from Tokyo Imperial University in 1920; after holding diplomatic posts in Belgium and

SOUTH SEAS GOVERNMENT (NANYO CHO)-1941



France, he entered the Commercial Affairs Bureau of the Foreign Ministry, where he became section chief and finally Director. The South Seas Bureau, when organized, had six sections, namely, those of General Affairs, Administration, Culture, Economics, Production, and Communications. The relationship of the present South Seas Bureau to the South Seas Government is not known in explicit detail, but it is presumably the same as that of its predecessor in Tokyo, which served as a liaison with the various ministries and handled all matters pertaining to the Nanyo Cho which had to be acted upon in Tokyo and did not require the personal attention of the Minister.

Organization of the South Seas Government. As a result of successive reorganizations, the Nanyo Cho consisted, in 1941, of the Governor, the Secretariat, the Department of Domestic Affairs, the Department of Economic Development (or Colonization), four Courts of Justice, a number of special bureaus and offices, and six Branch Governments. The number of officials reported to be employed by the Nanyo Cho in 1939 is given in the table below, classified according to department or division and status. The actual number of persons in service, however, is somewhat less, since some men, particularly those of high rank, occupy more than one official position.

	Chokunin	Sonin	Hannin	Others	Total
Governor	1	-	-	-	1
Secretariat	-	13	13	40	66
Domestic Affairs Department	-	10	49	48	107
Economic Development Department	-	17	60	52	129
Courts of Justice	-	11	7	5	23
Post Offices	-	1	104	124	229
Hospitals	-	9	30	51	90
Tropical Industries Institute	-	6	12	17	35
Products Museum	-	1	5	4	10
Marine Products Experiment Station	-	2	6	13	21
Saipan Engineering Station	-	1	5	11	17
Meteorological Observatories	-	1	19	35	55
Schools	-	2	231	51	284
Branch Governments	-	7	119	240	366
Totals	1	81	660	691	1433

The terms for rank in the above table require some definition. In the Japanese civil-service system there are four major classes of officials, namely, Shinnin, Chokunin, Sonin, and Hannin in order of rank. Shinnin officials are installed by the Emperor; they are few in number and confined to the Japanese Imperial Government proper. Chokunin officials are appointed by imperial edict. They are classified into a first and a second grade, with a fixed salary differential. The salaries differ somewhat with locality, but the maximum is ¥ 5,350 and the minimum ¥ 4,650 per year. Officials of Sonin rank are appointed by the Cabinet from among graduates of the imperial universities who possess the Ph.D. degree. They fall into two categories, jimukan and experts. Only those who have graduated from an imperial law school qualify as jimukan, and only officials of this category are entitled to hold executive positions such as that of Branch Governor. Independently of these categories, officials of Sonin rank are classified into six grades (numbered from 3 to 8), which carry fixed salaries ranging from ¥ 4,050 down to ¥ 1,130 a year. Officials of Hannin rank are appointed by the ministry under which they serve, although in outlying regions such as the South Seas the appointive power is often delegated to a Governor or other high official. Hannin officials fall into four grades, each of which is subdivided into three classes, and they receive salaries ranging from a maximum of ¥ 2,160 to a minimum of ¥ 480 per annum.

Positions in the civil-service hierarchy carry with them not only precedence but power. A Sonin official, for example, must show deference to and obey the orders of an official of Chokunin rank, and in turn is empowered to command and exact respect from officials of Hannin rank. Within a single named rank, moreover, officials of a higher numbered grade (or class) enjoy the same authority over those with junior appointments. Unless due weight is given to these rigidly observed relationships of dominance and submission, the true nature of the Japanese civil-service hierarchy cannot be properly grasped. In some instances temporary rank is conferred upon an official, carrying with it all the prerogatives of the status but without the title. Thus a man who holds a responsible position may be treated as though he were Sonin, although his actual rank is Hannin.

It should be noted that nearly half of the employees of the South Seas Government do not hold any of the above-mentioned ranks, and are therefore inferior in status to Hannin officials. Such persons include both Japanese and natives. Important among the Japanese officials without rank are policemen, clerical personnel, and service employees. The native officials who fall into this category include village chiefs and headmen, native policemen, native medical practitioners, midwives, and service employees. With few

exceptions, the positions mentioned below are those filled with persons of Hannin rank and above.

An important integrative factor in the organizational structure of the Nanyo Cho does not become apparent from the formally established relationships between offices, institutions, and posts, as represented, for example, in organizational charts. In many instances coordination is primarily achieved through the appointment of a single official to two or more positions. Thus, for example, the integration of the activities of the Confidential Affairs and Archives Sections of the Secretariat is assured by the fact that one man (Kunio Mitsuyasu in 1941) is chief of both sections. Coordination of the Products Museum with the Commerce and Industry Section of the Department of Economic Development is similarly achieved by a common head (Kotaro Sakakida in 1941). In like fashion a close relationship between the Saipan Civil Engineering Station and the Public Works Section of the Department of Domestic Affairs is assured by making a member of the Section (Masao Yasuda in 1941) the head of the Station. The same system of integration also operates within the Branch Governments. It is the usual practice, for example, to appoint two or three members of the staff of the district hospital to positions in the Branch Government itself.

Integration and consistency in administration are also achieved through the established practice of transferring officials frequently from one post to another and from one district to another within the mandated area. In this way administrators are made familiar with a wide variety of problems in different regions. As a consequence, a military occupation of the Japanese islands in Micronesia would probably find relatively few officials still holding the positions attributed to them below. Most of the same personnel, however, would doubtless be found occupying other posts in the area.

Governor. The Governor (less properly called Director) of the South Seas Government in 1940 and 1941 was Shunsuke Kondo (Chokunin), who had been Governor of Kumamato Prefecture in 1939. On November 5, 1943, it was announced that the former Commander-in-Chief of the China fleet, Vice Admiral Ishiro Hosokaya, had been appointed Governor. Hosokaya was born in 1888, and graduated from the Naval Academy in 1908 and from the Naval Staff College in 1920. He had been captain of the battleships Chokai and Mutsu, section chief in the Naval Supplies Bureau, and Director of the Torpedo School and the Naval Communications School, and, since the outbreak of the war, had held important posts at sea.

In 1941, though primarily responsible to the Minister of Overseas Affairs, especially in matters of personnel, the Governor of the Nanyo Cho was responsible to the Minister of State for Communications in respect to matters connected with posts, telegraph, and telephone, and to the Minister of State for Agriculture and Commerce in regard to matters concerned with weights and measures. Since 1942, the Governor has presumably been responsible solely to the Minister of Greater East Asia.

The Governor is empowered, either ex officio or by special authorization, to issue Government orders carrying penalties for infraction of penal servitude with hard labor or imprisonment for a period not to exceed one year, or police detention, or fines of not more than 200 yen. In cases of emergency he may also issue orders with heavier penal clauses, but he must ask for imperial sanction immediately after their issuance, and, if imperial consent is withheld, must announce the invalidity of the orders at issue for the future. Although theoretically clothed with such powers, the Governor has seldom exercised them, for in practice all important administrative decisions have been initiated by imperial ordinances.

Secretariat. The high ranking officials of the Secretariat, together with the Governor, constitute an executive board on matters of policy. In 1940, the following officials of Sonin rank were members of the Secretariat: Kunio Mitsuyasu, Teiichi Domoto (treated as Chokunin), Onji Kanai, Wataru Nakamura, Sanshio Asahara, Kuniyasu Suzugi, Shigekazu Fujimoto, Hatsau Kawano, Isao Araki, Kotaro Sakakida, Kaneto Tsukahara, Yukio Tafuki, and Tsunekazu Sugiura. In 1941, the membership of the Secretariat was reduced to three officials of Sonin rank: Onji Kanai, Wataru Nakamura, and Kunio Mitsuyasu.

The Secretariat consisted, in 1940, of three subdivisions: a Confidential Affairs Section, an Archives Section, and an Investigation (Research) Section. Each section was administered by a chief of Sonin rank, appointed by the Governor. In 1941 the Investigation Section was abolished, and its functions were taken over by the newly formed Planning Section of the Department of Domestic Affairs.

The Confidential Affairs Section was directed in 1941 by Kunio Mitsuyasu (Sonin), the section chief. Assisting the chief in 1939 were three clerks of Hannin rank, Sukezo Sasaki, Yoshitaka Nakajima, and Saburo Okazawa. The functions of this section were the following:

Matters relating to the Emperor's portrait.
Confidential matters.

Status, appointment, and dismissal of officials.
Conferring of court ranks, decorations, and rewards.
Pensions (exclusive of police personnel).
Ceremonies and rites.
Custody of official seals.
Other matters assigned by the Governor.

The Archives Section was, in 1941, also under the direction of Kunio Mitsuyasu. Assisting the chief in the affairs of this section in 1939 were two clerks of Hannin rank, Nagatsugi Nakamata and Taiseki Aoki, and one part-time interpreter of Hannin rank, Orinosuke Kobayashi. The functions of this section were as follows:

Receipt, dispatch, compilation, and preservation of documents.
Examination and distribution of documents.
Affairs relating to books and other publications.
Translation.
Proclamations.
Publication of the Official Gazette.
Matters not in charge of other sections.

Department of Domestic Affairs. The Chief of the Department of Domestic Affairs in 1940 and 1941 was Teiichi Domoto (Sonin rank, treated as Chokunin). In 1940 Domoto was also head of the Investigation Section of the Secretariat, and, in 1941, when this section was abolished and its functions absorbed by the newly formed Planning Section of the Department of Domestic Affairs, he became head of the latter section as well as of the Department. Under the Chief, who is appointed by the Governor and acts under the latter's immediate supervision, the Department is organized into five sections. In 1940 these were the Local Affairs Section, the Financial Affairs Section, the Taxation Section, the Police Affairs Section, and the Public Works Section. In 1941 the Local Affairs Section disappeared and a Planning Section was added, presumably assuming the functions of the former. Each section is administered by a chief, who is responsible to the department head for carrying out the affairs placed under his control.

The Planning Section, formed in 1941 with the Chief of the Department as section head, assumed the functions previously assigned to the Investigation Section of the Secretariat. These were:

Collection, examination, and compilation of all data resulting from investigations.
Collection and coordination of all information.
Exchange, presentation, and publicity of all data and information.
Compilation of statistics and reports.
Census.
Foreigners, issuance of passports, and related matters.
Preparation of annual reports on the administration of the South Sea Islands.
Schemes for the control and utilization of natural resources.
Other matters subject to the special order of the Governor.

The following officials of Sonin rank devoted part of their time to the work of this section:

Isao Araki, also head of the Postal Affairs Section of the Department of Economic Development.

Onji Kanai, liaison representative of the Overseas Ministry, who was also a member of the Secretariat and part-time assistant in the Department of Economic Development.

Hatasu Kawano, also head of the Section of Communications of the Department of Economic Development and head of the Palau Airport.

Wataru Nakamura, liaison representative of the Overseas Ministry, who also served as a member of the Secretariat and as part-time assistant with the Postal Affairs Section of the Department of Economic Development.

Haruhiko Tsuneyoshi, also head of the Marine Industry Section of the Department of Economic Development.

The Planning Section presumably also absorbed the former Local Affairs Section of the Department of Domestic Affairs. This section was headed in 1940 by Sanshio Asahara (Sonin), who was also a member of the Secretariat, and in 1939 it included six clerks of Hannin rank, Sukekasa Fukugawa, Shigeru Hayashi, Hiroshi Handa, Toichiro Hasuka, Katsua Yuasa, and Toshiichi Yagi, and a school inspector, Seikichi Takahashi (Hannin). The functions of the Local Affairs Section had been the following:

Shrines.
Local administration.

Education.
Religion.
Social welfare work.
Military matters.
Meteorological observation.
Land survey and registration.
Investigation of native customs and usages.
Office routine of the Department of Domestic Affairs.

The Financial Affairs Section was administered in 1941 by Kiyomatsu Aoki (Sonin), and the assistant chief was Eiichiro Katakiri (Sonin). In 1939 the affairs of this section were handled by ten clerks of Hannin rank, Mikata Narimoto, Kiyomatsu Aoki, Takejiro Matsuo, Shokichi Kato, Shigeo Watanabe, Kyoji Ishida, Ichiryo Iwahori, Hiromi Tafuki, Takeo Nojima, and Hirosaburo Hishimuma. The last mentioned clerk was employed only on part time by the Nanyo Cho; his principal position was that of clerk at the Bureau of Lighthouses in the Japanese Imperial Government. The functions of the Financial Affairs Section were as follows:

Budget, settled accounts, and fiscal administration.
Revenues other than taxes.
Cash payments and receipts.
Government cashiers.
Property in government custody or trust.
Property accounts.
Supervision of accounts.
Office buildings and official residences.
Administration and disposition of state property.
Order and discipline in the Nanyo Cho.

The Taxation Section was administered in 1941 by Kojiro Okawa (Sonin). He was assisted on part time by Kotaro Sakakida (Sonin), who was also a member of the Postal Affairs Section of the Department of Economic Development, and Kunio Mitsuyasu (Sonin). In 1939 the staff of the Taxation Section included six clerks of Hannin rank, Etsushi Nakao, Suru Hagino, Seigo Hagiwara, Masayoshi Yoshino, Toyoshige Fujiwara, and Kiichi Kunimi, and five assistant experts of Hannin rank, Masyuki Kashiwagi, Utaro Tarumi, Tadafumi Akaishi, Masanari Ishiwara, and Suyeo Marshige. The functions assigned to this section were the following:

Tax administration.
Determination of taxes.
Collection of revenue.
Tax accounts.

The Police Affairs Section was headed in 1941 by Police Inspector Shigeru Hongo (Sonin). This section included the following additional personnel in 1939:

Tamotsu Fujii (Sonin), head of the Nanyo Cho hospitals.

Fumio Nakamura (Hannin), pharmacist and assistant to the head of the hospitals.

Mamoru Nakajima (Hannin), police lieutenant.

Takeshi Akizawa (Hannin), police lieutenant on part time, also serving as police lieutenant in the Kanakawa prefecture.

Jukeiko Wakatabi (Hannin), police lieutenant.

Osamu Himeno (Hannin), police lieutenant.

Yenki Terashima (Hannin), assistant police lieutenant.

Kazuma Toyoda (Hannin), assistant police lieutenant.

Takeshio Umayara (Hannin), assistant expert.

Orinosuke Kobayashi (Hannin), interpreter on part time, working also for the Secretariat.

The functions of the Police Affairs Section were the following:

Police personnel, their duties, promotions, pensions, and salaries.
Passport control.
Execution of sentences.
Fire protection.
Registration of residents and natives.
Harbor administration and quarantine.
Sanitation and medical matters.

The Chief of the Public Works Section in 1940 and 1941 was Yukio Tafuki (Sonin). In 1940 he was also head of the Saipan Civil Engineering Station, but in 1941 he was replaced in that position by Masao Yasuda (Sonin). Assisting Tafuki were the following officials of Sonin rank:

Tamotsu Fujii, surgeon, also head of the Palau Hospital.

Ichio Sakurai, part-time expert, also head of the Agriculture and Forestry Section of the Department of Economic Development.

Masao Yasuda, expert, also head of the Saipan Civil Engineering Station.

Yasaburo Yamashita and Susumu Ishisuzuri, experts.

The staff of the Public Works Section also included, in 1939, three clerks of Hannin rank, Katsutaro Mukai, Shirika Hanari and Naganasa Nakayama, and nine assistant experts of Hannin rank, Kihei Okada, Rishiro Tamura, Kaku Oigawa, Riichi Omon, Masayuki Kamisaki, Senji Yamaguchi, Takeo Ishibashi, Hikoichi Hagino, and Hitoshi Fushimi. The functions assigned to the Public Works Section were the following:

Civil engineering and repair work.
Harbors, railways, rivers, embankments, roads, bridges, and channels.
Surveys.
Town planning.
Reclamation of the foreshore.
Construction and repair of tools and machinery.
Industrial plants.

Department of Economic Development. The head of the Department of Economic Development (or Colonization) is appointed by the Governor and acts under the latter's immediate supervision. The position was held in 1941 by Takasuke Nakamura (Sonin), who was assisted on part time by Onji Kanai (Sonin), by Tatsunari Watanabe (Sonin), and by Hironae Yoshida (Sonin), member of the Bureau of Aviation in the Japanese Government. The Department has five subdivisions: the Agriculture and Forestry Section, the Commerce and Industry Section, the Marine Industry Section, the Communications Section, and the Postal Affairs Section. Each section is administered by a chief, who is responsible to the head of the department for administering the affairs placed under his control.

The Agriculture and Forestry Section was headed in 1941 by Ichio Sakurai (Sonin). He was assisted by six experts of Sonin rank: Tateyoshi Tamura, Ichio Hikisaka, Saburo Yuda, Takeo Takayama, Susumu Mayeda, and Kametaro Otsubo. In 1939 the staff of the section also included three clerks of Hannin rank, Jiro Toge, Ichiro Arigawa, and Kenji Urayma, and eleven assistant experts of Hannin rank, Susumu Mayeda, Kametaro Otsubo, Hiteju Hiraishi, Takeshio Umayahara, Kanji Nakajima, Tamotsu Murakami, Yamanao Kobayama, Yuhei Endo, Atsushi Oniwa, Kemmei Takechi, and Hachiro Okan. The functions assigned to this section were as follows:

Agriculture, forestry, and stock farming.
Immigration and lands for immigrants.
Administration and disposal of lands and forests belonging to the government.
Disposal of the products of government lands and forests.
Copra inspection and plant inspection.
Land utilization.
Office routine of the Department of Economic Development.

The Commerce and Industry Section in 1941 was under the direction of Kotaro Sakakida (Sonin), who was also head of the Products Museum. He was assisted by Keigo Harada (Sonin), who was a member of the Bureau of Savings in the Japanese Government, by Sukemasa Fukugawa (Sonin), by Takenao Kikuchi (Sonin), professor at the Hokkaido Imperial University, and by Hisaburo Tayama (Sonin), an expert at the Tropical Industries Institute. In 1939 the staff of the section also included four clerks of Hannin rank, Yusei Fukugawa, Sekio Yamasaki, Chiyota Inamasu, and Fumio Yoshida, and four assistant experts of Hannin rank, Seiichi Hattori, Hiroshi Sawada, Yasushi Yoshimoto, and Toru Toki. The functions assigned to this section were as follows:

Commerce and industry.
Currency and finance.
Commercial taxes and customs duties.
Industrial cooperative guilds.
Electrical enterprises.
Weights and measures.
Supervision of the business operations of the Nanyo Takushoku Kaisha.
Exhibitions and competitive shows.

The Marine Industry Section was administered in 1941 by Haruhiko Tsuneyoshi (Sonin). Employed in this section in 1939 were one clerk, Yoshii Ban (Hannin), and three

assistant clerks of Hannin rank, Fukio Akaki, Kichiro Udagawa, and Fumiyu Muraki. The functions of this section were the following:

Marine industry.
Manufacture and disposal of marine products.
Propagation and protection of marine animals and plants.
Administration of fishing bases.
Fishing vessels
Inspection of marine products.
Marine industry cooperative guilds and other organizations.
Investigations concerning marine industry.

The functions assigned to the Communications Section were the following:

Aerial navigation.
Ocean routes.
Ships.
Aids to navigation.
Hydrographical data and notices.

The Postal Affairs Section was administered in 1940 and 1941 by Isao Araki. The personnel of the section included three members of Sonin rank: Takao Yakore, who was a member of the Department of Postal Affairs in Tokyo, Tatsunari Watanabe, who was a member of the Insurance Bureau of the Imperial Government, and Wataru Nakamura, a member of the Secretariat and of the Planning Section of the Department of Domestic Affairs. In 1939 the staff of the section also included the following:

Jumbei Kanako (Hannin), clerk.

Ommichi Manabe, Hikosaku Sasaki, Mitsuo Oya, and Masatoshi Nonaka, part-time clerks of Hannin rank, regularly employed at the Department of Postal Affairs of the Imperial Government.

Isao Maruo (Hannin), part-time clerk, regularly employed at the Savings Bureau of the Imperial Government.

Kiyoichi Niiori, Ichkei Matsukuma, Naohite Iwawaki, Shunkichi Ichimura, Kosho Arisaka, Kotaro Ryu, Sosaemon Hasekawa, and Genzo Yokoda, all of Hannin rank, communications clerks.

Junichi Oyama (Hannin), part-time communications clerk.

Hiroshi Nagada (Hannin), assistant communications expert.

Satao Yoshida, Masayuki Masai, Toku Shirado, and Takeo Fukuda, part-time assistant clerks.

The following functions were assigned to the Postal Affairs Section:

Mails, postal money orders, and postal savings.
Petty insurance and postal annuities.
Telegraph, telephone, and radio.

Subordinate Institutions. The South Seas Government has established a number of institutions which are directly subordinate to the central administration and function independently from the Branch Governments of the districts in which they are situated.

A Products Museum, situated at Koror, Palau, exhibits specimens of various products of the mandated islands and articles of geographical, historical, and scientific interest. It also functions as an organization for finding markets for local products. The head of the museum is responsible directly to the Governor. In 1941 this position was held by Kotaro Sakakida (Sonin), who was also Chief of the Commerce and Industry Section of the Department of Economic Development. Assisting at the museum in 1939, on part time, were three other members of the Commerce and Industry Section, all of Hannin rank, namely Yusei Fukugawa, Fumio Yoshida, and Yasushi Yoshimota. In addition, two assistant experts at the Tropical Industries Experiment Station, Shinkichi Taniguchi and Kanji Nakajima, both of Hannin rank, were employed on part time at the museum.

A Tropical Industries Research Institute was established at Koror in 1936. This large and well-equipped institution succeeded an earlier Industrial Experiment Station. It maintains branches at Ponape and Saipan and conducts extensive experimentation in agriculture, animal husbandry, forestry, and mining, as well as providing instruction in these subjects to selected students (see 311). In 1941, the head of the Institute, responsible directly to the Governor, was Ampei Ashizawa (Sonin). The staff included the following persons:

Risaburo Tayama (Sonin), expert, also employed as part-time expert in the Commerce and Industry Section of the Department of Economic Development.

Tamotsu Aizawa (Sonin) and Raiichi Makoshi (Sonin), experts.

Moritaro Hoshino (Sonin), head of the Ponape branch station.

Ichiro Yamanaka (Sonin), head of the Saipan branch station.

In addition to the above, there were on the staff in 1939 the following persons of Hannin rank:

Shigeru Matsui, clerk.

Saikichi Taniguchi, Tsuyoshi Yoshino, Kiyoshi Asano, Datero Endo, Tatsuji Yoshida, and Noboru Kitamura, assistant experts.

Hiroshi Sawada, assistant expert, also employed as assistant expert in the Commerce and Industry Section of the Department of Economic Development.

Kanji Nakajima, assistant expert, also employed as part-time expert in the Products Museum and in the Agriculture and Forestry Section of the Department of Economic Development.

Ichio Ekawa, assistant expert at the Ponape branch station.

Kenji Ishigawa and Kanichi Ichiyanagi, assistant experts at the Saipan branch station.

A Marine Products Experiment Station was established in 1931 at Koror to conduct investigations of fishing, the artificial hatching of fish, the manufacture of marine products, and oceanographic problems. In 1941 the head of the station, responsible directly to the Governor, was Kiyoshi Okajima (Sonin). He was assisted by Yoshioro Tomo (Sonin). In 1939 the following officials of Hannin rank were on the staff of the station: one clerk, Chu Hirogawa, and five assistant experts, Yoshiko Shiraishi, Yoshiko Inanami, Tanzo Nishizawa, Nagao Azano, and Naoshi Kobayashi.

A Meteorological Observatory, established by the South Seas Government at Koror in 1922, engages in the observation and investigation of meteorological phenomena, tides, earthquakes, terrestrial magnetism, and atmospheric currents. Since its establishment a number of detached observatories and weather stations (see 112) have been added to the organization. The detached observatories are at Colony (Ponape), Dublon (Truk), Jabor (Jaluit), Kusaie, and Yap; the weather stations are at Fagan in the Saipan district, Tobi in the Palau district, Ulithi and Woleai in the Yap district, Eniwetok and Kusaie in the Ponape district, and Wotje in the Jaluit district. All information is relayed from these outlying stations to the Observatory at Koror. The members of the staff occupy positions in the detached stations for temporary periods. In 1941 the head of the Observatory was Yoshifu Sugawara (Sonin), who replaced Hiteo Kawasaki (Sonin) in that year. Sugawara was assisted by Tatsuo Iwasaki and Kanefumi Uyei, both experts of Sonin rank. The staff consisted in 1939 of one clerk, Tatsu Fujimoto (Hannin), and 17 assistant experts of Hannin rank, Tsuneji Shinto, Toshiji Ozaki, Takeo Shinozaki, Tsukasa Harada, Yoshio Ishihara, Mori Sone, Yoshiharu Kanako, Sanichi Hashimoto, Satayoshi Naito, Ichio Sakai, Tamotsu Murakami, Naoji Utsuki, Hiroshi Izumi, Yoshisaku Yamamoto, Minoru Fujizawa, Shirushi Watabe, and Susumu Yanagawa.

A South Seas National Shrine was established in 1941, presumably at Koror. Takeo Miyachi (Sonin) was appointed to the shrine as chief priest.

A Civil Engineering Station at Saipan is concerned with the improvement of harbor and port facilities. Other institutions responsible directly to the Governor rather than to the Branch Governments are the courts (see 226), the hospitals (see 254), the post offices (see 271), and the schools (see 262).

214. District Administrative Organization

Branch Government Organization. During the period from 1922 to 1943 the South Seas Government maintained Branch Governments (or Branch Bureaus) in each of the six administrative districts of Saipan, Palau, Yap, Truk, Ponape, and Jaluit. On November 5, 1943, the number of administrative districts was reduced to three: a northern area with headquarters at Saipan, a southern area with headquarters at Truk, and a western area with headquarters at Palau. It is probable that the districts of Ponape and Jaluit were merged with the Truk district to form a single administrative unit, and the Yap district was probably incorporated with that of Palau. These changes may well have been dictated by naval rather than civil considerations, as is suggested by the appointment at the same time of a vice admiral to the post of Governor of the Nanyo Cho. Since the details of administration and personnel are not available for the new organization, information is given below for the Branch Governments as they were organized in 1941.

Each Branch Government has an executive, the administrative head of the district, who is appointed by the Governor of the Nanyo Cho. This official, the Branch Governor, is responsible to the Governor for the execution of all laws and regulations and for the conduct of all administrative matters within his district. He is authorized to arbitrate disputes and to pass summary judgment with regard to certain offenses. With respect to the detection of offenders, as a judicial police officer he has the same power as the public prosecutor at a local court. The Branch Governor is empowered, either ex officio or by special authorization, to issue Branch Government orders. He is not permitted, however, to attach thereto any penal clauses.

According to administrative blueprints, the Branch Governments in Saipan, Palau, and Ponape are organized into four sections: a Local Affairs Section, a Financial Affairs Section, an Economic Development (or Colonization) Section, and a Police Affairs Section. The Branch Governments in Truk, Yap, and Jaluit, however, have but three sections, the Local Affairs Section assuming the functions handled separately elsewhere by the Economic Development Section. Each section is technically under the management of a chief, appointed by the Branch Governor. The functions assigned to the various sections are as follows:

Local Affairs Section
- Confidential and personnel matters.
- Custody of official seals.
- Receipt, dispatch, compilation, and preservation of documents.
- Proclamations.
- Local administration.
- Educational and military matters.
- Social welfare work.
- Religious affairs.
- Census and statistics.
- Investigation of natural resources.
- Mediation in civil cases, notorial acts, etc.
- Night duty.
- Matters not in charge of other sections.

Financial Affairs Section
- Annual revenues and expenditures, and estimates and settled accounts thereof.
- Cash not dealt with under annual revenues and expenditures.
- Imposition and collection of taxes.
- Offenses concerned with indirect duties.
- Certification of tax payments.
- Inventories.
- Matters relating to government property.
- Public works, construction, and repairs.
- Payment of employees.
- Maintenance of order and discipline in the Branch Government.

Economic Development Section
- Agriculture, forestry, stock-farming, mining, and marine industries.
- Immigration and settlement.
- Commerce and industry.
- Currency and finance.
- Inspection of copra and plantations.
- Cooperative guilds and other industrial organizations.
- Exhibitions and competitive shows.
- Electric enterprises.
- Weights and measures.

Police Affairs Section
- Police affairs in general.
- Distribution, duties, appointment, and dismissal of native and Japanese policemen.
- Hunting.
- Lost articles, flotsam and jetsam, and buried property.
- Passports.
- Trials.
- Execution of sentences.
- Sanitation and public health.
- Harbor administration and quarantine.
- Census registration.

In actual practice the formal organization of the Branch Governments into sections serves mainly as a guide to the functions to be performed. At the level of administrative development required by the affairs of the Branch Governments it appears to have proved unnecessary to set up actual sections, and the various functions are assigned, instead, to individual officials.

Yap Branch Government. The Yap Branch Government has jurisdiction over the Caroline Islands between 137° and 148° E. long. Its headquarters are maintained at Tomil Harbor on Yap Island. The Branch Governor in 1940 and 1941 was Kiyoichi Kobayashi (Sonin). The staff of the Yap Branch Government in 1939 included the following persons of Hannin rank:

Ichio Matsumoto, police lieutenant.

Shigeo Nakamura, Masanori Tamanaka, part-time assistant experts, also doctors at the Yap Hospital.

Shinji Nakazawa, part-time assistant expert, also pharmacist at the Yap Hospital.

Hajimu Ito, assistant communications expert.

Yoshihisa Goto, assistant expert.

Noboru Katamura, part-time assistant expert, also assistant expert at the Tropical Industries Research Institute.

Yosaburo Akatsuka, Senichi Suzuki, and Tetsuo Sugimura, clerks.

Setsuichi Okawa, clerk, also part-time clerk at the Yap Hospital.

Palau Branch Government. The Palau Branch Government has jurisdiction over the Caroline Islands west of 137° E. long., i.e., the group sometimes distinguished as the Pelew Islands. Its office is located at Koror on Palau. The Branch Governor in 1941 was Kiyoshichi Ito (Sonin), who replaced Kiichi Takasaka (Sonin) in that year. The office staff in 1939 included the following persons of Hannin rank:

Yozo Omura, police lieutenant.

Zaiki Hirada and Kazuma Toyoda, assistant police lieutenants.

Shunaku Akima, Jinko Takeuchi, and Hiteo Uyeda, part-time assistant experts, also doctors at the Palau Hospital.

Mayuyoshi Sashima and Kunso Yasukate, assistant experts.

Riichi Omon, Hisasuke Tanno, Takeo Umayahara, part-time assistant experts.

Susumu Arimura, Saigo Hagiwara, Kokichi Iwakiri, Bunzo Okawa, Yasuuchi Yano, Takeo Sano, Shoji Sueyama, and Takenobu Kajishima, clerks.

Fumio Nakamura, part-time assistant expert, also pharmacist at the Palau Hospital.

Jitsuhei Mochida, assistant sign expert.

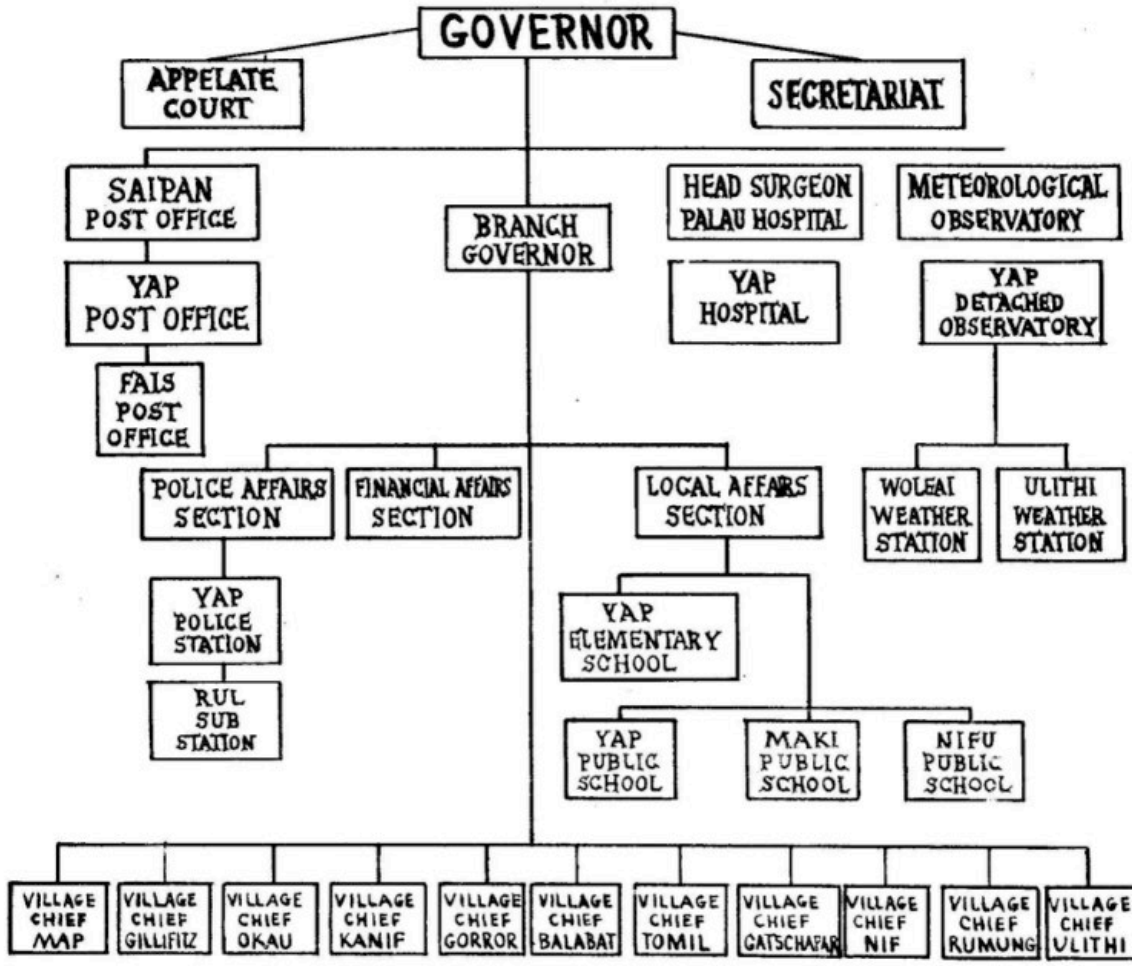
In November, 1943, Palau became the headquarters of a new western area, which presumably consolidated the previously separate Branch Governments of Yap and Palau. It seems probable that this change represented an adjustment to the military situation and to the fact that military government has largely superseded civilian administration in the mandated islands.

215. Local Administrative Organization

Village Chiefs and Headmen. In accordance with the standard provisions of the South Seas Government relative to local administration, each Branch Government appoints native local officials of two grades. Except in the Saipan district, these are known respectively as "village chiefs" (so-soncho) and "village headmen" (soncho). They receive small monthly stipends for their services.

Village chiefs are responsible to the Branch Governor of the district to which they belong, and in theory they are subject to supervision from the General Affairs Section of the Branch Government. A village chief nominally supervises the activities of the village headmen in the district assigned to him, but in actuality a real distinction seldom exists in the functions or authority of the two classes of native officials, and the sphere of influence of a village chief rarely extends beyond the village at which he is stationed. The designated functions of village chiefs, and presumably of village headmen as well, are to notify the members of their respective communities of all the laws, regulations, and instructions that pertain to them, to forward to the higher authorities all applications, reports, and other communications originating in the local area, to collect poll taxes and similar levies, to report epidemics and other unusual events, and to submit a semi-annual report on local conditions. Each native official may have a village policeman and a village secretary to assist him. Such persons, however, are not in government employ, and they are paid by the village chiefs and headmen out of the modest allowances which the latter receive from the government.

YAP BRANCH GOVERNMENT-1941



In the Yap district there are eleven village chiefs, ten of them on the island of Yap itself and one on Ulithi. One Chamorro holds the equivalent title of district chief, and exercises authority over the communities of Chamorro immigrants from the Marianas. The Japanese have appointed no village headmen in this district.

In the Palau district in 1937 there were two village chiefs and 13 village headmen. The village chiefs were the heads of the two powerful federations of Melekeiok and Koror (see 211). The former was given jurisdiction over the northern half of Palau, and the latter over the southern half. The Chamorros in the Palau district are few in numbers and scattered, and they consequently have no chiefs of their own.

Municipal Administration. In towns with a large Japanese population there was established in 1932 a system of village or town council resembling that prevailing in Japan. The male citizens of the town, twenty years of age and over, elect an assembly of between 12 and 24 members, who serve for four years without pay. The assembly elects a mayor for a four-year term and may vote him a small salary. The mayor, with the aid of the assembly, deals with such matters as public health, statistics, municipal finance, and other local affairs. This type of municipal government is in operation in the town of Koror on Palau, the assembly being composed of 16 members. None appears to have been established on Yap.

Departures from Aboriginal Usage. In the Western Carolines the Japanese have attempted to take advantage of the native political structure wherever practicable, and in the main they have used the native chiefs for local administration. The principle followed has been that of appointing paramount chiefs as village chiefs, and less influential native chiefs as village headmen. Occasionally, however, the Japanese have appointed a native official who is not a chief according to traditional usage. Three of the ten village chiefs on the island of Yap, for example, come from other than chiefly families. It is admitted by Yanaihara, a dependable Japanese authority, that the influence of the native chiefs is becoming increasingly nominal and that the system of indirect rule is gradually being supplanted by direct governmental administration in local communities.

216. Civil Rights

Citizenship and Naturalization. The natives living in the territory under Japanese mandate do not possess the status of Japanese subjects. They are called tomin, "inhabitants of the islands," a name designating their special civil status.

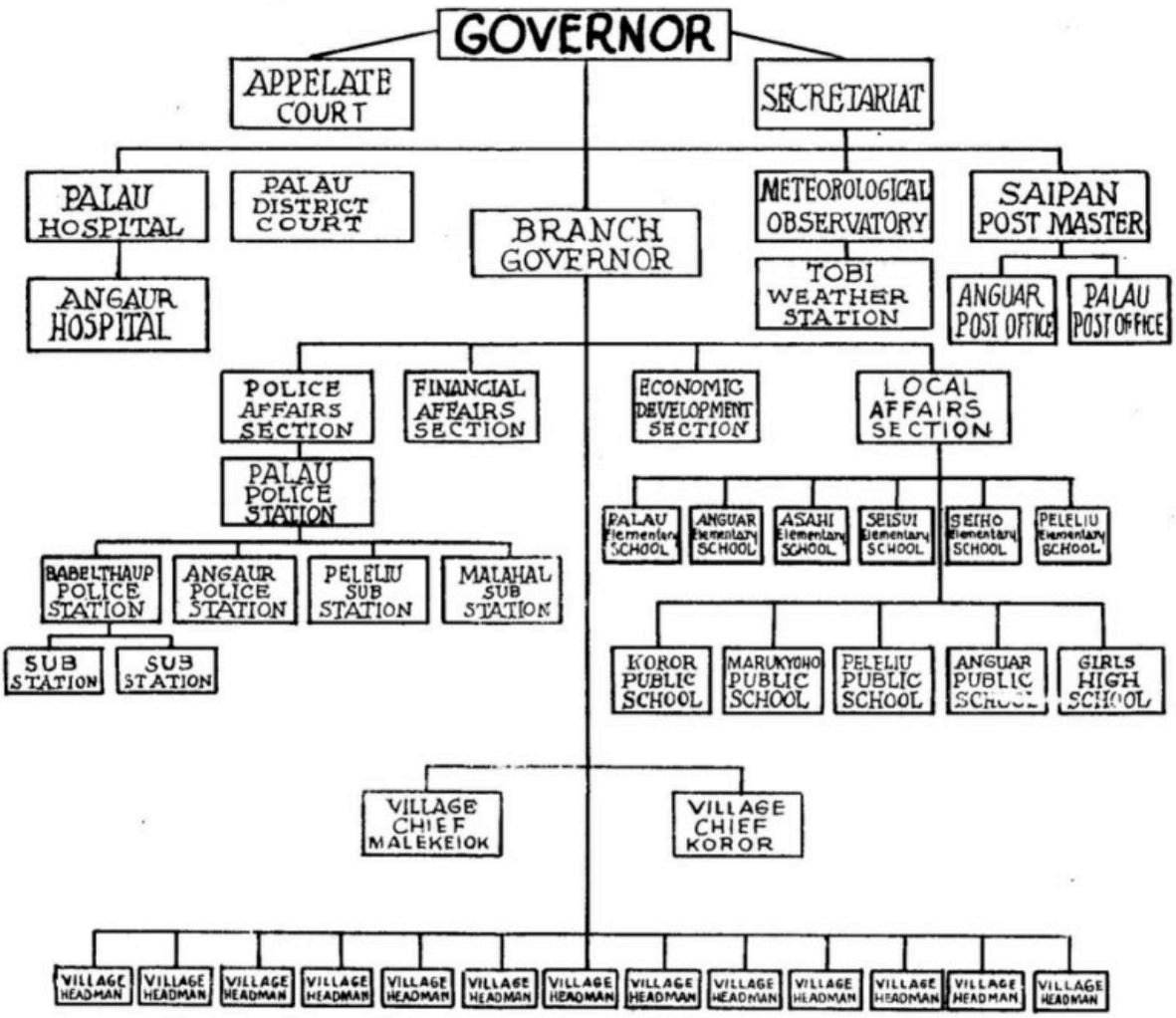
The official reports to the League of Nations state that natives of the islands may acquire full Japanese citizenship through naturalization or marriage under the laws of Japan. These laws provide that an alien may become naturalized with the permission of the Minister of the Interior, but they prescribe that a male applicant must have been domiciled in Japan for at least five consecutive years. This condition makes it virtually impossible for any male native to become naturalized, and in fact none has become a Japanese national by this procedure. Alien women, however, can acquire Japanese citizenship by marrying Japanese men, and their children become subjects of Japan. In 1932 it was officially reported that three native women in the mandated islands had acquired the status of Japanese subjects through marriage to Japanese men, and by 1936 six additional native women had become Japanese citizens in the same manner. Their children, of course, have acquired Japanese citizenship by birth. The districts in which these women and their children live are not reported.

Franchise. Under the appointive system of selecting native officials there are no elections and consequently no voting privilege. The Japanese claim, however, that villagers are consulted in making appointments. In the larger Japanese towns, the municipal councils are elected by male suffrage (see 215).

Civil Liberties. The provisions of the mandate from the League of Nations require the mandatory power to insure "freedom of conscience and the free exercise of all forms of worship." The Japanese claim that "religious belief is entirely free, regardless of sect or race, as long as it does not prejudice the public peace or good morals." In the earlier years of the Japanese administration this claim appears to have been justified, and the missionaries were relatively unhampered in their activities. Ever since 1922, however, governmental controls over religion have been gradually but progressively tightened (see 154).

A measure of economic freedom is guaranteed by the following provision of the mandate from the League of Nations: "The Mandatory shall see that the slave trade is prohibited and that no forced labor is permitted, except for essential public works and ser-

PALAU BRANCH GOVERNMENT – 1941



vices, and then only for adequate remuneration." The Japanese maintain that they have abided faithfully by this clause, but their claim can probably not be fully substantiated (see 331).

Freedom of speech and assembly appear to be seriously restricted. The secret service police (see 223) are instructed to circulate among the people, listening for and reporting subversive talk, and they assume control of all public meetings and assemblies. Moreover, the starting or repeating of dangerous rumors is considered a police offense. Freedom of the press is curtailed by censorship (see 264). Trial by jury and other judicial safeguards of Anglo-American law are not recognized in the prevailing judicial procedure (see 227). Since 1941 the natives have been subjected to compulsory military drill (see 233).

217. Political Factions and Movements

Dissident Elements. There is no evidence of the existence of any recent communist, fascist, nativistic, or nationalistic political movement in the Western Carolines. There is probably some dissatisfaction among those natives who have been dispossessed of their lands by the Japanese for the construction of air and naval bases, and also among those who have been involuntarily recruited to work in the phosphate mines on Angaur (see 331). The few Koreans in the islands may have nationalistic leanings, and some of the Okinawa immigrants may have grounds for resentment. On the whole, however, the dissident elements in the population are few, and their grievances are probably not great enough to justify reliance upon them.

22. LAW AND JUSTICE

221. Native Legal Institutions

Deterrents to Crime. Under aboriginal conditions the most effective deterrent to crime in the Yap district was the fear of private retaliation and blood vengeance. In the Palau district the principal deterrent was the fear of ruinous fines meted out by the assemblies of headmen. With the advent of foreign administrations, these deterrents have become weakened, and they have been replaced only in part by fear of official punishment.

Settlement of Disputes. In the Yap district, disputes among freemen were settled amongst themselves, but disputes in which a serf sought redress from a freeman were ordinarily handled by the paramount chief. In the Palau district most disputes between individuals were settled amongst themselves or referred to the assembly of headmen, whose decision was final. Disputes between paramount chiefs in the Yap district and between federations in the Palau district were settled by war (see 156).

Private Retaliation in Yap. In the Yap district, where village chiefs had no judicial authority and paramount chiefs exercised their judicial authority only in the rare cases when a complaint was made to them, crimes like murder, assault, theft, and adultery were punished in the main by private retaliation on the part of the injured person and his relatives. If the offender was a member of the same settlement, the injured party might forego his right to an eye for an eye and distrain the offender's land or canoe. He simply placed a coconut frond on the land or beside the canoe, and the property could not be used until compensation had been agreed upon and paid. If the offender was from another village, however, blood vengeance was sought. The family of the victim slew the culprit if they could find him; otherwise one of his kinsmen. Because of the effectiveness of this system of self-help, sorcery was used but infrequently as a means of punishment. However, it was often used to discover the culprit or to pile up evidence against him.

Judicial Procedure in Palau. Private retaliation and blood vengeance were practiced in the Palau district only when the crime was committed by someone outside the federation of villages. Judicial procedure in intra-village disputes was informal. The offense would be mentioned at the daily meeting of the headmen at their clubhouse. After deliberation, one of the minor headmen would be dispatched to inform the offender of the amount of the fine, this would be paid after lengthy haggling, and there would be a division of the spoils among the headmen. In cases involving disputes between parties from different villages within the same federation, a similar procedure was followed in the council of village chiefs.

The priests, who were both sorcerers and doctors, brought breaches of taboos to the attention of the headmen or chiefs and were consulted in case there was uncertainty as to law or custom. The men's clubs also had a hand in justice, punishing those who harmed club property or broke certain minor taboos.

Because the fines for all offenses were well known and were pocketed by the headmen or chiefs, many minor disputes were settled privately by the parties involved. The fines varied with the seriousness of the crime and the comparative rank of the offender and wronged. The other punishments, death and exile, were applied only when the offender was unable to pay the fine. Corporal punishment, detention, and penal labor were never inflicted as penalties under aboriginal conditions, but have been introduced by the Germans or Japanese.

Modifications in Native Custom. The German and Japanese administrations have introduced a number of important changes in native legal institutions. In the Palau district the judicial authority of the chiefs has been increased to protect them against encroachments on the part of the men's clubs and priests, and detailed instructions have been issued to them. In Yap attempt has been made to replace the system of private retaliation by empowering the paramount chiefs to handle minor offenses. At the same time the severity of the punishments which can be meted out by the native judicial authorities has everywhere been curtailed, especially by withdrawing the power of pronouncing death sentences.

Forms of punishment alien to native custom have been introduced, such as detention, corporal punishment, and penal labor. On the whole, these introduced sanctions have not proved successful. The natives tend to regard detention as a luxury, and corporal punishment is likely to provoke retaliation. Penal labor alone has been found to operate as an effective punishment, and ways are found of evading even this. Unless

natives sentenced to forced labor are constantly watched, they loaf on the job, and feigned illnesses are all too common. More effective have been the punishments based on native custom which ingenious administrators have applied in the Yap district. The Germans made fines in stone money effective by marking the stones with black paint (see 211). The Japanese cut the hair of petty offenders so short that they cannot wear the combs that distinguish freemen from serfs, and thus expose them to ridicule. However, all observers agree that with the breakdown of the native legal and political institutions there has been a marked increase in the prevalence of petty crimes.

222. Crime Statistics

Prevalence of Crime. According to Japanese official reports, grave crimes are rare, the most numerous being thefts and infractions of the liquor laws. Inasmuch as the Japanese have consistently attempted to convince the League of Nations that their administration in the mandated islands has been successful in all respects, it is possible that the official statistics underestimate the prevalence of crime and vice.

Arrests. A classification of the persons reported to have been arrested in 1937 is given in the following table:

Arrests	Yap District		Palau District		Total
	Japanese	Natives	Japanese	Natives	
For violations of the criminal law					
Interference with public affairs	-	-	2	-	2
Destroying evidence and hiding criminals	-	-	2	-	2
Arson and accidental incendiarism	-	1	4	1	6
Trespass	-	-	2	3	5
Adultery, bigamy, and fornication	-	-	1	-	1
Gambling	-	-	28	-	28
Murder	-	-	1	-	1
Assault	-	4	13	6	23
Accidental injury	-	-	5	-	5
Threatening	-	1	-	-	1
Obtaining money under false pretenses	-	-	1	-	1
Theft and robbery	-	16	30	28	94
Fraud and intimidation	-	-	4	-	4
Embezzlement	-	1	3	1	5
Stolen goods	-	1	-	-	1
Total	-	24	96	39	159
For violations of special regulations					
Liquor	53	209	16	37	315
Fishing	-	-	43	4	47
Vessels	-	-	3	-	3
Total	53	209	62	41	365
Grand total	53	233	158	80	524

Cases of Summary Decision. The criminal cases dealt with by summary decision in 1937, and the number of persons involved in them, are enumerated and classified in the table below:

Offenses	Yap District			Palau District			Total	
	Cases	Jap.	Native	Cases	Jap.	Native	Cases	Persons
Violations of the criminal law	-	-	-	-	-	-	-	-
Violations of special regulations								
Liquor	35	50	180	-	-	-	35	230
Residence	-	-	-	4	4	-	4	4
Public stenographers	-	-	-	2	2	-	2	2
Vessels	-	-	-	2	2	-	2	2
Geisha and shakafu	-	-	-	1	1	-	1	1
Nautical marks	-	-	-	-	-	-	-	-
Abattoirs	3	1	2	-	-	-	3	3
Bicycles	1	-	1	80	66	14	81	81
Cafes	1	1	-	29	29	-	30	30
Butcher shops	-	-	-	2	2	-	2	2
Meetings	-	-	-	28	28	-	28	28

Offenses	Yap District Cases	Jap.	Native	Palau District Cases	Jap.	Native	Total Cases	Persons
Barber shops	-	-	-	3	3	-	3	3
Harbor traffic	-	-	-	6	5	1	6	6
Total	40	52	183	157	142	15	197	392
Police offenses	10	2	8	197	109	88	207	207
Grand total	50	54	191	354	351	103	404	599

The punishments meted out to the persons involved in cases of summary decision in 1937 were as follows:

Punishments	Yap District Japanese	Native	Palau District Japanese	Native	Total
Violators of special regulations					
Fines	5	1	2	-	8
Detention	9	148	2	1	160
Petty fines	38	34	138	14	224
Total	52	183	142	15	392
Violators of police regulations					
Fines	-	-	-	-	-
Detention	1	7	76	87	171
Petty fines	1	1	33	1	36
Total	2	8	109	88	207
Grand total	54	191	351	103	599

District Court Cases. In 1937, 65 criminal cases were tried in the Palau District Court, involving a total of 101 persons. (There is no local court in the Yap District.) In no instance was a decision of "not guilty" rendered. In 58 of the cases the accused were adjudged guilty, and in the remaining seven instances the disposition of the case is not reported. A classification of the offenses in the cases of conviction is presented in the following table:

Offenses	Cases	Persons Involved Japanese	Native	Total
Violations of the criminal law				
Interference with public affairs	1	1	-	1
Destroying evidence or hiding criminals	1	2	-	2
Arson and accidental incendiarism	1	1	-	1
Trespass	3	1	2	3
Adultery, bigamy, and fornication	3	1	2	3
Gambling	4	7	16	23
Assault	7	5	3	8
Theft and Robbery	13	5	9	14
Total	33	23	32	55
Violations of special regulations				
Liquor	11	7	12	19
Fishing	8	8	5	13
Vessels	3	3	-	3
Military duty	3	3	-	3
Total	25	21	17	38
Grand total	58	44	49	93

The punishments meted out to the persons convicted in criminal cases before the Palau District Court in 1937 were as follows:

Punishments	Violators of Criminal Law Japanese	Natives	Violators of Regulations Japanese	Natives	Total
Penitentiary sentences	12	16	3	-	31
Imprisonment	-	-	-	-	-
Detention in workhouse	-	-	-	2	2
Fines	9	7	9	2	27
Petty fines	2	9	9	13	33
Total	23	32	21	17	93

In the same year the prosecutor's office of the Palau District Court handled a total of 132 cases, involving 150 Japanese and 125 native persons. Of these cases, 106 were concerned with violations of the criminal law and 26 with infractions of special regulations. A total of 107 cases were disposed of in 1937, of which 48 were prosecuted, 50 were postponed, 8 were not prosecuted, and 1 was suspended. The action taken on the other 25 cases is not reported. The 48 cases that were prosecuted are analysed in the table below:

Offenses	Cases	Persons		
		Japanese	Native	Total
Violations of the criminal law				
Interfering with public affairs	1	1	-	1
Destroying evidence or hiding criminals	1	2	-	2
Arson and accidental incendiarism	1	1	-	1
Trespass	3	1	2	3
Adultery, bigamy, and fornication	3	18	2	3
Gambling	2	7	16	23
Assault	4	4	1	5
Theft and robbery	14	5	10	15
Fraud and blackmail	1	1	-	1
Total	30	23	31	54
Violations of special regulations				
Liquor	8	8	12	20
Fishing	4	8	3	11
Vessels	3	3	-	3
Military duty	3	3	-	3
Total	18	22	15	37
Grand total	48	45	46	91

The Palau District Court disposed of 10 civil cases in 1937 out of a total of 23 brought before it. Five of the remaining cases were withdrawn. Of the cases received, the great majority involved land disputes between natives. In the same year the court also accepted for safekeeping three deposits totaling ¥ 387 (see 353).

Appellate Court Cases. In 1937 the prosecutor's office of the Appellate Court at Koror investigated 15 criminal cases and 2 cases of special violations and decided to prosecute all 17 of them before the Appellate Court. Three new civil cases were also brought before the Appellate Court, of which two involved land disputes and one a money claim. The criminal and civil cases brought before the Appellate Court in 1937 were classified as follows:

	Criminal Cases	Civil Cases
Total cases	29	7
New cases	17	3
Old cases	12	4
Persons involved in new cases		
Japanese	7	-
Natives	10	3
Cases concluded	2	2
Disposition		
Defendants sent to penitentiary	2	-
Compromise reached	-	2

Prisoners. The number of persons imprisoned in the penitentiary during 1937, classified according to race, district, and type of sentence, is given in the following table:

	Yap District		Palau District	
	Japanese	Native	Japanese	Native
Detained	11	146	79	101
Sentenced to penal servitude	-	-	17	13
Total	11	146	96	114

Suicides. Two suicides were reported for the year 1937, one Japanese in the Palau district and one native in the Yap district. Both chose the method of hanging, and

both deaths were attributed by the police to "depression and pessimism." In addition, five Japanese in the Palau district made unsuccessful attempts to commit suicide. Of these, two attempted to follow the traditional rites of hara-kiri, and the other three took poison.

223. Police Organization

Administration. In each Branch Government, police matters are handled by a Police Affairs Section, which consists of a police lieutenant assisted as a rule by one or more assistant police lieutenants. In addition, the police force of each administrative district is supplemented by a number of Japanese policemen and native constables. They are appointed by the Branch Governor, who submits a report of his selections to the Governor at Koror. Salaries, as reported in 1936, averaged about ¥ 500 for Japanese policemen and about ¥ 375 for native constables. Salaries are supplemented by extra allowances. In 1937, for example, the South Seas Government expanded ¥ 220,725 for police allowances, as compared with ¥ 144,705 for police salaries.

Native policemen are recruited on the basis of a physical and a mental examination, the latter being omitted in the case of applicants who have completed a public school course. The Branch Governor is authorized, with the approval of the Governor, to determine fixed beats in his district and to establish substations. As in all similar cases, the Police Affairs Section of the Department of Domestic Affairs of the South Seas Government exercises no direct control over police affairs in the several Branch Governments. Recommendations emanating from the former go to the Governor, who may incorporate them in instructions and transmit them by way of the Branch Governor. Reports follow the same official channels in the reverse direction.

Police Personnel. In 1939 the police staff of the Palau district included one police lieutenant, 2 assistant police lieutenants, 24 Japanese policemen, and 13 native constables. The police lieutenant was Yozo Omura, and his two assistants were Zaiki Hirada and Kazuma Toyoda. The police staff of the Yap district in 1939 consisted of a police lieutenant, 11 Japanese policemen, and 9 native constables. The police lieutenant was Ichio Matsumoto.

Police Stations. In the Palau district there is an assistant inspector's station on Angaur and one at Melekeiok on Babelthuap. There are police substations on the Arekalong Peninsula and at Arumonogui on Babelthuap, on Peleliu, and on Malakal Island in Palau. In the Yap district there are substations on the island of Map and at Rull, both in Yap proper.

Police Functions. Policemen are classified according to function as policemen for indoor service, those for outdoor service, those for special service, those for secret service, detectives, wardens, and policemen in training. The special service police maintain order at court, handle the quarantine and inspection of ships, control harbors and piers, inspect motor vehicles, and perform other assigned tasks. The secret service police are charged with the gathering of information, with the investigation and control of meetings and assemblies, with the assessing of political movements, and with the handling of foreign police matters. Detectives investigate crimes, arrest criminals, execute warrants, and investigate persons under surveillance. Wardens have the duty of escorting persons accused or suspected of crime and those sentenced to punishment, of guarding those in prison or under arrest, and of attending to all matters connected with prisons and jails.

Police Routine. The service routine of policemen is standardized throughout the mandated islands, but it may be altered, if circumstances warrant, by the Branch Governor with the approval of the Governor. Policemen work eight hours a day, or more if circumstances demand it, and are given one day of vacation after every six working days. Except for sergeants and indoor service policemen, they are required to keep a service diary, which is presented periodically for inspection.

The standard routine for a policeman on duty at a station requires patrol fifteen times a month, a census inquiry once every four months, visits of inspection once a month, and two hours or more per day of duty at the station itself. The routine for outdoor service requires patrol at least three times a day in the locality where the office is situated and at least five times a month in outlying villages, a census inquiry once every three months, visits of inspection once a month, and two hours on duty at the office each day. In all instances, more than one third of the fixed number of patrols must be made at night, and a regular beat must be followed. For each fixed beat the following records must be kept: a service diary, a file of rules and regulations, a file of orders concern-

ing detection of criminals and other matters, a file of instructions to policemen, a copy of the census register, a list of ex-convicts, a register of verbal applications and reports, a file of miscellaneous documents, an inventory of fixtures, and a code book for the transmission of messages.

224. Law Enforcement

Police Supervision. Except for informal social control and such supervision as the native chiefs may continue to exercise (see 211,221), law enforcement is almost exclusively in the hands of the police (see 223). Under the Police Affairs Sections of the Branch Governments, the police are responsible for maintaining peace and order. They enforce the criminal law, including regulations concerning firearms, liquor, drugs, hunting and fishing, and industry. They supervise associations, meetings, and publications, and control prostitution and entry into and residence in the district. The police are also in charge of passports, harbor administration, census registration, and sanitation and public health.

Special Inspectors. In a very few instances, special inspectors are charged with law enforcement. This is true in particular with respect to the examination of copra for export and the inspection of shipments of live plants (see 326).

225. Civil and Criminal Law

Japanese Laws in Force. An ordinance for the Treatment of Judicial Affairs in the South Sea Islands, enacted in 1923 and revised in 1933, defines the laws and regulations which apply to the mandated islands. These are the basic laws of Japan, including the civil, criminal, commercial, and procedural codes, subject to certain special provisions specified in the ordinance as applicable particularly to the mandated area. The laws of Japan which are specifically stated to apply to the mandated islands are the following:

Law concerning the Application of Laws.
Civil Code.
Law relative to the Application of the Civil Code.
Law 50 of the 35th year of Meiji.
Law 17 of the 37th year of Meiji.
Law 40 of the 32nd year of Meiji.
Law 51 of the 33rd year of Meiji.
Imperial Ordinance 144 of the 33rd year of Meiji.
Law 50 of the 32nd year of Meiji.
Law 13 of the 33rd year of Meiji.
Imperial Ordinance 409 of the 33rd year of Meiji.
Law relative to Lost Property.
Commercial Code.
Law relative to the Application of the Commercial Code.
Law relative to Bills.
Law relative to Checks.
Ordinance relative to Protests for Non-Acceptance.
Bankruptcy Law.
Reconciliation Law.
Law 17 of the 33rd year of Meiji.
Imperial Ordinance 271 of the 32nd year of Meiji.
Deposit Law.
Law relating to the Hypothecation of Factories.
Criminal Code.
Law 9 of the 5th year of Showa.
Law relating to the Application of the Criminal Code.
Regulations concerning the Control of Explosives.
Law 60 of the 15th year of Taisho.
Law relating to the Control of Imitation of Currency and Bonds.
Law 34 of the 22nd year of Meiji.
Law 66 of the 38th year of Meiji.
Law 18 of the 4th year of Taisho.
Law relating to Punishment for Offenses concerning Stamps.
Law for Civil Procedure.
Law for the Enforcement of Amendments in the Law for Civil Procedure.
Law relating to the Procedure for Personal Status.
Auction Law.

Law for Criminal Procedure.
Law relating to Costs connected with Criminal Procedure.
Law relating to interrelative Criminal Cases.
Law concerning Cooperation at the Instance of Foreign Courts of Justice.
Regulations concerning the Surrender of Escaped Criminals.
Law relating to Aid for Arrest and Detention of Crews of Foreign Vessels.
Law relating to the Registration of Immovable Properties.
Law for Procedure concerning Non-Contentious Matters.

Special Provisions for the Mandated Islands. The laws of Japan itself, as listed above, apply equally to the mandated islands, with certain modifications which represent special adaptations to local conditions. The most important of the special provisions for the mandated area are the following:

1. Civil cases involving natives alone are to be dealt with according to native custom rather than Japanese law, unless such a procedure is considered disruptive to morals or disturbing to public order.
2. Local custom is to be provisionally respected in regard to property rights in land. This exception was intended to apply only until such a time as a land inquiry and study of customary land laws (see 341) had been completed (it was reported as nearing completion in 1938).
3. Persons other than government agents are prohibited from entering into contracts with natives with a view to the sale, purchase, conveyance, or mortgage of land, except with the sanction of the Governor of the Nanyo Cho.
4. No contracts, except for ordinary small transactions and labor contracts for periods not exceeding one year, are to be considered valid unless the approval of the Branch Governor is obtained and registered.
5. Japanese legal procedure need not be followed in lawsuits involving only natives; the natives may follow any rule of procedure recognized by the courts of justice.
6. A system of people's courts need not be instituted.

In their official reports to the League of Nations the Japanese lay great stress upon the fact that the criminal code of Japan is applied without distinction to natives, foreigners, and Japanese alike.

226. Judicial Organization

Courts of Justice. During the German regime there were no courts of justice in the Caroline Islands. The imperial administrator was empowered to handle judicial matters, civil as well as criminal, and to impose any punishment short of the death penalty.

During the Japanese military occupation, criminal courts were established in the Civil Administration Stations (later the Branch Governments), and a civil court in the Civil Administration Department (later the South Seas Government). The chiefs of the Civil Administration Stations served as judges in criminal cases, and two secretaries of the Civil Administration Department acted as judicial officers in the civil court.

When the South Seas Government was established in 1922, three district courts were established to deal with civil and criminal cases--one at Saipan, one at Palau, with jurisdiction also in the Yap district, and one at Ponape, with jurisdiction likewise in the Truk and Jaluit districts. An appellate court was located at Palau to which appeal could be taken from the decisions of any of the local courts. A public prosecutor's office was attached to each of the courts of justice.

In 1941 the district court at Koror in Palau was served by a judge of Sonin rank, Takeshi Nakamura, who also served as chief justice of the appellate court at Koror. The public prosecutor for both the district and appellate courts was Masayuki Esaki, who was of Sonin rank but treated as Chokunin. His superiority in rank to the judge strongly suggests a dominant influence over him, in accordance with the implications of the Japanese system of rank. In 1939 two officials of Hannin rank, Tokuju Moriya and Jitsuzu Ono, were attached to the district and appellate courts at Koror as clerks.

In theory, all judicial matters in the mandated territory should be handled by the courts of justice. However, in districts where there are no local courts, the Branch Governor is authorized to deal with certain civil cases and to render summary judgment in minor criminal cases. Thus in the Yap district the only cases taken to the Palau District Court are those over which the Branch Governor has no jurisdiction and those in

which an appeal has been taken from his decision.

Officials with Summary Judicial Powers. To facilitate justice in districts where no district courts are established, the Branch Governor and the police lieutenant of the district are given the same powers as the public prosecutor of a district court in regard to the detection of crime, and the Branch Governor is authorized to render summary decisions in cases involving offenses punishable by detention or minor fines and in those involving gambling offenses or infractions of administrative laws and regulations punishable by detention or penal servitude of less than three months or by fines of less than ¥ 100. The Branch Governor of a district which has no local court is also empowered to draw up notarial deeds, to certify private documents, to transact affairs related to registration and deposit, to direct the sale of real estate at auction when so required by law, and to arbitrate in civil disputes upon application of the parties.

A summary decision becomes final three days after it is rendered or, if the accused has not appeared at the hearing, five days after he has been served with the decision, unless during this period he registers his dissatisfaction and applies for a formal trial. In this event the case is transferred for trial before the district court at Koror. The Branch Governor may also so transfer the case if he decides that a formal trial is necessary or desirable. In actual fact, however, very few cases arising in the Yap district come before the Palau District Court.

Village chiefs, and also village headmen, are authorized to render summary decisions in respect to certain minor offenses committed by natives in isolated islands. The offenses with which these native officials are empowered to deal are limited in the main to those punishable by the imposition of penal labor for a period not exceeding 30 days, such as failure to destroy insects injurious to palm trees, failure to report births, deaths, and changes of residence to the authorities, vagrancy, commission of public nuisances, damage to public property, and disobedience of orders issued by village chiefs or of instructions issued by the Branch Governor and duly proclaimed.

227. Judicial Procedure

Court Procedure. The procedure in courts of justice follows in general the provisions laid down in the Japanese Law for the Constitution of the Court of Justice, with certain modifications. These modifications are as follows: (1) a court, when required to appoint a lawyer to act as counsel, may call upon a person not a lawyer to carry out this function; (2) in urgent cases, where no court is in existence, suits and judicial documents presented before a Branch Government are as valid as those presented before a court; (3) in cases involving only natives, any judicial procedure accepted by the court concerned may be followed without reference to the provisions laid down by law; (4) in civil cases, a judge may cross-examine witnesses when taking evidence and may decide the case immediately if he considers that the witnesses have committed perjury; (5) in civil cases, provisions regarding the procedure of pressing for payment are not applicable to debtors who are natives; (6) in civil cases, all relevant documents are transmitted to the Branch Governor for execution at the conclusion of a case, and when the procedure of execution is completed, the documents are returned to the court; (7) in criminal cases, if the accused does not live within the jurisdiction of the local court, his case may be transferred to the local court having jurisdiction over his place of residence; (8) in criminal cases, if the exigencies of the situation require prompt action, the public prosecutor may order an arrest without obtaining a warrant from the judge; (9) the public prosecutor or the police lieutenant may conduct inquiries and, if the case is considered sufficient to warrant prosecution, may institute such processes in the court without preliminary examination; and (10) in a criminal case, when decisions are made in a local court imposing a sentence of penal labor or imprisonment for less than one year, or a fine of less than ¥ 300, the court need not state its opinion of the case unless an appeal is made to the appellate court at Koror.

Arbitration Procedure. A local court or the Branch Governor in a district where there is no court of justice may arbitrate in civil disputes upon application by the parties concerned. Such applications, which may be made either orally or in writing, must designate the opposite party and contain a clear statement of the actual conditions of the dispute. When an application has been made, the arbitrator fixes a date for the hearing and summons the parties concerned. If one party has moved from the district, the arbitration may be transferred elsewhere at the request of the applicant. Before undertaking to arbitrate, the arbitrator may order taken any measures he considers necessary to the successful conduct of the case. He may also summon witnesses, undertake visits of inspection, and order suitable experts to render opinions.

When an arbitration fails, the arbitrator (court or Branch Governor) concludes the case by making a declaration to that effect. If the arbitration succeeds, he draws up a protocol including the names, addresses, and occupations of the parties concerned, the essential points in the statements of each, and the terms agreed upon, and he is empowered to execute these terms.

The costs of arbitration are borne by the parties involved, and are determined at the discretion of the arbitrator. An applicant for arbitration may be ordered to pay the costs in advance. Witnesses and experts are compensated for their traveling and lodging expenses and are given a daily allowance.

Procedure in Summary Decisions. In rendering a summary decision without a formal trial, the Branch Governor hears the statement of the accused, takes evidence, and delivers his decision immediately. The decision is recorded in writing in a document which contains the date of the decision, the name and the title of the official making the decision, the name, address, age, and occupation of the accused, a statement of his offense, the article and clause of the law or regulation applied, the punishment imposed, and the period within which application for a formal trial can be made. If the accused has not been summoned, or has failed to obey a summons, he is served with a copy of the decision. Service is made by a policeman or native constable either upon the accused in person, or upon a member of his family living in his home, or upon his employer or an employee.

If the accused has been sentenced to imprisonment or penal labor, the Branch Governor issues a warrant of detention against him or, if necessary, orders him detained temporarily in a police cell. If a fine has been imposed, the accused is required to pay it; if he fails to do so, he is detained one day for each yen (or fraction thereof) of the fine. If the execution of the punishment is commissioned to another office, a written authorization, accompanied by an attested copy of the summary decision, is sent to that office. If the execution is to be made in a prison, the convicted person is dispatched there, and an attested copy of the decision with instructions for its execution is sent to the prison officials.

If dissatisfied with the decision, the person sentenced is allowed three days after being heard, or five days after being served, to submit in writing an application for a formal trial. If he does so, and is under detention, he is released immediately. The application, together with all relevant information, is forwarded by the Branch Governor to the public prosecutor of the district court at Koror. As already noted (see 226), however, such appeals are rarely made.

Judicial Fees. The Japanese Government has prescribed in great detail the fees to be paid in all judicial matters. The schedule of fees is summarized below:

For instituting an action in a local court involving a claim concerning property rights: 25 sen for a claim up to 5 ¥; 40 sen, up to ¥ 10; 80 sen, up to ¥ 20; ¥ 1.80, up to ¥ 50; ¥ 2.50, up to ¥ 75; ¥ 3.50, up to ¥ 100; ¥ 7, up to ¥ 250; ¥ 12, up to ¥ 500; ¥ 15, up to ¥ 750; ¥ 18, up to ¥ 1,000; ¥ 25, up to ¥ 2,500; ¥ 30, up to ¥ 5,000; ¥ 3 additional for each thousand yen, or fraction thereof, over ¥ 5,000.

For instituting a suit not involving a claim concerning property rights: ¥ 3.50.

For instituting an appeal: one-half of the amount of the original fee in addition thereto.

For requesting a new trial: fees appropriate to the court to which the request is made.

For instituting an action for the declaration of a judge's order; 20 sen if the subject matter of the suit is less than ¥ 10; one-half of the fee payable for such a suit in the local court, if the value of the subject matter exceeds ¥ 10.

For instituting any of the actions listed below: 20 sen if the subject matter does not exceed ¥ 20; 40 sen, if it is more than ¥ 20.

Declaration for the appointment of a date.
Application for the renewal of an interrupted or suspended judicial process.
Application for a compromise.
Declaration concerning provisional execution.
Application for the suspension or continuation of compulsory execution, or for cancellation of steps taken for execution.
Claim for the payment of dividends.
Application for compulsory auction or administration.
Application for seizure of obligatory or other rights over property.

Application for public summons procedure.

For instituting any of the actions listed below: 50 sen if the value of the subject matter of the suit or the amount of the claim does not exceed ¥ 20; ¥ 1 if either exceeds ¥ 20.
Complaint.
Protest.
Proposal for the examination of evidence.
Declaration for the preservation of evidence.
Application for provisional execution or disposition.
Application for an exemplified copy possessing executive force.

For instituting any of the actions listed below: no fee is required.
Application for assistance in connection with a suit.
Application for the appointment of a competent court.
Declaration for the rectification of a previous decision by amendment.

For initiating any application, declaration, or proposal not mentioned above: 20 sen if the value of the subject matter of the suit, or the amount of the claim, does not exceed ¥ 20; 25 sen if either exceeds ¥ 20.

For an application for arbitration of a civil dispute: 15 sen if the value of the subject matter does not exceed ¥ 5; 20 sen, up to ¥ 10; 30 sen, up to ¥ 20; 50 sen, up to ¥ 50; 70 sen, up to ¥ 75; ¥ 1, up to ¥ 100; ¥ 2, up to ¥ 250; ¥ 3, up to ¥ 500; ¥ 1 additional for each 500 yen, or fraction thereof, in excess of ¥ 500.

For an application for arbitration of a civil dispute not involving property rights: ¥ 1.

For obtaining exemplified or attested copies of a protocol of arbitration; 20 sen per copy.

For obtaining copies of the transference of an execution clause in an arbitration case: 30 sen per copy.

For bankruptcy proceedings: fees proportional to the assets after deducting costs of administration, according to the following schedule: 50 sen on assets up to ¥ 5; 80 sen, up to ¥ 10; ¥ 1.60, up to ¥ 20; ¥ 3.60, up to ¥ 50; ¥ 5, up to ¥ 75; ¥ 7, up to ¥ 100; ¥ 14, up to ¥ 250; ¥ 24, up to ¥ 500; ¥ 30, up to ¥ 750; ¥ 36, up to ¥ 1,000; ¥ 50, up to ¥ 2,500; ¥ 60, up to ¥ 5,000; ¥ 6 additional for each thousand yen, or fraction thereof, above ¥ 5,000. Whenever a dividend is paid from the assets, a sum equal to the fee payable on that amount is reserved, and when the final settlement is made, the fee paid is in proportion to the total sum of the dividends.

For instituting proceedings in a non-contentious case: 20 sen if the value of the claim does not exceed ¥ 20; 25 sen if it exceeds ¥ 20. However, if an application for judicial subrogation, a declaration of auction, or a protest is made, the fee is 50 sen if the value of the claim does not exceed ¥ 20, and ¥ 1, if it exceeds ¥ 20.

For applying for the judgment or judicial direction of a court of justice, except in cases concerning commercial registrations: ¥ 1 for a protest; 25 sen for a defense against a protest; 25 sen for any other application or declaration.

For applying for registration in connection with buildings: fees as follows:
Acquiring ownership of a house by inheritance or by succession to the headship of the house: one five-thousandth of the value of the building.
Acquiring such ownership by will, by gift, or otherwise without valuable consideration: one fifty-thousandth of the value of the building, except in the case of a shrine, temple, church, or juridical person, when the fee is one ten-thousandth.
Acquiring ownership of a house by any other means: one thirty-thousandth of its value.
Maintaining a right of ownership hitherto possessed: one three-thousandth of the value of the building.
Dividing common property: one five-thousandth of the part of the value of the building coming under ownership by division.
Acquiring a leasehold right: one thousandth of the value of the building when the term of the lease does not exceed ten years; one two-thousandth, if the term exceeds ten years.
Preserving or acquiring a preferential right: one six-thousandth of the amount secured or of the estimated cost of construction of the building.
Acquiring the right of pledge or mortgage: one six-thousandth of the amount se-

cured or, if no amount is secured, of the value of the object pledged or mortgaged.
Declaring an auction: one six-thousandth of the amount secured, or of the value of the object offered for sale, whichever is less.
Submitting a provisional seizure or disposition: one four-thousandth of the amount secured, or of the value of the object concerned, whichever is less.
Seizing a mortgaged obligation: one six-thousandth of the amount secured, or of the object seized, whichever is less.
Dividing an inheritance: one two-thousandth of the value of the building for right of ownership; one thousandth, for rights other than ownership.
Recovering a registration canceled by application or declaration: 20 sen per building.
Making a provisional registration: 20 sen per building.
Revising, changing, or canceling a registration, or making an additional registration: 10 sen per building.

For applying for registration of a factory foundation register, in connection with acquiring a mortgage, declaring a compulsory auction or compulsory administration, or submitting a provisional seizure or disposition: one thousandth of the amount secured; ¥ 2 for revising, changing, or canceling such a registration.

For applying for registration creating or canceling a trade name: ¥ 2.

For applying for registration in appointing a manager or canceling an agency: ¥ 2.

For applying for registration in connection with a commercial company or other juridical person established with a view to profit: fees as follows:
Establishing an ordinary partnership or a joint-stock partnership: one thousandth of the capital invested.
Increasing the capital of such a partnership: one two-thousandth of the total capital invested.
Establishing a joint-stock company or a limited joint-stock partnership: one two-thousandth of the paid-up shares.
Increasing the capital of such a company: one two-thousandth of the increased capital.
Paying the second and subsequent installments of the share-capital: one two-thousandth of the share-capital paid on each occasion.
Establishing a company by amalgamation or reorganization: one thousandth of the paid-up share-capital paid on each occasion.
Increasing the capital of such a company: one thousandth of the increased share-capital and of other capital invested.
Introducing a debenture: one thousandth of the amount paid.
Establishing a branch: ¥ 3 per establishment.
Removing a branch: ¥ 2 per establishment.
Appointing a manager: ¥ 2.
Canceling an agency: ¥ 2.
Amending or canceling registration: ¥ 2.
Dissolution: ¥ 2.
Appointing, dismissing, or changing a liquidator: ¥ 1.
Settling liquidation: ¥ 1.

For applying for a copy of the registration of immovable property, or of a property agreement concerning a juridical person or a husband and wife, or commercial matters; 10 sen per sheet of the copy.

For applying for verification of the fact that there is no change in matters registered, or that there is no registration of a certain matter: 10 sen.

For obtaining a certificate attesting the completion of the registration of commercial matters or of a property agreement concerning a juridical person or a husband and wife: 5 sen.

For applying for the drawing up of a notarial deed: 40 sen per sheet of the original copy.

For applying for the delivery of the exemplified copy or an attested copy of a notarial deed or annexed documents: 20 sen per sheet.

For applying for the attachment of an execution clause to the exemplified copy of a notarial deed: 30 sen per copy.

For lodging a protest against the execution of his duty by a notarial official: 50 sen.

For applying for the certification of a private document: 50 sen per copy.

For applying for the inscription of the fixed date on a private deed: 10 sen.

For applying for the drawing up of a protest: 25 sen.

For serving documents, whether personally or by mail: 5 sen per document.

For service in connection with seizure or provisional seizure: 30 sen when the amount of the obligation for which execution is to be levied does not exceed ¥ 20: 50 sen, up to ¥ 50; 75 sen, up to ¥ 100; ¥ 1, up to ¥ 250; ¥ 1.25, up to ¥ 500: ¥ 1.50, up to ¥ 1,000; ¥ 2, over ¥ 2,000. When the time required for execution exceeds three hours, 30 per cent is added to the above fees for each additional hour or fraction thereof.

For service in connection with the surrender or vacation of property: 50 sen, with an additional 15 sen for each hour, or fraction thereof, above three required for the execution of the duty.

For service in connection with sale at auction: 30 sen when the proceeds of the sale or the secured sum, whichever is less, do not exceed ¥ 20; ¥ 1, up to ¥ 50; ¥ 1.50, up to ¥ 100; ¥ 2, up to ¥ 250; ¥ 2.50, up to ¥ 500; ¥ 4, up to ¥ 1,000: ¥ 1 additional for each thousand yen, or fraction thereof, over ¥ 1,000.

For serving a notice or summons not relating to compulsory execution: 10 sen.

For delivering attested copies of documents: 3 sen per half sheet containing 12 lines with 20 characters per line.

228. Offenses and Sanctions

Major Crimes. The criminal code of Japan is specifically stated to apply to the mandated islands (see 225). In default of any evidence to the contrary, therefore, it must be assumed that major crimes, such as murder, manslaughter, arson, rape, mayhem, and assault, are punished in accordance with Japanese law.

Police Offenses. The Branch Governor is empowered to impose detention, fines, or penal labor for violations of police offenses. He is also authorized, upon obtaining permission from the Governor, to intrust a part of this authority to village chiefs.

Police offenses include a variety of acts recognized as misdemeanors by local custom, local ordinances, or Japanese law. The following are specifically designated as police offenses:

Trespassing.

Vagrancy.

Begging.

Accosting a person without legitimate reason.

Unreasonably annoying or intimidating a person.

Exacting donations or contributions of money, or distributing goods among people against their will, for the purpose of making a profit.

Interfering with a tender, exacting a joint tender, or exacting a share in the work, profits, money, or goods from a successful bidder.

Making false claims through advertisement or other means.

Forcibly demanding a subscription to a magazine, newspaper, or other publication.

Adulterating food or drink to make a profit.

Selling injurious food or drink for profit.

Displaying in a store uncovered food that is eaten raw.

Polluting drinking water.

Blocking the free passage of a stream, gutter, or drain.

Arbitrarily firing a gun or playing with explosives.

Arbitrarily starting a fire near a house or other building.

Injuring another person or defacing his property.

Arbitrarily abandoning, or neglecting to remove, the dead body of a bird or beast, foul matter, or rubbish.

Circulating malicious or alarming rumors.

Deluding people by fortune telling, divination, or offering charms and amulets.

Impeding medical treatment by practicing incantations or prayers, by administering charms or holy water, or the like.

Practicing hypnosis.

Treating employees unreasonably.

Failing to aid a sick or aged person, a child, or a cripple by reporting their needs to the authorities.

Failing to notify the authorities of a corpse or a stillborn child of which one has cognizance.

Removing or concealing a dead body without specific permission from the authorities.

Defiling a Shinto shrine, a Buddhist temple, a church or chapel, a graveyard, a tombstone, a monument, a statue, or any similar object.

Obstructing a funeral service or any ceremony or procession.

Obstructing a business procedure.

Annoying the audience of a theater, concert, or similar assemblage.

Disturbing the sleep of other people by such acts as singing or loud talking after midnight.

Releasing, or using without permission, a vehicle, vessel, or animal belonging to another.

Keeping domestic animals or fowls in a place forbidden by the authorities.

Neglecting to chain or confine dangerous animals.

Frightening an animal.

Ill-treating an animal in a public place.

Engaging in dog-fighting or cock-fighting without permission.

Neglecting to confine an insane person in defiance of an order from the authorities.

Behaving in a disorderly manner while drunk.

Obstructing a public thoroughfare.

Failing to mark a dangerous place in a public thoroughfare in a clear manner.

Leading an animal or operating a vehicle at night without a light.

Extinguishing without permission the light of another person's vehicle or a public night-light.

Climbing up a public structure without permission, or using a public structure as a hitching post.

Using a railroad track as a thoroughfare.

Engaging in secret prostitution, pandering, or using one's house for such a purpose.

Tattooing or making marks on one's own or another's body.

Behaving indecently in a public place.

Committing a nuisance in a park or on a public thoroughfare.

Creating a public disturbance.

Soiling, damaging, or removing a posted notice.

Using or removing any part of government property without permission.

Disobeying a government summons without legitimate reason.

Giving a false statement, or refusing to give a statement, to a government office.

Giving false information to a government office concerning one's name, age, residence, profession, or the like.

Impersonating a government official

Infringing a prohibition announced by, or under the direction of, a government office.

Interfering with a lawsuit.

Failing to respond to a call from a patient without legitimate reason, on the part of a physician or midwife.

Violations of Regulations. Regulations and the sanctions attached to their violation are described in connection with the activities to which they relate. See especially 134 for those concerned with religion, 25 for those on sanitation, 262 for those on education, 29 for those on transportation, and 313 for those on fishing.

Penalties. The principal penalties imposed by the Japanese administration are death, fines, detention, and penal labor. Confiscation can also be imposed as an accessory penalty. Some indication as to the distribution of these penalties can be inferred from the available crime statistics (see 222). Japanese offenders appear to be more often fined; native offenders, to be detained or sentenced to penal labor. Fines are classified according to severity into fines, i.e., major fines, and petty fines. If not paid, fines are commuted into detention at the rate of one day for each yen of the unpaid fine. The facilities for detention consist of a prison, a detention house, and a workhouse in each district. Prisoners serving long terms are transferred to the prison of the Saipan Branch Government, which is better equipped than those at Koror and Yap.

In dealing with natives, the Japanese apparently discovered that fines and detention were relatively ineffective as punishments, and they have come to rely more and more heavily upon penal labor. By law, penal labor or detention in a workhouse cannot, in the case of a native, exceed a period of one year. Penal servitude obviously offers the advantage of supplying a labor force for public works, although the Japanese have consistently maintained, in their reports to the League of Nations, that it is not to be regarded as a system of forced labor. They likewise insist that it is not wage labor, but they have instituted a system of prizes for persons engaged in penal labor which have much the effect of wages.

229. Records

Official Records. The Secretariat of the South Seas Government contains an Archives Section located at the central headquarters at Koror. In 1941 this was headed by an official of Sonin rank, Kunio Mitsuyasu. In 1939 the assistants in this section were two clerks of Hannin rank, Nagatsugi Nakamata and Taiseki Aoki, and one part-time interpreter of Hannin rank, Orinosuke Kobayashi. This section receives, examines, compiles, preserves, and distributes documents. It also handles translations, proclamations, publication of the Official Gazette, and affairs relating to books and other publications.

The collection of information and data, the compilation of census and other statistics, the administration of the land survey and of land registrations, and preparation of annual reports on the administration of the South Seas Islands are in the hands of the Planning Section of the Department of Domestic Affairs of the South Seas Government at Koror. Important industrial and experimental data are recorded by the Tropical Industries Research Institute and the Marine Products Experiment Station at Koror. Records of meteorological observations are kept by the observatory at Koror.

Although official records are commonly transferred from the Branch Governments to the South Seas Government at Koror, a considerable number, and copies of others, are undoubtedly retained in the district offices at Koror and Yap. Among them, the most important are probably the following: meteorological observations (see 112), census data (see 143), vital statistics (see 144), crime statistics (see 222), police records (see 223), reports of judicial proceedings (see 227), health records (see 251), educational records (see 262), postal accounts (see 271), shipping records (see 294), registers of travelers and aliens (see 296), reports of agricultural production (see 311), fishing licenses (see 313), real estate records (see 341), probate records (see 343), data on imports and exports (see 345), and fiscal accounts (see 356).

Private Records. Records of employment (see 331) and business transactions (see 326), are probably available at the main and branch offices of commercial firms. Presumably mission stations (see 134), and associations (see 166), likewise keep private records of their own.

23. PUBLIC SAFETY

231. Fire Prevention and Control

Prevalence of Fires. Owing to the high humidity, especially in the high islands, fires are rare in the Western Carolines. Although the low islands receive less rainfall, they are also less heavily forested, and consequently serious fires rarely occur. With the growth of larger towns, such as Koror in Palau, there may have been some increase in the prevalence and seriousness of fires. In 1937 only four fires were officially recorded in the Yap and Palau districts, all occurring to buildings, and causing damage estimated at ¥ 4,260.

Fire Control. Wherever it has been considered necessary, the Japanese have established official fire brigades, consisting of about 40 men each, which are called out on the occasion of fires, storms, marine disasters, and other calamities. The necessary expenses of these brigades are defrayed by the Government. Each fire brigade is organized with a captain and a foreman appointed by the Governor. A fire brigade was established on Palau in 1929, but none has been reported for Yap.

When there is a fire the brigade acts independently to deal with the situation, but on the occasion of any other calamity the fire brigade acts under the direction of police officers. To announce a fire an alarm bell is rung continuously; when any other calamity occurs there are two consecutive ringings of the bell. When the emergency is over, there is a single peal of the bell, followed after an interval by two consecutive ringings.

232. Emergencies

Calamities. Storms and epidemics are the major emergencies in the Western Carolines. Typhoons occur from time to time, but not with great frequency. Those of 1907 and 1925 in the Yap district, and of 1904, 1912, and 1927 in the Palau district, wrought considerable havoc (see 112). The typhoon and tidal wave of 1925 in the Yap district caused damage estimated at ¥ 1,502,367, and similar calamities in the Palau district in 1927 brought about damage to the extent of ¥ 1,420,562. In 1937 less serious storms in the Western Carolines caused damage estimated at ¥ 54,067. There have also been numerous epidemics of a serious nature, though none has occurred since the Japanese occupation. Fires are relatively rare.

Emergency Control. Fires are taken care of by the fire brigade, if there is one available. Other calamities, with the exception of epidemics, are handled by the fire brigade under supervision of the police. Epidemics are dealt with exclusively by the medical authorities, who may, however, call upon the police for assistance.

233. Defense Organization

Fortifications and Bases. The terms of the mandate from the League of Nations prohibit the erection of fortifications and the construction of military or naval bases. Despite repeated denials by the Japanese in official reports to the League, it is well known that fortifications have been built and air and naval bases established in a number of the Caroline Islands, and that construction began long before the attack on Pearl Harbor. The principal base is at Truk. Information on military installations is found in Army and Navy publications of a higher classification than the present volume.

Military Training. Under the German administration, military training was given to a few natives in the Western Carolines. The mandate from the League of Nations, however, specifically forbids the giving of military training to natives except for the purpose of internal policing and local defense. The Japanese have officially denied that the native population in the mandated area has been subjected to military training under their administration. In 1941, however, compulsory military training for purposes of defense was initiated in the Eastern Carolines, and presumably also in the Western Carolines.

Civilian Defense. The fire brigades organized to handle emergencies (see 231) might well serve as nuclei for civilian defense in local areas. In February, 1941, all the male inhabitants of Kusaie in the Eastern Carolines between the ages of 12 and 60 were called out to begin military training for island defense. This training was announced as compulsory, and it was planned to devote the entire day each Sunday to military drill. Although not specifically reported for the Western Carolines, it is likely that similar orders were put into effect there.

24. PUBLIC WELFARE

241. Standard of Living

Natives. Judged by European standards, the natives have a relatively low standard of living. Their wealth in terms of money and other material possessions is meager. Under the Japanese administration, however, they have begun to reap some of the benefits of civilization. The mandate accepted by Japan prescribes that the mandatory power shall promote to the utmost the material and moral well-being and the social progress of the inhabitants of the territory. That this has been followed to some extent cannot be questioned. The natives now have opportunities for education (see 262) and recreation (see 155) that formerly did not exist. Their diet is adequate in amount and reasonably varied (see 152). Housing conditions have been improved (see 323). The natives are provided with health and sanitation services (see 25). Working conditions are safeguarded by legislation (see 332). Earned wages (see 333) permit the purchase of clothing, household articles, trinkets, imported foods, and the like (see 344), although the inflow of foreign products has been severely curtailed since 1940 (see 345).

Japanese. Little direct information other than on working conditions and wages (see 332, 333), is available on the standard of living maintained by the Japanese in the Western Carolines. It is doubtless quite satisfactory for the military, naval, and administrative personnel. For the civilian Japanese population, which has immigrated mainly from the Okinawa prefecture, and for the Koreans, the standard of living is probably still somewhat below the level attained in Japan proper.

242. Poverty and Dependency

Natives. Since the native social structure is still largely intact in the Western Carolines, poverty and dependency are virtually non-existent. Persons who might otherwise be indigent are cared for by their family, clan, or community. This does not imply, however, that most natives are not poor, or indeed that many are not completely without funds in terms of a money economy. Thus 558 persons who could not afford to pay for medical services were aided by charity in 1937 (see 244).

Japanese. No cases of indigence are reported for the Japanese population of the Western Carolines, and it is probable that little if any poverty exists. Government employees are protected by pensions and insurance benefits (see 245) against dependency caused by sickness, injuries, old age, and death.

243. Private Relief

Informal Relief. Relief is provided informally among the natives by the prevailing customs of hospitality and by kinship obligations. It is probable also that informal relief based on family and communal ties occurs among the Japanese laborers. The South Seas Government requires any person knowing of a child, cripple, or sick or aged person in need of relief to report the matter to the authorities. Failure to do so constitutes a police offense.

Mutual Aid Societies. An important source of private relief is offered by mutual aid societies, of which ten were registered in the Palau district in 1937. None are reported for the Yap district. These societies are voluntary associations whose members contribute to a common fund. Members who are badly in need of money can draw upon this fund to pay for the funeral of a relative, to help defray doctors' expenses, or to meet other emergencies.

Private Agencies. Except for the mutual aid societies and the semi-official Japanese Red Cross (see 244), there are no known private agencies in the Western Carolines devoted primarily to relief. Some of the credit associations and co-operatives (see 353), however, assume incidental relief functions, and it is possible that some of the Christian missions and churches do likewise.

244. Welfare Agencies

Imperial Bounty Foundation Charity Association. In February, 1927, the Emperor of Japan granted ¥ 1,000 from the privy purse to constitute a fund for charity and relief

in the South Sea Islands. An organization known as the Imperial Bounty Foundation Charity Association (Onshi Zaidan Jikeikai) was established as a juridical person to administer the fund in carrying out charity and relief works. The principal activities of this association consisted at first in the care of patients at the leper asylums on Yap and Palau (see 253) and in the relief of the sick in needy circumstances.

In August, 1932, the annual gifts of ¥ 1,000 from the Emperor began to be supplemented with other government funds. Aid was administered to the needy either by paying the expenses required for the medical treatment of destitute persons or by sending itinerant physicians to various places to give free medical treatment. Although the imperial annuities ceased in 1934, the association continued to carry on its work with aid of subsidies from the South Seas Government. In 1937 it received ¥ 6,000 in subsidies, ¥ 4,000 of which was for charity and ¥ 2,000 for education, for work in the mandated area as a whole. Of these sums, ¥ 915 was spent to care for the 26 leprosy cases in the Yap district, and ¥ 925 was spent on care for the 21 leprosy cases in the Palau district. In addition, 34 impoverished sick persons were treated in Yap at a cost of ¥ 193, and 524 such persons were treated in Palau at a cost of ¥ 588. Relief was given to two persons in Palau, but to no one in the Yap district.

Japanese Red Cross. A South Seas committee of the Japanese Red Cross was established in 1930. The headquarters of this committee were set up at Koror, and a sub-committee was organized on Yap. By 1932 there were 42 life members and 72 regular members in Palau, and 6 life members and 32 ordinary members in Yap.

Subsidies to Colonists. Japanese settlers in the mandated islands receive some assistance from the South Seas Government, especially for sanitary equipment and construction. Such grants totaled ¥ 26,916 in 1937, but the proportion of this sum expended in the Western Carolines is not reported.

245. Social Insurance

Pensions. The South Seas Government maintains a pension system for its employees. Payments are handled through the post offices. In 1937, ten persons received pension payments totaling ¥ 797 at the Yap Post Office, 98 persons were paid ¥ 11,022 at the Palau Post Office, and 28 persons received ¥ 2,694 at the Angaur Post Office.

Death, Sickness, and Accident Insurance. Certain kinds of insurance benefits were provided for day laborers on government enterprises by an ordinance of October 21, 1918, amended in 1926 and 1928, and for salaried employees of the government by an ordinance of June 6, 1928. Coverage is afforded to those sustaining injuries, becoming ill, or dying while on duty. The benefits awarded consist of relief from work, medical treatment, a recompense in consideration of physical incapacity, a terminal benefit payable after three years of medical treatment without recovery, a death benefit for the relief of the family, and a grant for funeral expenses. In 1937 the South Seas Government expended a total of ¥ 4,725 for relief benefits under these ordinances.

Since the Angaur phosphate mines were operated as a government enterprise until 1936, the laborers were covered by the above regulations, and the Nanyo Takushoku Kaisha is reported to have continued this policy after taking over the mines. The coverage, however, is far from complete. A clause in the ordinance provides that no person whose illness or injury is caused by "a serious blunder on his part" is eligible for relief from work or for recompense in consideration of physical incapacity. In the case of the mines, determination of what constitutes a "serious blunder" is left to the judgment of the government medical officer. To those persons who qualify for one of the six types of benefit, mining officials are authorized to make the following payments:

Medical treatment	An amount equal to the fees paid at the government hospital.
Relief from work	For the first 6 months, 60 per cent of the wages lost; for the next 18 months, 40 per cent thereof.
Permanent disability	40 to 700 days' wages.
Terminal benefit	540 to 700 days' wages.
Death	360 to 600 days' wages.
Funeral expenses	¥ 20 to 40 days' wages.

In actual practice, however, a policy of extreme caution has been pursued. From 1930 to 1935 no payments whatever were made for the last three types of benefit. The

total sum paid out by the company in compensation for medical fees and lost wages averaged only ¥ 195 a year. Benefits to Japanese averaged about 25 in number each year and ¥ 3.77 per person; benefits to natives averaged about 80 a year and ¥ 1.14 per person. During recent years the actual morbidity among native laborers at the mines has averaged 31 cases of serious illness and 1,345 cases of less serious illness a year. The first reported compensations for permanent disability caused by accident were paid in 1935, when two Japanese received ¥ 202 each and one native received ¥ 39.

246. Conservation

Fishing Regulations. Fishermen are required to obtain licenses, to refrain from using poison or explosives in fishing, and to observe closed seasons in shell and turtle fishing (see 325).

Soil Conservation and Afforestation. The South Seas Government has concerned itself with soil conservation and rehabilitation in the mandated area. It has sponsored experiments at the Tropical Industries Research Institute at Palau and, by subsidies and education, has attempted to promote the use of fertilizers and the rotation of crops by native agriculturalists (see 311). It has also embarked on a program of afforestation, planting deciduous trees to prevent erosion and to build up the soil.

Rationing. Food rationing was instituted by the Japanese in June, 1940. The products rationed are reported to include sugar, rice, meat, and fish.

25. HEALTH AND SANITATION

251. Diseases and Dietary Deficiencies

General Health. The general health of the natives is reported to be poor, particularly on Yap. Europeans arriving in the islands encounter some difficulty at first in adjusting to the climate, and are said commonly to show increased heart activity, edema of the limbs, and other symptoms. After a short time, however, their systems become adjusted, and they are said thereafter to enjoy general good health.

Skin Diseases. Skin diseases are prevalent among the natives. Pityriasis versicolor, a parasitic disease which produces red and brown spots on the skin, is reported to be common. A survey of Yap Island in 1930 revealed that 88 natives were afflicted with this disease. In the same year seven Yap natives were afflicted with eczema. Erysipelas, a streptococcus infection contracted through lesions in the skin, is reported to be occasionally present. Contagious impetigo, which is one of the chief skin infections in Guam, and various dermatomycoses are reported to be widespread in the Western Carolines. Complicated cases of dermatitis and violent itching, purported to result from bites of the Culicoides midge and the Trombidiidae mite, are common in the Palau district. Other forms of dermatitis, caused by contact with the excretions or body fluids of the Oedemeridae beetle and the Spiroboloidae myriapod, are also prevalent in Palau. Scabies is reported for the Palau district. Boils are especially common and troublesome in the Western Carolines.

Leprosy has been prevalent among the aborigines for many years. In 1931 it was estimated that there were 40 lepers in the Yap district and 21 in the Palau district. In 1937 there were reported to be 27 lepers in the Yap district and 22 in the Palau district. In the same year four natives in the Yap district and two in the Palau district were reported to have died from leprosy. The natives do not consider leprosy to be a contagious disease, and it is only with difficulty that the Japanese have been able to segregate lepers in asylums (see 353).

Ringworm infections are prevalent among the natives, and are reported to have been present when the islands were first discovered. They are somewhat more common in the Yap than in the Palau district, and the natives of Tobi are reported to be completely free from these skin complaints. Japanese and Europeans are rarely infected. A salve of tannin and sulphur has been found moderately effective as a cure. Tinea circinata, a ringworm infection which spreads on the skin in rings with inflamed edges, is general throughout the Caroline Islands. Tinea imbricata, which covers the entire body with large scales in a tile-like pattern, is also prevalent. Trichophytosis, a genus of ringworm which lodges in the hair follicles, is common in Palau and probably Yap. The natives regard skin infections with considerable distaste, and afflicted persons, especially in the Yap district, are avoided.

Respiratory Diseases. The natives are particularly susceptible to diseases of the respiratory system. Infectious colds are seasonally prevalent and tend to predispose the natives to tuberculosis. "Influenza" has been present among the natives for a long time and appears to be fairly common. Tuberculosis is prevalent throughout the mandated islands, and is reported to be particularly widespread among the natives of Yap. In the 1930 survey of Yap it was found that 15.4 per cent of the native population had some form of tuberculosis, and that this disease had been responsible for 102 of the 195 deaths occurring during 1929. Deaths from tuberculosis, however, are reported to have been markedly reduced in recent years, and in 1937 only 19 native deaths in the Yap district were listed as resulting from tuberculosis. In the Palau district twelve Japanese and eleven natives were reported to have died from tuberculosis in 1937.

Infectious jaundice is rare in the Western Carolines.

Bronchitis accounted for the deaths of 18 natives in the Yap district in 1937. In the same year, lung fever and bronchial pneumonia were responsible for the deaths of 14 natives in the Yap district, and of 17 natives and 21 Japanese in the Palau district.

Poliomyelitis was reported for the mandated islands in 1926 and 1927, but the islands in which the cases occurred were not specified. In 1927 it was reported that there were 293 native and 96 Japanese cases of cerebro-spinal meningitis in the mandated islands. In 1926, 107 cases of this disease were reported for the Yap district.

Mumps was apparently introduced in the latter part of the nineteenth century and is still common. Whooping cough appears occasionally in the Western Carolines. Measles was a serious disease among the natives when first introduced, but, although the disease is still common, it is now rarely fatal.

Chicken pox occurs occasionally, but it is not a serious disease at the present

time. An epidemic of smallpox in the Carolines in 1854 is said to have caused more than 2,000 deaths. Vaccination for smallpox, though practiced sporadically for many years, was first instituted on a comprehensive scale in 1922, and is reported to have been an effective deterrent. In 1937 the Japanese vaccinated 128 persons in the Yap district and 594 persons in the Palau district.

Diphtheria occurs in the mandated area, but it has never been specifically recorded for the Western Carolines.

Scarlet fever has been reported for the Carolines.

Venereal Diseases. Syphilis is rare among the natives of the Western Carolines. The 1930 survey of Yap revealed only 18 persons suffering with the disease, and the natives of Palau are reported to be free from syphilis. The Japanese, however, show a higher incidence of the disease. The deaths of three Japanese in the Palau district in 1937 were attributed to syphilis.

Gonorrhea is widespread among the natives. In 1932 the official estimate indicated that one third of the natives of Yap were infected, and it is likely that a similar situation prevails elsewhere in the Western Carolines. The Japanese inhabitants are likewise reported to show a high incidence of gonorrheal infection.

Chancroid is not specifically reported for the Yap or Palau districts. However, from two to five per cent of the patients treated in the hospitals of the entire mandated area during the years from 1924 to 1930 were reported to be infected.

Yaws, which is a modified form of syphilis, has been present from aboriginal times and may account, in part, for the relatively low incidence of syphilis among the natives. The number of cases of yaws treated at government hospitals is reported to be decreasing annually. Salvarsen has been found effective as a cure, and mercury and bismuth have been experimented with as curative agents in special cases. Gangosa, usually considered to be a tertiary manifestation of yaws, is reported to occur frequently in the mandated islands.

Intestinal Diseases. Amoebic dysentery was introduced early in the twentieth century, and occasional outbreaks of the disease have occurred in the Western Carolines since that time. An epidemic in 1929 claimed 42 victims in the Palau district, with 14 deaths, whereas only one person was reported to have dysentery in the Yap district. In 1931 the disease broke out again in the Palau district, afflicting 115 persons, of whom 14 died. In the same year three cases were reported for the Yap district. In 1937, amoebic dysentery caused the deaths of 30 natives in the Yap district and 3 natives in the Palau district. Emetin and Yatren cures are reported to be effective.

Bacillary dysentery is reported for both Yap and Palau. In 1937 six native deaths in the Yap district and seven Japanese deaths in the Palau district were attributed to diarrhea. An acute intestinal inflammation, common among infants, caused 14 deaths on Yap in 1930.

Typhoid and paratyphoid are reported to occur occasionally in the mandated islands. In 1912 and 1913 an outbreak of typhoid was reported for the Western Carolines. No deaths from typhoid or paratyphoid were reported for this area in 1937.

Hookworm was officially reported to infest nearly 50 per cent of the natives in the mandated area in 1932. A variety of hookworm which attacks the small intestines is reported to be particularly prevalent on Yap. Strongyloidiasis, generally found where there are hookworm infestations, is probably common. Many unspecified tapeworms are reported for the mandated islands. According to the reports to the League of Nations, about 90 per cent of the natives in the mandated islands are infected with Ascaris (roundworm). Oxyuriasis is relatively rare. Trichuriasis is said to be very common throughout the mandated islands.

Insect-borne Diseases. Malaria is rare in the Western Carolines, although there is some evidence that sporadic cases have occurred in the past. The Japanese official reports to the League of Nations constantly emphasize that the few cases of malaria which do occur in the mandated islands must be introduced from other areas, since there are no anopheline mosquitoes in Micronesia. The evidence definitely indicates that the establishment of malaria in the Western Carolines will depend primarily upon the successful introduction of Anopheles mosquitoes. Possible sources for the importation of these malaria-bearing mosquitoes are the Bismarck Archipelago, New Guinea, the Moluccas, the Philippines, and Japan.

Typhus has never been reliably established as occurring in the Western Carolines. Occasional references to cases of "typhus" appear in every instance to mean typhoid fever, the confusion resulting from the ambiguity in both the German and the Japanese medical terminology with respect to the two diseases. Although head lice infest the natives of Micronesia, body lice, the vectors of epidemic typhus, are reported to be absent. More-

over, although rats, which serve as reservoirs of endemic typhus, are common throughout the area, available information suggests that the fleas which convey the disease from rats to human beings are rare or absent. However, the possibility exists of the wartime introduction of the vectors of typhus into the Western Carolines, since the disease occurs in Hawaii, the Philippine Islands, China, Japan, and New Guinea, and might be introduced to Micronesia from any of these areas through movements of troops.

Filariasis occurs throughout the mandated area, and is present in the Western Carolines, although its incidence here is probably low. Women are reported to be less frequently afflicted than men. Whether the Micronesian form of the disease is nocturnal or non-periodic is not reported, but it is likely that both occur. The form introduced by the Okinawa laborers from the Ryukyu Islands would be the nocturnal type borne by Culex quinquefasciatus (or fatigans), whereas that introduced from Samoa would be the non-periodic type carried by Aëdes scutellaris pseudoscutellaris, both of which insects are reported to be common in the mandated islands.

Dengue fever is present in the Caroline Islands. In 1927 over a thousand persons in the Palau group were infected, and in 1929 there were more than 200 victims in the Palau and Saipan districts. Aëdes aegypti, the vector of dengue fever is widespread.

Cholera, bubonic plague, relapsing fever, psittacosis, and sleeping sickness are all stated to be absent in the Western Carolines.

Miscellaneous Diseases. The natives are said to suffer occasionally from rheumatic complaints. Nine Japanese were reported to have died from beriberi in the Palau district in 1937. In the same year ten Japanese and five natives in the Western Carolines died from nephritis. Various forms of conjunctivitis are said to be common. Trachoma, which is endemic in Japan, is also said to be prevalent in the mandated islands. A disease known as "Caroline hand," described as effecting a curving and tensing of the fingers, is reported. Guha, a disease apparently similar to bronchial asthma, is peculiar to the Carolines, the Marianas, and the Bonins. Tetanus is said to occur commonly in the mandated islands. Two natives from unspecified localities in the mandated islands were officially reported to be infected with anthrax in 1930. Numerous mental afflictions are reported for the natives of the Western Carolines.

Hospital Admissions. Some indication of the prevalence and distribution of disease is given by the official reports of admissions to the Palau, Angaur, and Yap hospitals. The following table gives the average yearly admissions for the four-year period from 1923 to 1927:

Type of Disease	Palau Hospital		Angaur Hospital		Yap Hospital	
	Natives	Japanese	Natives	Japanese	Natives	Japanese
Infantile diseases	0.3	3	0.3	1	0.3	0.7
Diseases of the blood and metabolic disorders	22.5	15	18.5	4	11.3	1.3
Mental diseases	-	-	-	-	-	-
Diseases of the nervous system	21.3	60	93	28	12.3	12.5
Glandular diseases	0.3	0.5	0.3	-	-	-
Diseases of the circulatory system	3.7	3.3	7	4	0.3	0.3
Diseases of the eye	99	61.3	56	10.5	106	17
Diseases of the ear	31.3	51	28	24	21	7
Diseases of the nose and throat	50	82	410	54	20	10
Diseases of the respiratory system	427	205	201	17	530	59
Diseases of the digestive system	118	459	154	73	185	108
Diseases of the teeth	17	78	17	12	6	22
Diseases of the skin (non-tropical)	253	294	122	67	251	348
Diseases of the locomotor system	59	34	276	5	182	9
Diseases of the urinary and reproductive system (excluding venereal disease)	13	56	10	15	3	18
Injuries	161	160	175	38	120	37
Deformities	-	-	-	-	-	-
Pregnancy and childbirth	0.7	30	3	8	4.5	12
Toxicosis	-	6	-	-	-	-

Type of Disease	Palau Hospital		Angaur Hospital		Yap Hospital	
	Natives	Japanese	Natives	Japanese	Natives	Japanese
Beriberi	20	83	297	33	-	10.3
Cancer	-	-	-	-	-	-
Other malignant growths	-	-	-	-	-	-
Benign growths	0.7	-	4	1	-	-
Hookworm	1.7	2	-	0.5	0.3	-
Roundworm	35	24	30	22	7	2.5
Tapeworm	-	1	-	-	-	-
Lung flukes	0.5	1.3	-	-	-	-
Typhoid	-	-	-	-	-	-
Paratyphoid	-	-	-	-	-	-
Influenza	89	33	6	0.3	-	-
Whooping cough	15	5	-	-	-	-
Tetanus	-	-	-	-	-	-
Infectious cerebro-spinal meningitis (figures are for the epidemic year 1926)	-	-	107	-	-	-
Chicken pox	2	0.3	2.7	-	-	-
Measles	-	0.3	16	0.5	-	-
Erysipelas	0.5	0.3	-	-	-	-
Croupus pneumonia	-	-	-	-	-	-
Leprosy	3	-	-	0.3	-	-
Pulmonary tuberculosis	7.5	3	3	1	10	-
Glandular tuberculosis	4	0.3	0.5	-	2.7	-
Tuberculosis of the skin	-	-	-	-	-	-
Tuberculosis of the digestive system	-	-	-	-	-	-
Tuberculosis of the bones	1.3	-	-	-	-	-
Syphilis	0.5	19	0.5	5	-	-
Gonorrhea	2	31	1	6	2	4
Trachoma	12	28	31	5	0.5	2
Tropical skin diseases	25	-	-	-	-	-
Malaria	-	4	-	-	-	-
Amoebic dysentery	5.5	6.5	63	0.7	-	-
Yaws	237	-	40	0.3	551	-
Gangosa	-	-	-	-	-	-
Dengue fever	-	-	-	-	-	-
Filariasis	-	-	0.5	-	-	-

The number of patients treated at the Yap, Palau, and Angaur hospitals in 1937, classified according to major disease categories, is given in the following table:

Type of Disease	Yap Hospital		Palau Hospital		Angaur Hospital		Total
	Japanese	Natives	Japanese	Natives	Japanese	Natives	
Contagious diseases							2,565
Male	28	301	506	64	45	117	
Female	13	204	1,195	57	19	16	
Physical disorders							1,053
Male	14	15	550	28	23	61	
Female	9	11	307	12	17	6	
Mental diseases							2,722
Male	61	159	1,194	75	44	193	
Female	28	111	755	70	21	11	
Diseases of the circulatory system							276
Male	14	24	101	13	9	27	
Female	12	15	42	13	3	3	
Diseases of the respiratory system							2,399
Male	75	188	777	138	26	243	
Female	74	149	551	131	18	29	
Diseases of the digestive system							3,322
Male	83	218	1,173	110	82	255	
Female	73	222	885	107	74	40	
Diseases of the urinary tract							918
Male	10	9	169	9	9	4	
Female	9	10	598	61	20	10	

Type of Disease	Yap Hospital		Palau Hospital		Angaur Hospital		Total
	Japanese	Natives	Japanese	Natives	Japanese	Natives	
Pregnancy and child-birth							288
Female	13	5	246	22	2	0	
Skin diseases							2,570
Male	117	218	854	118	69	214	
Female	64	134	623	87	43	29	
Diseases of the bones and muscles							343
Male	13	22	125	32	1	51	
Female	5	13	55	22	1	3	
Infantile diseases							287
Male	14	24	87	10	21	11	
Female	8	11	58	20	15	8	
Injuries							2,012
Male	85	152	891	107	81	289	
Female	27	43	277	27	14	19	
Unkrown							3,545
Male	32	152	1,261	115	55	760	
Female	14	121	872	101	38	24	
Tropical diseases							1,006
Male	54	234	105	147	3	39	
Female	25	193	44	151	2	9	
Total	974	2,958	14,301	1,847	756	2,471	23,306

252. Native Medicine

Theory of Disease. Although the details and elaborations vary somewhat from island to island, the basic theory of disease is the same throughout the Western Carolines. Spirits are believed to be the immediate cause of all serious sickness. Spirits do not attack a person willfully; they bring sickness upon him only if he has angered them by breaking a taboo or if they are compelled to attack him by some ill-disposed human being who has control over them. Thus, although the immediate cause of sickness is thought to be the attack of a spirit, the ultimate cause lies in some action of the patient himself, such as a breach of a taboo or an act of aggression. If a native wishes to cause sickness in another person, he may either dispatch some spirit over whom he has control to injure his enemy, or he may hire a sorcerer to do so.

Native Doctors. Except for minor ills, which are usually treated by some member of the family or by a close relative, native medical practice is in the hands of doctors who are at the same time religious specialists. A native doctor is believed to be able to cure those diseases which have been caused by one of the spirits over which he has control. Since most doctors are also potential or actual sorcerers, they are greatly feared. They demand a high fee for their services, charging an initial amount for the treatment and an additional sum if a cure is effected. It is reported that the total fee in one case amounted to more than $100.

Preventive Measures. Natives guard against disease by wearing various types of amulets and by performing various rituals. An especially elaborate preventive measure is reported for Lamotrek, where the native inhabitants used to hang mats at intervals of 100 yards around the island and then beat the air with special anti-spirit fans to ward off the spirits which they believed were coming from other islands to attack them. A more realistic, but drastic, measure was taken by the natives of Yap. When threatened with a severe epidemic of some disease which caused death within a few days, they killed all those who were already suffering from it, burned down all the houses in the village, and drove the remaining villagers away into the mountains.

Diagnosis. If a patient believes that he knows the identity of the spirit who is causing his illness, he calls in the doctor who is reputed to have control over it. If he does not recognize the spirit who is attacking him, he may consult a seer who makes a diagnosis for him and recommends a doctor. When a doctor fails to cure a case, the failure is often attributed to a faulty diagnosis, and a doctor who controls some other spirit is called in.

Therapy. Although native medical treatment consists largely of repeating magical rituals, a certain number of more or less practical remedies are also employed. Abscesses are opened with bone or shell lances and drained with threads of coconut fiber.

Broken bones are set and bound with wooden splints. Lime or lemon juice is used as an astringent to check bleeding. A common treatment for a headache consists of blood-letting, performed by inducing nosebleed. An alternative procedure is to inhale the steam from a boiling brew of herbs. The only major surgical operation reported to be performed by natives is the removal of one or both testicles when they become enlarged as a result of elephantiasis. This operation is said to be common on Yap. Fevers are often treated by bathing the patient in the sea. In addition to the above specific remedies, massage, counter-irritants, and herbal poultices and infusions are frequently used for a variety of purposes.

Present Status of Native Medicine. Despite the attempts of both the Germans and the Japanese to introduce modern medical practice into the Western Carolines, they have been much less successful here than elsewhere in the mandated islands. Native doctors still have a strong influence, particularly in the outlying districts and islands. This persistence of native medical theory and practice is accounted for by two factors: the close integration of medicine and religion in native belief and the recency of missionary influence, which has not had as disintegrating an effect on native religion as has been the case elsewhere. Consequently, a great number of Western Caroline natives still believe that disease is caused by spirits and that it can be cured only by exorcism.

253. Government Medical Services

Government Physicians. During the Spanish period the medical and sanitary care of the islanders was left almost entirely in the hands of missionaries. Although the Spaniards had a military doctor at the disposal of their troops on Yap after 1885, practically nothing was done for the natives. Under the German administration, medical aid was furnished by missionaries and by a government physician and his assistant, who were stationed at Yap. In addition, the doctor of the German phosphate company on Angaur acted in the capacity of government doctor for the Palau Islands.

In February, 1915, the Japanese Government promulgated a series of "Regulations Concerning the Medical Treatment of Sick and Injured Persons in the South Sea Islands." One provision authorized naval surgeons to administer medical treatment to civilians.

Under the Japanese civilian administration, government medical officers have been attached to the hospitals of the South Seas Government at Yap, Palau, and Angaur. They have combined the treatment of disease with public health activities (see 255). From time to time the medical officers are sent on visits to the outlying islands, where, in addition to their routine medical duties, they give educational lectures on infectious and contagious diseases, especially venereal diseases. In remote localities the South Seas Government deposits medical equipment and supplies at police sub-stations, at public schools, and at the houses of local officials, where the natives can come for simple treatments without the payment of fees. By 1931, three such places had been equipped on Yap at a cost of ¥ 156, and nine on Palau at a cost of ¥ 853.

In 1926 a law was enacted providing for a school physician to be employed by each Branch Government (see 262). His duties are to visit the schools in the district once a month, examining the pupils or recommending hospitalization. Each school is equipped with first-aid supplies.

Hospitals. Under the Spanish administration there was a military hospital at Yap. During the early part of the German administration, a temporary hospital was established at Yap. A new hospital for the use of the natives was completed in 1903, with accommodations for 40 patients. It consisted of a men's ward, a women's ward, a bathhouse, a building for menstruating women, and a number of small houses erected by the natives in the garden for use as kitchens. All the buildings were constructed of local materials in the native style of architecture.

In 1906-07 the Germans completed a large military hospital, located on the island of Tarang in Tomil Harbor, Yap. It had a clinic equipped with a pharmacy, an operating room, a consulting room, a lavatory, and a ward for white patients. The main hospital had, in addition, two wards, a bathroom, a storeroom, a cooling house, and two lavatories. Two large cisterns and a solid landing pier rounded out the unit. The new hospital was intended to serve as the principal medical center in German Micronesia. The Germans also built two small hospitals on Yap, one at the village of Gillifitz and the other on Rumung Island. They were supervised by two native hospital assistants and visited every other week by representatives from the main hospital.

In July, 1918, when the organization of the South Sea Islands Defense Corps was altered and the Civil Administration Department was instituted, a Civil Administration Station was set up at each garrison headquarters, and a hospital was established as an

affiliate of each station staffed by civilian personnel, replacing the naval surgeons theretofore in service. In the Western Carolines such hospitals had been established by 1922 on Yap Island, on Koror Island in Palau, and on Angaur Island.

The South Seas Government still maintains regional hospitals on Yap, Palau, and Angaur. In addition, there are military hospitals on Yap and Palau. It is reported that five hostels for tubercular patients were opened on Yap in 1935, and that there are similar hostels elsewhere. Physicians, pharmacists, midwives, and nurses in the service of the hospitals are appointed from among persons who are qualified to practice in Japan.

Each hospital is in the charge of a head surgeon. The head of the Palau Hospital at Koror has supervisory authority over the entire hospital organization of the mandated areas and is directly responsible to the Governor. This position was filled in 1941 by Tamotsu Fujii (Sonin), who had been in charge of the Ponape Hospital in 1939.

The Palau Hospital has accommodations for twelve patients. The head surgeon was assisted, in 1941, by three physicians of Sonin rank, Muneo Samejima, Ichinari Sonoda, and Shosuki Iida. In 1939 the staff also included two doctors, Hiteo Uyeda and Jinko Takeuchi, a clerk, Sueyoshi Nakahara, and a pharmacist, Fumio Nakamura, who was also a member of the Police Affairs Section of the Department of Domestic Affairs. All these men were of Hannin rank. In 1937, in addition to physicians and civil servants of Sonin and Hannin rank, the Palau Hospital employed three assistant employees and seven midwives and nurses.

The Yap Hospital is situated about a mile north of the town of Yap. Its head in 1941 was Soei Kuwahara (Sonin), who succeeded Noboru Okaya (Sonin) in that year. The officials of Hannin rank on the staff in 1939 were Masanori Tamanaka, a doctor, Shigeo Nakamura, a part-time doctor, Sinji Nakazawa, a pharmacist, and Setsuichi Okawa, a part-time clerk. In addition, there were in 1937 three assistant employees and three midwives and nurses.

The Angaur Hospital was headed in 1941 by Kakyudo Nishikawa (Sonin), who replaced Ichinari Sonoda (Sonin) in this post. In 1939, Nijuo Irie (Hannin) served as both pharmacist and clerk. In 1937 the staff also included one doctor of Hannin rank, two assistant employees, and two midwives and nurses.

The hospitals treat a considerable number of patients, as indicated by the official reports of admissions (see 251). Since 1921 they have also conducted a certain amount of educational work, giving natives instruction in sanitation and training native nurses. The hospitals also keep careful morbidity records, but for the most part these have not found their way into the official reports. The Japanese have also conducted systematic investigations into the causes of death, particularly in the Yap district.

Charges for hospital care are lower for natives than for others. Until 1922 the natives received medical treatment free, but in that year rates for natives were fixed at one fourth of those prevailing for Japanese. Certain poor natives were granted reduced rates, or were even exempted from payment (for medical relief to destitute patients see 244). In 1927, hospital rates were graduated into three standard classes, differing according to administrative districts. The Yap and Truk districts were placed in Class C, which had the lowest rate. The Palau and Ponape districts were placed in Class B, with charges 50 per cent higher than those in the Class C districts. In Class A, which included the Saipan and Jaluit districts, the rates were double those of Class C. In 1937 the charges to natives were raised, the Japanese Government justifying the increase by the allegedly improved standard of living. The revenue received by the Yap, Palau, and Angaur hospitals in 1930 and 1931 is given in the following table:

	Yap Hospital		Palau Hospital		Angaur Hospital	
Revenue	1930	1931	1930	1931	1930	1931
Natives	¥ 2,036	¥ 1,168	¥ 2,085	¥ 2,296	¥ 1,610	¥ 1,516
Non-natives	1,155	917	10,422	17,072	3,260	2,424
Total	3,192	2,085	12,507	19,368	4,870	3,940

In 1937, the total revenue taken in by the Yap Hospital was ¥ 3,664; the Palau Hospital received ¥ 70,513, and the Angaur Hospital ¥ 4,178.

The South Seas Government established a leper asylum in Palau in 1930, and the admission of patients commenced in January, 1931. Another asylum was erected on Yap Island in 1931. Both asylums have consulting rooms and a separate house for each patient. A leper is permitted to live with his nurse, usually one of his family, and with other members of the family if they are unable to live apart from him. Besides free medical treatment, the lepers receive special donations from the Imperial Bounty Foundation Charity Association (see 244).

Native Medical Practitioners. In July, 1902, the German administration on Yap instituted an arrangement whereby each of the eight chiefs of the island, in succession, was to send to the hospital an intelligent youth who would serve there for four weeks, after which he would return to his home equipped with a thermometer, cotton, bandages, salicylic powder, and a bottle of creolin. It was intended in this way to set up eight medical stations throughout the island, and eventually elsewhere, for the treatment of accidents and minor illnesses. The plan called for the holding of regular meetings every two weeks, at which the native assistants would make reports and receive further instruction. The first practical trial of this arrangement was with four natives from Woleai. In 1903, two native hospital assistants, Gisiebu and Fanafall, were supervising the two small hospitals at Gillifitz and Rumung Island in Yap.

The Japanese have not pursued this policy very vigorously, for according to an official report in 1937 there were no natives serving as assistant doctors in either the Yap or the Palau district. At some government hospitals, however, native men and women are said to have been given instruction in elementary medicine, pharmacy, and nursing for the purpose of training them as medical practitioners, and several young native men are reported to have been trained at the Yap Hospital and to be practicing medicine in their home islands.

It was reported further that each year every hospital selects ten girls from the graduating class of the local public school, drills them for one year, and then sends them back to their native villages. These girls are not employed as district nurses, and are unpaid. However, after they marry and settle down they are frequently consulted by their neighbors. The official statistics reported ten female medical workers in the Yap district in 1937.

254. Private Medical Practice

Private Physicians. The phosphate mining station at Angaur employs a medical officer who is charged with the responsibility of looking after the health conditions of the labor force. The phosphate company does not maintain a hospital but uses the government hospital, which is near the mines. Native labor recruits are given a medical examination by the staff of the government hospital in the district where the recruiting takes place, and are subjected to frequent health inspections during the time they are working at the mines.

According to the official statistics for 1937, there was one private physician in the Palau district and none in the Yap district. In addition, seven midwives, two masseurs, three acupuncture practitioners, one herbalist, and 33 dealers in medical drugs were registered in the Palau district, and six dealers in medical drugs were reported for the Yap district.

Private Dentists. The official statistics for 1937 reported five private dentists registered in the Palau district and none in the Yap district.

255. Control of Communicable Diseases

Quarantines. Aboriginal custom prescribes certain quarantine measures which are effective in minimizing the spread of infection. Childbirth has always taken place in a special hut, where the mother and child are isolated with native midwives, and it is noteworthy that childbed fever is unknown. Ill persons are also isolated in canoe-houses, according to native custom, thus reducing the chances of contagion.

The Japanese administration imposes a strict quarantine on all incoming vessels. Its enforcement is vested in an assistant expert, who is a physician, and police officers are sent to inspect all arriving vessels. The effectiveness of the quarantine is attested by the absence of cholera, plague, and yellow fever.

Public Health Officers. There are no special public health officers in the Western Carolines. Public health affairs are supervised by the government physicians attached to the district hospitals, and are enforced by the police. Public health duties include the enforcement of ship quarantines, the medical examination of prostitutes, the giving of popular medical lectures, the supervision of food and water, the enforcement of sanitary regulations, and the control of epidemics.

Prevention of Epidemics. On February 6, 1915, during the period of military occupation, the Japanese Government promulgated a series of regulations for the prevention of epidemics. Although phrased in terms of the existing military administration, these

regulations were repeated exactly in the annual reports to the League of Nations, and were thus presumably in force, with necessary adjustments to the changed organization of the civilian government, throughout the mandate period. They are probably pertinent today, either because they are still in force or because, with military government restored, they have served as the model for similar new regulations.

According to the procedure prescribed, each physician was required to report each case of an infectious endemic disease which he attended to the local medical officer, who in turn reported the case to the Chief Medical Officer (presumably today the head surgeon of the district hospital). The latter informed the competent military administration office, which notified the naval commander, who might issue special orders concerning the methods of prevention to be adopted. The medical officer attached to the forces in the affected locality was charged with the preparation of daily bulletins concerning the patient and the spread of the disease. If the epidemic became serious, the head of the competent military administration office was instructed to organize a committee, one member of which was to be the local medical officer, to undertake the necessary preventive measures. Among the measures which such a committee was empowered to take, when deemed necessary to prevent the spread of an epidemic, were the following:

Ordering medical or post mortem examinations.

Prohibiting communication with all or part of the village affected.

Restricting or prohibiting the assembly of people for festivals, memorial services, or the like.

Destroying, or preventing the removal of, articles likely to carry germs.

Destroying, or prohibiting the sale or transfer of, foodstuffs likely to become the medium of the spread of germs.

Instituting precautionary measures in markets and other places frequented by large numbers of people.

Issuing orders for the strict enforcement of cleansing and disinfection, or for the construction, alteration, or abandonment of wells, waterworks, sewers, and lavatories.

Restricting or suspending fishing, swimming, or the use of water within delimited areas for a period.

Instituting measures for the destruction of rats.

Organizing popular lectures on sanitation.

Destroying infected houses or other buildings by fire, on the order of the chief of the competent military administration office and with the approval of the naval commander.

Removing patients to isolation wards.

Ordering the disinfection of patients or their dead bodies before their removal (unless disinfected and special permission were secured, the corpses of victims of epidemics had to be cremated).

Ordering the disinfection of things contaminated by germs before they could be used, removed, or abandoned.

Many of the regulations concerning the disposal of sewage and waste (see 256) and the supervision of food and water (see 257) likewise have as their primary object the prevention of the spread of disease, as does the medical examination of prostitutes (see 153).

256. Disposal of Sewage and Waste

Sewage. The shore and the bush are used as latrines by the natives of the Western Carolines. In a few localities in the interior of Yap Island, the natives go to watercourses where the next rainfall removes the excreta. The natives are modest and avoid being observed while relieving themselves, especially by members of the opposite sex.

The policy of the South Seas Government has been to encourage the natives to install and to use pit latrines. By 1931 three such latrines had been established in the Palau district and one in the Yap district. In many instances, apparently, the natives have followed the example set by the Japanese and have built private latrines. Lavatories are attached to most of the public schools. There are probably a few septic tanks and flush toilets in the larger towns.

Japanese gardeners use night soil as fertilizer.

Garbage. In general the natives of the Western Carolines are not particular about the disposal of food refuse. To combat this tendency, which they consider most unsanitary, the Japanese have made it a police offense arbitrarily to abandon or to fail to remove garbage, foul matter, or rubbish, or to obstruct the free passage of streams, gutters, and drains.

The Japanese pay considerable attention to housecleaning; the natives are constantly encouraged to keep their houses and grounds free of litter. The cleaning of buildings and grounds is a regular feature of "Physical Education Day" (see 263), held annually on the third of November under government auspices. To obtain the co-operation of the natives in improving sanitary conditions, the Japanese reward with special badges those who, whether in government employ or not, render distinguished service in improving the conditions of life.

Carrion. Abandoning, or failing to remove the body of a dead bird or animal has been made a police offense by the Japanese administration. To abandon a corpse without notifying the police is also a crime.

Public Baths. The Japanese have attempted to improve sanitary conditions in the public baths and washing places. It was formerly the custom in Palau for the natives to use common bathing pools, where infectious germs might be transmitted. The water was changed only when a heavy rain caused the surface water to overflow. Up to 1931 five public baths in Palau had been improved with the aid of government subsidies, and in 1932 ¥ 190 was set aside for this purpose.

257. Regulation of Food and Water

Contaminated Foods. In addition to special regulations regarding the sale of meat, the Japanese have instituted two general laws respecting contaminated foods. One makes it a police offense to sell or make a profit from unripe fruit, decomposed meat, or any other injurious food or drink. The second forbids the display without covering at a store of any food or drink which is consumed without being baked, boiled, washed, or peeled. Inspections of foods and beverages undertaken during the year 1937 yielded the following results:

	Yap District		Palau District	
	Number of Tests Made	Number Found Unsatisfactory	Number of Tests Made	Number Found Unsatisfactory
Liquor	2,251	-	5,018	57
Fruits and vegetables	205	2	674	16
Canned food	2,609	7	6,578	102
Beverages	910	4	7,189	51
Pastries	90	1	615	4
Others	289	3	1,139	12

Regulation of the Sale of Meat. In 1934, the South Seas Government instituted a special ordinance governing the sale of meat. It provides that all traders in meat must acquire a certificate of health from a physician and must obtain permission to operate from the Branch Governor. If a shop is maintained, the place where meat is displayed must be so constructed that dust and flies are excluded. A suitable refrigerator must be kept, and there must be a covered vessel into which all refuse matter is thrown. All meat must bear a seal of inspection. While at work, the butcher is required to wear a clean outer garment, and the entire shop must be kept clean. Persons suffering from tuberculosis, leprosy, syphilis, or any other infectious disease are forbidden to handle meat.

Japanese regulations also prescribe that animals may be slaughtered only at government abattoirs or by persons appointed as government butchers. For the regulation of slaughter houses see 312.

Regulation of the Water Supply. The unsanitary nature of many of the sources from which the natives obtain their drinking water (see 121) has created a difficult public health problem for the Japanese. The defiling of drinking water or of the vicinity of places where it is obtained has been made a police offense, and all sources of drinking water are supposed to be tested periodically by government agents, although in actual fact such inspections appear to be rare or perfunctory. The natives are encouraged to improve their water supply, and official publications assert that subsidies are

offered to aid in the construction of wells and tanks and in the installation of corrugated iron or other suitable roofing materials for surfaces from which rainwater is collected for drinking.

258. Regulation of Drugs and Alcohol

Liquor Control. The natives of the Yap district, though not of the Palau district, are fond of hard liquors, particularly gin. The excessive indulgence in spirits led the last Spanish governor to proclaim a severe prohibition on the consumption of alcohol. This policy was continued by the German administration, which prohibited the taking of any drink with an alcohol content of more than three per cent. The Japanese, in conformity with the stipulations of the mandate from the League of Nations, have prohibited the supply of intoxicating liquors to natives and have forbidden the natives to drink liquor except for medical purposes and on religious and ceremonial occasions, for which permission must be obtained from the government. Any native who manufactures, sells, buys, has in his possession, or drinks alcoholic liquor is subject to detention or a fine, and any person selling or giving liquor to a native is subject to a fine.

During the earlier years of the mandate these regulations appear to have been reasonably well enforced. As time went on, however, an increasing amount of bootlegging was carried on by peddlers traveling on the interisland steamers, and the officials grew more and more lax in enforcement. In some instances, indeed, it is charged that the Japanese have plied chiefs with liquor as a means of making them more amenable to control.

The Japanese inhabitants of the islands consume considerable quantities of liquor (see 152), and their drinking is not subject to regulation. The Okinawa laborers, in particular, are heavy drinkers. It is, however, a police offense for anyone to wander around the streets in an intoxicated state.

In 1937, 35 cases of violations of the liquor laws, involving 50 Japanese and 180 natives, were handled by summary decision in the Yap district. In eleven cases handled in the Palau District Court, seven Japanese, twelve natives, and one foreigner were found guilty.

Toddy Control. The preparation and use of sour or fermented coconut toddy are strictly forbidden, particularly because of its allegedly bad effect on the natives of the Yap district. Since sour toddy is easily and quickly made from sweet toddy, the tapping of the coconut flower-stem to secure the juice for sweet toddy is forbidden, despite complaints that babies are thus deprived of fresh milk. The law is, of course, circumvented. Certain trusted natives in the Yap district are authorized to draw coconut milk and turn it over to the hospital, where it is supplied to sick babies.

Narcotic Control. The natives are not addicted to the use of any dangerous drugs, such as morphine or cocaine. The extent of drug addiction among the Japanese population is not reported. The South Seas Government, however, has prohibited the manufacture, importation, and possession of narcotics, except in the case of persons who require them for professional purposes and who have obtained special permission. In 1937 it was officially reported that 12 grams of morphine, 14 grams of methyl morphine, and 20 grams of opium were imported into the Palau district from Japan by private doctors. Items imported by government hospitals were not included in the statistics. No drugs were imported by private doctors into the Yap district.

26. EDUCATION AND PROPAGANDA

261. Family Training

Informal Education. Aboriginally, education was carried on almost entirely by the family. The native culture was taught to the children by their parents and older brothers and sisters. Children were well treated and seldom severely punished, although absence of filial respect in particular was regarded with extreme disfavor and would lead to scolding or even beating. Boys were and are allowed considerably more freedom than girls, and from the age of four or five spend much of their time roaming about the village with their play group. They are given training in masculine pursuits by the older youths and men of the community, and any adult has the right to play the role of parent in training or chastising them. Girls, instead of forming play groups, are usually to be found close to their mothers, either in the dwellings or in the fields.

Special Instruction. Cultural values and religious tenets are transmitted in part by the myths and folktales which are told at the family circle in the evening. Boys who were to become specialists in navigation and other complex arts used to serve an informal apprenticeship under skilled adults; such native arts, however, are now dying out. One native institution reported from Palau is a special school to train girls in the art of love; students are said to enter at the age of six.

262. Educational System

Government Schools. The South Seas Government maintains in all districts two distinct sets of primary schools, those for Japanese, which are called elementary schools, and those for natives, which are called public schools. It also supports a few secondary schools, also divided between Japanese and natives. All these schools are under the general supervision of the Governor of the Nanyo Cho, who is advised in educational matters by the Planning Section of the Department of Domestic Affairs. Immediate supervision is exercised by each Branch Governor.

Immediately upon taking over control of the islands, the Japanese set up a government controlled educational program to supersede the mission schools, which had previously had almost a monopoly on education. The program was steadily expanded, and by 1937 there were six elementary and eight public schools in the Western Carolines with 919 Japanese and 879 native pupils, taught by 42 Japanese and eight native teachers. In addition, there was one high school for Japanese girls and one vocational school for native boys.

Appropriations for education amount to approximately ten per cent of the ordinary expenditures of the South Seas Government. The distribution as between Japanese and native schools does not appear inequitable in relation to the distribution of population. Expenditures are reported only for the mandated area as a whole, and often partially. The latest available figures are presented in the following table:

	1936 Expenditures		1937 Expenditures
	Natives	Total	Total
Salaries	¥ 125,599	¥ 316,468	(unavailable)
Office expenses	40,153	80,822	(unavailable)
Educational expenses	44,491	79,837	¥ 84,099
Construction and repair	2,949	27,841	147,625
Subsidies			
Girls' school (Japanese)	-	-	3,000
Kindergarten (Japanese)	-	3,400	3,400
Educational societies	-	600	600

One teacher in each government school is appointed to act as principal. In accordance with detailed government regulations, he organizes and administers the school program, submitting current reports on management, curriculum, and attendance to the Branch Governor, and through him he makes annual reports to the Governor and to Japan. Principals are forbidden to administer corporal punishment but may suspend or otherwise punish the pupils. After obtaining the consent of the Branch Governor, they may expel either Japanese or native children who are judged incorrigible or are long absent and native children who are conspicuously inapt. In order to prevent overstrain upon the pupils during the hot season, principals may, after obtaining the consent of the Branch Governor, decrease the daily number of hours of instruction for a period not exceeding 50 days. In cases of emergency, such as an epidemic or a natural catastrophe, principals may close their schools temporarily on their own authority.

School physicians are appointed by the Governor from among the physicians in the service of the government hospitals. At least once a month they must visit each school under their jurisdiction to inspect conditions of health and sanitation. In addition, they must make an annual physical examination of each pupil and maintain a detailed record of each examination, which is reported by the principal to the pupil or to his guardian. Pupils requiring medical care, particularly native children infected with roundworm or hookworm, are given attention at the school or else are referred to the district hospital for free treatment. School physicians give advice on all matters pertaining to health, take measures to control any epidemics which may break out in a school or its neighborhood, and, on the request of school principals, give lectures on hygiene to pupils or their guardians. All schools, moreover, are required to maintain first-aid equipment.

Since 1937, school inspectors have been appointed to examine the educational activities of the Branch Governments and of the government schools and kindergartens. They make oral and written reports directly to the Governor. Routine matters for inspection are: the standards of teaching and learning, attendance, expenses, equipment, sanitation, physical training, guidance for graduates, measures for propagating the Japanese language, and protection of the imperial portrait and the certified copy of the imperial rescript. The inspectors are empowered to consult all records, to question personnel, and to examine students. They call attention to contraventions of regulations and effect changes in teaching schedules as they deem necessary.

Each government school consists of at least one classroom building, a teachers' residence, and a play field. Buildings are of one story, constructed of wood, concrete, or stone, and are provided with water tanks and latrines. The government makes annual provision for new buildings and repairs, and school property is reported to be in good condition.

Schools are in session every day except Sundays and national holidays. There are three school terms each year, running respectively from April 1 to August 31, from September 1 to December 31, and from January 1 to March 31, with vacation periods from August 21 to August 31, from December 25 to January 7, and from March 25 to March 31.

Elementary Schools for Japanese. All elementary schools for Japanese children offer a basic six-year lower elementary course, and some of them offer a further two-year higher elementary course. Students are admitted at the age of six; they pay no fees, but they must provide their own school supplies. Each school is staffed by one or more Japanese teachers of Hannin rank and generally also one assistant teacher; all must be qualified to teach elementary school in Japan proper.

In general the school regulations, teaching methods, and texts are the same as for elementary schools in Japan. The Japanese language is the main subject of study, accounting for from nine to twelve of the 21 to 30 scheduled hours of instruction per week in lower elementary schools, and for six of the 29 to 30 hours in the higher. Other subjects taught in the lower elementary schools are: arithmetic, 4-6 hours; ethics, 2 hours; singing and physical exercises, 4-5 hours; drawing and handicrafts, 1-2 hours each; natural science (the last three years only), 2 hours; Japanese history and geography of Japan, Manchuria, and the world (the last two years only), 2 hours each; and sewing (for girls only), 2-3 hours the last three years. Subjects other than language taught in the higher elementary schools are: agriculture, industry, and commerce, 5 hours for boys, 2 hours for girls; arithmetic, 4 hours; housekeeping and sewing (for girls only), 4 hours; physical exercises, 3 hours; Japanese history, foreign geography, and natural science, 2 hours each; and drawing, handicrafts, and singing, 1 hour each.

In 1939 there were seven elementary schools in the Western Carolines, one in the Yap district and six in the Palau district. These schools, with the location, grade, and staff (male and of Hannin rank unless otherwise stated) of each were as follows:

Yap Elementary School
Hatasu Kuki, principal and teacher.

Palau Advanced Elementary School
Tokiji Yamamoto, principal, treated as of Sonin rank.
Hajimu Fukutoku, teacher.
Tadahiko Furugawa, teacher.
Yoshio Hiramatsu, teacher.
Osamu Ishisaka, teacher.
Sueko Marukawa, teacher.
Kiyoshi Nakahashi, teacher.
Muneichi Nakayama, teacher.
Chojiro Oshiro, teacher.
Kisaku Takeuchi, teacher.

Hitenobu Tanaka, teacher.
Masaru Yoshimura, teacher.
Nakazo Yokoo, teacher.
Hiteko Nakamatsu, teacher, female.
Hide Omishi, teacher, female.

Angaur Elementary School
Kyogo Ushiku, principal.
Seiroku Nagai, part-time teacher.

Asahi Elementary School (Babelthuap Island)
Masaru Tanaka, principal.
Ryojiro Asami, teacher.

Seisui Elementary School (Babelthuap Island)
Juntaro Oigawa, principal.
Tsuyoshi Goto, teacher.

Suiho Elementary School (Babelthuap Island)
Yosankichi Sakaguchi, principal.
Naohisa Ukai, teacher.

Peleliu Elementary School
Ko Yoshioka, principal.
Masaru Yoshimura, teacher.

The official statistics on schools, issued in 1937, list five elementary schools in the Western Carolines, in addition to the Palau Advanced Elementary School, namely, those of Yap, Angaur, Airai, Garudokku, and Garumisukan. A number of the names do not agree with those in the foregoing list for 1939. In all probability, however, they do not represent different schools but merely alternative or earlier names for the same institutions. Although the sources do not make it possible to establish conclusive identity, it is probable that Garumisukan is equivalent to Seisui, and possible that Garudokku is equivalent to Asahi. The statistics, showing the number of teachers and pupils in 1937 and the number of graduates in that year, are as follows:

School	Teachers		Pupils			Graduates		
	Hannin	Others	Boys	Girls	Total	Boys	Girls	Total
Yap	1	2	17	13	30	2	1	3
Palau Advanced	9	1	300	315	615	50	44	94
Angaur	2	1	18	22	40	2	-	2
Airai	1	-	22	18	40	4	-	4
Garudokku	1	1	43	39	82	9	7	16
Garumisukan	2	-	58	54	112	6	10	16
Total	16	5	458	461	919	73	62	135

Of the pupils in the Palau school, 71 were registered in the higher elementary division, 35 being graduated during the year.

Secondary Schools for Japanese. There are no secondary schools for Japanese boys in the Western Carolines, but such a school was established on Saipan in April, 1933, for boys from the entire mandated area. This school provides three years of vocational training of middle-school grade. A high school for Japanese girls has been established in Palau, but no information is available in regard to courses and attendance. As of 1939, the only reported member of the staff was the principal, Masakichi Takahashi, of Sonin rank.

Kindergartens. Three private kindergartens have been established in the Western Carolines by Japanese residents since 1928, two on Palau and one on Yap. These schools are subject to the same regulations as kindergartens in Japan, and some at least participate in the annual subsidy of ¥ 3,400 granted by the South Seas Government in support of kindergartens. One of the two kindergartens on Palau is managed by the mission station of the East Honganji Temple of the Shinshu Buddhist sect, and admits native as well as Japanese children. The teaching hours are 18 per week (three per day). The subjects taught include stories, singing, games, handicrafts, and observation. The standard fee is ¥ 2 per child per month. In 1937 there were seven teachers and 117 pupils in the two kindergartens on Palau, and one teacher and 19 pupils in the kindergarten on Yap.

Public Schools for Natives. All public schools for native children offer a basic course of three years, and certain of them offer a further supplementary course of two years. Attendance is for the most part voluntary, although children of school age (eight to 14 for natives) are "expected" to attend. In localities which have schools, applicants frequently exceed the capacity of the schools, but in the remoter districts, where

pupils must travel considerable distances to reach school centers, some compulsion is necessary. In such regions the village headmen are assigned student quotas to fill, and have in the past encountered considerable opposition. Of late, however, even the natives of the most isolated islets have come to realize the desirability of education, and whole families sometimes move into the neighborhood of a school when their children come of school age.

Public school pupils pay no fees. They are provided free of charge with texts and various school supplies. At the discretion of the principal, needy students are even granted an allowance of ¥ 5 per year for clothing and ¥ 1.50 to ¥ 2 per year for such items as notebooks, writing brushes, paper, and ink. Boardinghouses are maintained in connection with the schools at Yap and Koror. In these dormitories, under the supervision of a resident inspector appointed from among the teachers by the Branch Governor, students coming from a distance are provided with free lodging and with food, for which the government allows them seven sen a meal.

The staff of a public school consists of one or more Japanese teachers of Hannin rank, one of whom serves as principal, and usually, in addition, a native assistant. Japanese teachers must in general possess the qualifications for teaching in elementary schools in Japan, and they are frequently transferred from native to Japanese schools and vice versa. Native assistants are appointed by the Branch Governor; they must be over 16 years of age, graduates of a public school or the equivalent, sound of body, "correct" in behavior, and competent in Japanese. There is no special training program for native assistants, but they may be required to appear before an examining committee, and their backgrounds are carefully investigated. Their duties consist largely of interpreting for Japanese teachers, who exercise close supervision over all their activities.

The Japanese language is the main subject of study in the public schools as in the elementary schools; to it are devoted 12 of the scheduled 23-29 instructional hours per week in the regular course, and 10 of the 28-30 hours in the supplementary course. Pupils are drilled in easy conversation and are taught kana (both hiragana and katakana) as well as the most commonly used Chinese characters. The remaining instructional hours in the basic course are assigned as follows: arithmetic (including simple calculations), 5 hours; singing and physical exercises, 3 hours; ethics, drawing, and craftsmanship, 1 hour each; and natural science (including botany, zoology, mineralogy, natural phenomena, ordinary chemical and physical phenomena, and hygiene of daily life), agriculture, and housekeeping (for girls only), 1 hour each during the second year and 2 hours during the third. The subjects other than language offered in the supplementary course are as follows: agriculture and arithmetic (including calculations in fractions and percentages and use of abacus), 4 hours each; natural science, craftsmanship, physical drill, and housekeeping (for girls only), 2 hours each; and ethics, geography of the islands and Japan, drawing, singing, 1 hour each. The announced policy of the South Seas Government in the teaching of all subjects is to adapt the material to local conditions and to make the courses concrete and practical. To promote these aims and to achieve a degree of consistency among the various schools, the Government has drawn up a set of general regulations concerning the subject matter of each course. As yet, however, there is only one set of standard texts, a series of Japanese language readers especially compiled for the South Seas. For courses other than Japanese, texts are not generally supplied.

In 1939 there were three public schools in the Yap district and four in the Palau district. These schools with their staffs (male and of Hannin rank unless otherwise stated) are listed below:

Yap Public School
Atsumu Fuji, principal.
Yoshio Miyajima, teacher.
Staoshi Nomura, teacher.

Maki Public School (Yap Island)
Toyoshi Fujimori, principal.
Toyoshi Nishimura, teacher.
Katsuo Shimoto, teacher.

Nifu Public School (Yap Island)
Hisamitsu Yamata, principal.

Koror Public School (with Apprentice Woodworkers School)
Tatsumi Nomoto, principal, treated as of Sonin rank.
Sennosuke Kamada, teacher.
Toshiro Nakamaru, teacher.
Kentaro Hirai, teacher.
Yoshimizu Yoshino, teacher.
Yasutaro Kokusu, teacher.

Marukyoku Public School (Babelthuap Island)
Kosei Mori, principal.
Shizuo Kohara, teacher.

Peleliu Public School
Tsuremasa Cho, principal, treated as of Sonin rank.
Sennosuke Kamada, part-time teacher.

Angaur Public School
Kaku Kuki, principal.
Seiroku Nagai, teacher.

The official statistics on schools, issued in 1937, name one public school in the Palau district not mentioned in the foregoing list for 1939, i.e., the Gararudo Public School. The reason for the omission in the later list is not known. The following table shows the number of teachers and pupils in 1937 and the number of graduates in that year:

School	Teachers		Pupils			Graduates		
	Japanese	Native	Boys	Girls	Total	Boys	Girls	Total
Yap	4	1	103	79	182	48	26	74
Maki	3	1	75	24	99	27	10	37
Nifu	1	1	22	18	40	5	5	10
Koror	6	1	154	119	273	66	50	116
Gararudo	2	1	52	51	103	12	15	27
Marukyoku	2	1	41	41	82	11	13	24
Peleliu	2	1	35	37	72	5	15	20
Angaur	1	1	17	11	28	5	2	7
Total	21	8	499	380	879	179	136	315

The public schools at Koror and Yap each offered a supplementary course in 1937, the former with 153 pupils, of whom 74 graduated in that year, and the latter with 106 pupils, of whom 46 graduated. These two schools are also the only ones in the district with boardinghouses for students; in 1937 there were 112 boarders at the former and 33 at the latter.

The official statistics on school attendance give some conception of the extent to which the Japanese educational system has reached the natives. They should be read, however, with one qualification. In enumerating the children actually attending school during a particular year, the statistics include both the new pupils entering school during the year and the old students graduating during the year, introducing a duplication amounting to approximately the size of the graduating classes. Daily attendance averages are reported never to have fallen below 90 per cent.

The statistics for 1937 are shown in the following table:

District	Number of Children of School Age (8-14)			Number Attending School or Graduating			Percentage Attending School or Graduating		
	Boys	Girls	Total	Boys	Girls	Total	Boys	Girls	Total
Yap	411	421	832	230	191	421	56	45	51
Palau	414	429	843	400	415	815	97	97	97

Vocational Schools. An Apprentice Woodworkers Training School for native boys was established in connection with the Koror public school in May, 1926. The principal of the latter school serves as the head of the training school. The staff of the training school in 1937 included two full-time teachers and two part-time teachers shared with the public school. In the same year, 32 pupils were registered, including three graduate research students. The number of graduates through 1937 totaled 99.

Two or three boys are admitted to the school annually from each of the six administrative districts of the mandated area. They are selected from among boys under 16 years of age who have completed the supplementary course in a public school, or its equivalent, with outstanding record, and who are free to pursue their studies further. Students pay no fees and are provided with all necessary materials and supplies. They are given lodging in the school boardinghouse and, with the exception of graduate students, are provided with an allowance of not more than 30 sen per day for food and ¥ 15 a year for clothing. The school terms and general regulations are the same as for the ordinary public schools. The course covers two years, the curriculum allowing for 18 hours per week of practical work, five hours of Japanese, five hours of architecture (study of construction, materials, tools, and workmanship), four hours of arithmetic, and one hour each of ethics and gymnastics. For Japanese and arithmetic, the students use texts which are standard in the Japanese Elementary schools.

From time to time short-term classes in agriculture and handicrafts are instituted by the Branch Governments for leading villagers and graduates of the public-school supplementary courses. These courses vary in length from three months to a year, and the number of students registered ranges from 10 to 40. The courses in agriculture are given by the Tropical Industries Research Institute at its main station at Koror and its experimental farms on Yap. Students receive instruction in the cultivation of ordinary crops, horticultural plants, and plants of special use, and also in forestry and stock-farming. The courses in handicrafts emphasize knitting and the weaving of braid for making hats. Students are admitted free of charge, are given allowances for food, and are lent the necessary equipment.

Girls who have finished the supplementary course in the public schools of Yap generally enter either the Yap hospital to be trained as nurses or the knitting institutes on the island for instruction in knitting and the manufacture of baskets. Both this and the short-term training described above are semi-compulsory.

Denominational Schools. In the Eastern Caroline and Marshall Islands, American and other foreign missionaries have established denominational schools of two types: church schools, operated in conjunction with native churches and offering religious instruction, and mission schools, operated by mission stations for the training of native evangelists. Such schools have always been fewer in the Western Carolines, in consequence of the more recent and less intense missionary penetration, and after the Japanese occupation they encountered serious competition from the superior public schools. In 1937, there was only one church school still operating in the area, and no mission schools. The church school, Roman Catholic in denomination, was located on Palau and had twelve native pupils, five boys and seven girls. Its two teachers were Spaniards. The activities of this school were confined to giving religious instruction to public-school pupils of Catholic families several times a week after school hours.

Educational Associations. In 1924, on the occasion of the marriage of the Emperor of Japan, an organization known as the Imperial Bounty Foundation for the Encouragement of Study (Onshi Zaidan Shogaku Kai) was established for the "encouragement of study among school children in the islands." After its initial imperial grant of ¥ 2,000, it received a similar amount each year from the South Seas Government, in addition to contributions from miscellaneous sources. By 1937 it had accumulated a fund of ¥ 25,300, of which ¥ 21,500 was invested in five per cent government bonds. The activities of the association are the following:

Commendation of exemplary pupils. Prizes are awarded at the end of each school year to native and Japanese pupils with outstanding scholastic records, and Japanese pupils with exceptionally good health records are publicly commended.

Contributions to school libraries. Annual grants-in-aid are made toward the maintenance of libraries in the public, elementary, and vocational schools.

Publication of an educational magazine. An educational magazine, called Hinohikari (Light of the Sun), is published several times a year, and copies are distributed gratis to natives who have graduated from the public schools.

Scholarship aid. The association offers scholarships for study in Japan to natives who show promise of being useful in the development of the islands, and also to natives who aspire to become teachers. In 1932, two scholarships of the former type and one of the latter were given in the mandated islands as a whole.

A second organization, the Educational Association of the South Sea Islands (Nanyo Gunto Kyoiku Kai), was organized at about the same time "to carry out the study of educational problems and engage in various activities in the sphere of social education." It is supported by a modest annual grant of ¥ 600 from the South Seas Government, supplemented by contributions and membership fees, and it publishes a bimonthly professional journal, Gunto Kyoiku Kenkyu (Insular Educational Research). It has local branches at the seats of the district governments which engage in research, sponsor lectures and motion pictures, direct young people's associations (see 166), and assume leadership in community educational matters.

Both the above associations are clearly concerned with adult education and propaganda, as well as with the promotion of public school education.

Physical Education. Physical education is promoted by setting aside November third of each year as a special Physical Education Day, with appropriate activities (see 263). Considerable emphasis is also placed upon physical education in the regular curriculum of the public schools, in which calisthenics and athletic sports constitute part of the daily program.

Literacy. Before the islands were taken over by the Japanese, education was almost altogether in the hands of Spanish and German missionaries, who gave instruction in Spanish and German along with religious and other educational training. A number of the older natives, consequently, have some familiarity with a Western language. There is no evidence, however, that any number of them know English, which was never taught in the schools; nor is there any evidence that the church schools ever taught the native languages, as they did in the East Caroline and Marshall Islands. The Japanese government schools have ignored native language instruction altogether and, in consequence, the graduates of the public schools are not literate in their own dialects and have only a very limited literacy in Japanese.

By the end of 1937 a total of 10,288 natives in the entire mandated area, or 20.3 per cent of the total population, had been trained or were being trained in the Japanese public schools, where they received from three to five years of intensive instruction in Japanese. Just how effective this training has been is problematical. By the time they leave school, the natives probably have a fair command of ordinary conversational Japanese and are able to read simple writing, but they can read nothing as difficult as an ordinary book or magazine. Whether the native improves or even retains his command of the language depends upon the individual's capacity and the extent of his contact with Japanese. Hence it is likely that only the native teachers and others whose daily affairs require them to use Japanese are really very proficient in the language.

263. Propaganda and Public Relations

Propaganda Policy. In all propaganda issued by the Japanese to the natives, primary stress is laid upon the greatness, might, and invincibility of the Japanese Empire. The attempt is made to impress upon the natives that Japan is the leader in world civilization. Thus pupils in the public schools are taught that airplanes, electric lights, and other outstanding technological achievements were invented by Japanese and copied from them by Europeans and Americans.

There has been no propaganda emphasis upon the common interests and fundamental unity of the peoples of Eastern Asia and the Pacific. The Greater East Asia Co-prosperity Sphere is reported to have played no role in the Japanese propaganda in the islands as late as 1941. The objective seems to have been to intimidate rather than to conciliate the natives.

Propaganda in the Schools. The Japanese have utilized the school system as a main channel for propaganda. In courses in ethics, native and Japanese pupils alike are trained in Japanese standards of morals and conduct. Selections in public school readers are calculated to "brighten and purify" the sentiments of the pupils and are concerned primarily with the life and history of Japan. Courses in geography start with the mandated islands, leading then to Japan and last to the world in general. The schools for Japanese, and probably the schools for natives as well, are required to keep carefully guarded imperial portraits and copies of the imperial rescript on education, and school inspectors are required to report the care accorded them. The Kingensetsu (the anniversary of the founding of the Japanese Empire), the imperial birthday, Emperor Meiji Day, and January 1 of each year are observed with appropriate programs, which include group singing and a lecture by the school principal. In the Japanese but not in the native schools, at least according to published regulations, the program also includes the reading by the principal of the imperial rescript on education.

The school principals have organized young men's associations (see 166) and alumni societies, and propaganda lectures are frequently given at the meetings of these organizations. The educational associations (see 262) are likewise concerned to a considerable extent with propaganda.

Physical Education Day. Since 1928, the third of November of each year has been set aside as Physical Education Day, and a celebration is arranged under the auspices of the government offices, the schools, and the educational associations. Although ostensibly intended to promote and encourage physical education, the occasion is made to serve a variety of propaganda purposes. The attention of the public is secured by such means as the distribution of artificial flowers or badges. The program for the day includes such activities as athletic sports, games, and excursions; exhibits, lectures, and study groups on physical education and its value; public commendation of persons in robust health and of accomplishments in physical education; physical examinations and hygienic training; and communal cleaning of buildings and grounds.

Trips to Japan. Since 1923 tourist parties made up of native village officials, men of local influence, and young men who will become local leaders have been sent every year to Tokyo, Osaka, and other noteworthy places in Japan to acquaint them with condi-

tions in Japan and to stimulate them to improvement of conditions in the islands. These trips usually last about 20 days. The South Seas Government bears about half of the cost, each native paying from ¥ 130 to ¥ 150. The trips have apparently been quite successful, since the natives returning to the islands are reported to be "much enlightened." By the end of 1937 a total of 322 persons from all the mandated islands had been sent on these trips. None were sent from the Western Carolines in 1937, and figures are not available to show how many of the previous tourists were from this particular region.

Honors. On July 1 of every year since 1928, persons adjudged to have improved native communities are publicly honored. Village officials who have performed faithful service for over ten years receive red badges of commendation. Green badges are awarded to other persons who have rendered conspicuous service in improvement of native communities, yellow badges to those assiduous in the pursuit of agriculture. In 1932, four residents of the Palau district had been so honored, none in the Yap district.

Use of the Channels of Communication. Radio and motion pictures, in view of their relatively slight development in the islands (see 273, 274), are of little use as vehicles of propaganda. Posters are employed to some extent, and periodicals (see 275) still more widely.

264. Censorship

Postal Censorship. All incoming and outgoing communications must pass through the post offices at Angaur, Palau, and Yap (see 271). It is probable that they have always been subject to censorship there, although there is no conclusive proof. In 1940, however, censorship of outgoing first-class mail is reported to have become official.

Censorship of the Press. An ordinance of the South Seas Government, promulgated in 1929 and amended in 1933, specifies in detail the matter which newspapers and journals may not publish, and empowers the Governor to prohibit the distribution of local or imported periodicals if he adjudges them to contain matter "injurious to the public peace and good morals."

Surveillance of Visitors. Visitors to the Caroline Islands must register with the Branch Governor of the district visited and are liable to deportation if thought likely to disturb the public peace or morals, and visits by Europeans and Americans have been markedly discouraged (see 296). Through such a policy, coupled with censorship, the Japanese have been able to keep almost complete control of all information entering or leaving the islands.

27. COMMUNICATIONS

271. Postal Service

Post Offices. During the period of military administration, the Japanese established post offices to handle military communications, and these were subsequently expanded to deal with private communications. With the formation of the South Seas Government these military offices were replaced by government post offices. Regular post offices have been established in the Western Carolines on Yap, on Koror in Palau, and on Angaur, and a special post office has been set up on Fais. Each post office and special post office is headed by a postmaster. The postmaster of the Saipan Post Office serves as the administrative head of the entire postal organization in the mandated islands, and reports directly to the Governor. This position was held in 1941 by Teiji Nakane (Sonin). The regulations governing postal affairs are essentially those prevailing in Japan proper. The Governor is advised on postal matters by the Postal Affairs Section of the Department of Economic Development at Koror.

The postal business handled by the post offices is classified as ordinary and special mail, ordinary and special parcel post, postal money orders, and postal savings (see 353). In 1927 the post offices were directed to handle business connected with the annual revenues and expenditures of the South Seas Government. The post offices also operate all public telegraph, wireless, and telephone facilities (see 272).

Postal Personnel. The personnel of the post offices in the Western Carolines in 1939, all of Hannin rank except Shumbei Kaneko (Sonin), who became postmaster at Palau in 1941, is listed below:

Yap Post Office
- Ryokichi Imae, postmaster.
- Iwao Hirada, communications clerk.
- Asahite Iju, communications clerk.
- Tatsuo Kitamura, communications clerk.
- Kyoichi Sakamoto, communications clerk.
- Shinzo Wakabayashi, communications clerk.
- Kurata Yano, communications clerk.
- Hajimu Ito, assistant communications expert.
- Kurata Yano, assistant communications expert on part time.
- Sho Haginoya, assistant communications clerk.
- Yoneichi Hirose, assistant communications clerk.
- Sanjuro Okubo, assistant communications clerk.
- Yoshio Taniguchi, assistant communications clerk.

Palau Post Office
- Yoshiichi Morisata, postmaster, replaced by Shumbei Kaneko (Sonin) in 1941.
- Kensaburo Goto, communications clerk.
- Kikuo Ito, communications clerk.
- Teiji Ito, communications clerk.
- Ryu Kobayashi, communications clerk.
- Takeshi Kokaneya, communications clerk.
- Ryuchiyo Musira, communications clerk.
- Shosho Nanjo, communications clerk.
- Junichi Oyama, communications clerk.
- Seisei Takeshige, communications clerk.
- Fujisaku Wakatsuki, communications clerk.
- Bunji Yahori, communications clerk.
- Genzo Yokoda, communications clerk.
- Maruzo Yoshida, communications clerk.
- Yoshiro Honda, assistant communications expert.
- Hiroshi Nagada, assistant communications expert.
- Kiyoshi Shitagawa, assistant communications expert.
- Shichizo Tsunoda, assistant communications expert.
- Takeo Fukuda, assistant communications clerk.
- Hisao Abe, assistant communications clerk.
- Tashiri Kuboda, assistant communications clerk.
- Fumio Machiya, assistant communications clerk.
- Koji Okamoto, assistant communications clerk.
- Keiji Oyabu, assistant communications clerk.
- Takaichi Sekioka, assistant communications clerk.
- Toku Shirato, assistant communications clerk.
- Yasumori Takishi, assistant communications clerk.
- Shuichiro Tamamoto, assistant communications clerk.

Ryonoshin Toushi, assistant communications clerk.
Kiyoshi Uchida, assistant communications clerk.
Kyuro Yaki, assistant communications clerk.
Yasumori Yakishi, assistant communications clerk.
Shuichiro Yamamoto, assistant communications clerk.

Angaur Post Office
Yoshimatsu Motosaka, postmaster.
Taikichi Bogetsu, communications clerk.
Hisayoshi Tanaka, assistant communications clerk.

Fais Special Post Office
Shoken Kamimiya, postmaster.

Mails. Throughout the mandated area the postal service depends upon the steamship lines (see 294) to carry the mails. In 1927 mail was received at and dispatched from Palau and Angaur about once every three weeks; the mail service at Yap was slightly less frequent. By 1937 the interval between mails at these post offices had been decreased to an average of about ten days. Since the development of air transportation in the islands (see 293) air mail service has presumably been instituted, but no specific information is available.

Prior to the outbreak of war in the Pacific, mail matters were directly exchanged by certain post offices in the mandated area with foreign post offices, as follows:

Post Office	Foreign Territory	Foreign Post Office
Palau	Netherlands East Indies	Menado, Celebes
Palau	Philippine Islands	Davao, Mindanao
Jaluit	Gilbert Islands	Btaritary
Saipan	Guam	Guam

The number of letters and parcels handled by the post offices at Yap, Palau, and Angaur in 1937 is shown in the following table:

	Yap		Palau		Angaur	
	Total	Natives	Total	Natives	Total	Natives
Letters received	32,467	1,063	661,000	1,548	65,109	3,687
Letters sent	54,145	898	909,103	1,930	87,159	4,118
Special letters received	1,000	-	8,580	-	588	-
Special letters sent	881	-	10,746	-	597	-
Parcels received	272	4	2,722	5	192	5
Parcels sent	494	103	4,738	83	380	245
Special parcels received	253	-	3,592	-	238	-
Special parcels sent	1,497	-	17,518	-	1,622	-

Postage. The standard postal rate for letters to any part of the Japanese Empire is three sen; letters to other countries require a postage of 20 sen. The revenue from the sale of postage stamps for 1937 amounted to ¥ 7,289 at the Yap Post Office, ¥ 112,342 at the Palau Post Office, and ¥ 7,357 at the Angaur Post Office, as compared with ¥ 281,366 for the mandated islands as a whole.

272. Telephone, Telegraph, and Cable

Telegraph. During the period of military occupation the Japanese established telegraph offices to deal with military business, but in 1922 the telegraph service was transferred to the jurisdiction of the Governor of the Nanyo Cho, and its operation was entrusted to the post offices. Telegrams are accepted either in Japanese or in European languages.

The post offices at Yap and Angaur are equipped to handle wireless messages and to transmit by wireless to Palau. The post office at Palau has a wireless station which maintains direct communication with Japan proper, and which functions as a control and relay point for wireless connections among all the post office wireless stations in the islands. In this connection, the wireless station at Truk serves as an intermediary between Palau and the islands to the east, as well as handling all messages to and from Rabaul, Nauru, other islands of the South Pacific, and Australia. At Yap, connection is made with the Yap-Nawa (Ryukyu Islands) submarine cable, which is used for communication with Japan and thence with foreign countries. The Saipan wireless station functions as

a relay point for wireless messages dispatched to the Bonin Islands from the Caroline and Marshall Islands via Palau. There are military wireless stations on the islands of Peleliu and Woleai.

Rates for domestic telegrams are governed by two tariffs, one for interisland messages and one for communications between the islands and Japan. The charges for foreign telegrams are the same as those prevailing in Japan, except that reduced rates are allowed for direct wireless communications with Rabaul, Nauru, other Pacific islands and Australia. The revenue from telegraph operations in 1937 was ¥ 3,620 at the Yap wireless station, ¥ 19,918 at the Palau station, and ¥ 61 at the Angaur station, as compared with a total of ¥ 74,034 for the mandated islands as a whole.

Cables. During the German regime Yap was made the center of a submarine cable system for the mandated islands. A cable station was built at Tomil Bay and lines were laid to Guam, Menado in Celebes, and Shanghai. During World War I these cables were cut and the cable station was destroyed. Under the Japanese administration, however, the Tomil Bay cable station was rebuilt, and the former Yap-Shanghai line was repaired northward from Yap as far as Naha in the Ryukyu Islands, where a station was erected and a cable connection thus effected between the mandated islands and Japan proper. Messages are relayed from the other mandated islands to Yap by means of wireless telegraph or radio, and are then sent on by cable to Japan.

The Yap-Guam line was also repaired soon after the islands were mandated to Japan. Reports indicate, however, that it was broken again by a hurricane about 1925, and that it has been out of commission ever since. This cable was originally laid south-southeast from Tomil Bay to about 9° 20' north latitude, then eastward for about 15 miles, and thence to Guam, passing about 20 miles west of Ulithi and approaching the harbor of Apra from a point four miles west of the entrance. The detour near Yap was taken to avoid the deep water just south and east of that island.

The Yap-Menado line, which is reported to have been broken in two places during World War I and never subsequently repaired, was originally laid to pass about 40 miles south of the Palau Islands to avoid a submarine deep lying parallel to and southeastward of that group.

Telephone. In July, 1927, the South Seas Government issued a series of "Rules for the Telephone Service in the South Seas Islands," and telephone services were initiated shortly thereafter at the post offices on Palau and Saipan, where they have been made available to the public. As late as 1937, however, no government telephone facilities for public use had as yet been installed at any other post offices.

The Palau telephone service includes installations on the islands of Koror, Malakal, and Aurapushekaru. These installations are connected by wires strung from Koror along Madalai wharf and carried on poles across the channel to Aurapushekaru, and thence to Malakal. A radio-telephone service between Koror and Tokyo, probably using the station at the post office at Koror, was made available for public use in May, 1941. It is operated by the Kokusai Denki Tsushin Kaisha (International Electric Communication Company).

In 1937 the Palau Post Office reported 237 telephone sets in use and a revenue from telephone operations of ¥ 12,570 for the year. Only one native in the entire mandated area had a telephone in 1937.

Private telephone systems are reported for Yap Island and for Saipan village on Angaur, and it is thought that telephone systems may also exist on Sonsorol and Woleai. In 1937, private telephone systems were reported to include 27 telephone sets in the Yap district and 117 sets in the Palau district. Military telephone communications are doubtless in operation today at various places in the Western Carolines.

273. Radio

Radio Stations. A government-owned station with the call letters JRZ is located on the west side of Tomil Harbor on Yap Island. Its facilities include two straight masts about 150 feet high and two short stick masts. The station broadcasts on wave lengths of 300, 600, 1,200 and 1,800 meters, and has a daytime range of about 500 miles and a nighttime range of about 1,000 miles. Another station known to be located on Yap Island has not been positively identified, but it is believed to be one that was scheduled for construction during 1925-26 with a 50 kw. set for naval operation. There is also information that broadcasts take place on Yap over three other sets of call letters: JRM (short wave), JRN, and JPP. It is possible that these broadcasts may originate over the facilities of the two stations mentioned above. Details of other radio stations reported for the Yap district are as follows:

Fais: A naval radio station with the call letters JPF is located on Fais Island. It is licensed to operate at a capacity of 60 kw., uses the A-1 type of transmission, broadcasts on a frequency of 5,420 kc., and also has short-wave equipment.

Ulithi: A government radio station with the call letters JPL is located on Asor Island. It is licensed to operate at a capacity of 100 kw., uses both A-1 and A-2 types of transmission, and broadcasts on frequencies of 4,975, 6,100, and 8,955 kc.

Woleai: A naval radio station with the call letters JPO is located on the premises of the branch meteorological observatory. It is licensed to operate at a capacity of 500 kw., uses both A-1 and A-2 types of transmission, and broadcasts on frequencies of 4,975, 6,100, and 8,955 kc.

Radio stations have also been reported for Lamotrek and Sorol, but details are not known. As late as 1941 no radio stations were reported for Eauripik, Elato, Faraulep, Gaferut, Ifalik, Ngulu, Olimarao, Pikelot, Satawal, and West Fayu.

The most powerful radio station in the Palau district is located on Koror Island. The sending apparatus of this station (call letters JRW) is probably located in the post office building, and its four masts, each 300 feet high and 250-300 yards apart, are just south of the post office and east of the government building. The station has a capacity of 50 kw., can communicate with Japan, and broadcasts on wave lengths of 300, 600, and 10,000 meters. It has a direction finder and in 1933 was equipped with short wave. Another radio station, possessing three masts and located about 500 yards southeast of the pier at Ebadul, was reported in 1936. There is also information that radio broadcasting takes place on Koror Island over the following call letters: JPM, 69 kc.; JRG, 7,430 kc.; JRH, 8,070 kc.; JRK, 9,065 kc.; JRI, 11,880 and 12,005 kcs.; and JRJ, 3,920 kc. It is possible that these broadcasts may originate over the facilities of the two previously mentioned stations. In February, 1941, permission was given the Japanese Co-operative Broadcasting Company to establish on Koror Island a commercial radio station with the call letters JRAK. It was to use a 10 kw. set and to broadcast on frequencies of 1,174, 5,965, and 6,090 kcs. It is not known, however, whether this station has actually been established. Details of other radio stations reported for the Palau district are as follows:

Angaur: A radio station of 5-6 kw. capacity is located on the seashore west of Saipan village. This station broadcasts on wave lengths of 300 and 600 meters with the call letters JRY, and on short wave with the call letters JRL. Its radius is reported to be 100 miles in the daytime and 300 miles at night.

Babelthuap: A large radio sending station is located at Airai village, and a radio receiving station is located at Gasupan village. The sending station has a 10 kw. set, uses the A-3 type of transmission, and broadcasts with the call letters HMJ on a frequency of 9,455 kc., and with the call letters HMK on a frequency of 17,875 kc.

Sonsorol: A radio station with the call letters HMA is located here. This station has a 75 kw. set, uses the A-1 type of transmission, and broadcasts on a frequency of 5,420 kc.

Radio stations have also been reported for Kayangel Island and for Helen Reef east of Tobi, but details are not known. A radio station may have been completed on Tobi Island in 1942. Its license, granted in 1940, permitted construction of a station with the call letters JPQ on the premises of the meteorological observatory. It was to use a 100 kw. set with the A-1 type of transmission and was to broadcast on frequencies of 4,975, 6,100, and 8,955 kc. As late as 1941, no radio stations were reported for Merir or Pul.

Receiving Sets. It is reported that about 150 pearl fishing vessels operating out of Koror Harbor are equipped with radio. Presumably all these vessels have receiving sets, and some or all may be equipped to transmit radio messages. All police stations are reported to have radio receiving sets. Although no specific information is available, probably few if any of the native inhabitants of the Western Carolines possess receiving sets.

274. Motion Pictures

Moving Picture Theaters. No motion picture theaters are reported for the Western Carolines although there may be one or more in the town of Koror in Palau. However,

motion pictures are prepared in Japan for showing in the mandated islands, and are in fact exhibited, although the places are not reported. During 1937, eleven motion pictures were shown in the Yap district, with a total attendance of 4,444, and 37 in the Palau district, with a total attendance of 67,967. It is likely that most of those attending these performances were Japanese.

Educational Motion Pictures. The public schools are reported to make no use of educational motion pictures. However, the local branches of the Educational Association of the South Sea Islands (see 262) occasionally sponsor motion pictures, presumably of an educational nature.

275. Newspapers and Periodicals

Newspapers. According to an official Japanese report, as many as a dozen or more newspapers were published in the mandated area in 1937, but most of them were on a very small scale. Six daily newspapers were published in that year under the following names: Nanyo Shinko Nippo, Nanyo Kajio Shimbun, Nanyo Asahi Shimbun, Nanyo Shimpo, Truk Jiho, and Caroline Times. The place of publication was not reported for any of these journals.

According to detailed regulations promulgated by the South Seas Government in 1929, the publisher of a newspaper is required to inform the authorities of material to be published and to present them with copies of each issue. A revision in 1933 made it necessary to obtain official permission in order to start a newspaper. Like other periodicals, newspapers are subject to censorship (see 264).

Official Gazette. On December 17, 1936, the Archives Section of the Secretariat of the South Seas Government was instructed to publish an official gazette. Its contents, though nowhere explicitly described, presumably consist in the main of laws and regulations. The expressed purpose of this official publication is to keep village chiefs and other officials informed of changes in existing ordinances and regulations.

Educational Periodicals. Each of the two principal educational associations (see 262) publishes a periodical. The Hinohikari (Light of the Sun), a magazine published by the Imperial Bounty Foundation for the Encouragement of Study, is issued several times a year and is distributed free of charge to native graduates of the public schools. The Gunto Kyoiku Kenkyu (Insular Educational Research), a journal for professional educators, is the bimonthly organ of the Educational Association of the South Sea Islands. Some of the local branches of the latter association are said to issue magazines of their own, but whether or not there are such publications in the Yap or Palau districts is not reported.

28. PUBLIC UTILITIES

281. Water System

Waterworks. In 1940, the South Seas Government appropriated ¥ 160,000 for the construction of waterworks in Palau, but the progress of this work is not reported. Throughout the Western Carolines, the major source of drinking water is rainwater, which is caught in cisterns and tubs. There are some wells, but for the most part they are either unsanitary or brackish. The streams are used for bathing, rarely as a source of drinking water. However, on the east side of Malakal Island in the Palau district there is a good fresh stream and also well water which the Nanyo Boeki Kaisha supplies by lighter to other islands (see 121).

282. Sewerage

Sewers. There are no known sewer systems anywhere in the Western Carolines, and sewage disposal is generally very primitive. In 1931 there were three public latrines in Palau, erected at the expense of the Government. There is one public latrine in Yap, subsidized by the Government. Latrines and a few flush toilets are used in a number of private dwellings as well as in public buildings, such as schools and hospitals. Septic tanks may also be in limited use. Human excreta are used extensively as fertilizer by the Japanese truck gardeners (see 311).

283. Gas Works

Illuminating Gas. It is probable that illuminating gas is not used in the Western Carolines. No gas works are reported.

284. Electric Light and Power Facilities

Electric Lights. Since 1923 electricity has been supplied to the public on Koror Island, Palau, under the direction of the Branch Governor. In the Palau district in 1937 there were 5,627 electric lights in use, and the governmental revenue from electric power and light amounted to ¥ 59,946.

The government has supplied electricity to the public on Yap since 1925. In 1937 there were 402 electric lights in use in the Yap district, and the government derived a revenue of ¥ 3,664 from electric power and light services.

Power Plants. Reports indicate that there are eight electric power generators in the Palau district, one of less than 100 kws and three of less than 200 kws. Four generators operate with diesel engines, and the remaining four with either kerosene or gasoline engines. In addition, there is a power plant connected with the radio station on Angaur, and another on Babelthuap Island, the latter supplying power to the radio station at Arai.

In 1932 two electric power generators were reported in the Yap district, both operating with diesel engines of less than 50 kws. One supplied electricity to the public and was installed in 1925. The other, a 10 kw alternating current generator, was installed at the wireless station on Yap in 1930.

285. Public Buildings, Parks, and Improvements

Government Buildings. The offices of the South Seas Government and those of the Palau Branch Government are housed in a large rambling frame building situated in the eastern section of the town of Koror. The Governor's residence and the courthouse are located nearby. Other government buildings at Koror include the post office, the meteorological observatory, the Tropical Industries Research Institute, the Marine Products Experiment Station, the Products Museum, and the wireless station.

The government buildings on Yap include the office of the Branch Government, the post office, the meteorological observatory, and the radio station. All are one-story structures with the exception of the post office, which is a two-story frame building.

There are 15 schools in the Western Carolines (see 262) and three government hospitals (see 253). There is a leprosarium on Palau, established in 1931, and another on Yap, established in 1932.

Parks. Parks and gardens are maintained around or adjacent to the government office and some of the other public buildings at Koror in Palau. There is also a large athletic field with a baseball diamond and a backstop. Throughout the Western Carolines the schools are equipped with playgrounds.

Public Improvements. Streets have been widened or cleared, and sanitation facilities have been somewhat improved in the Western Carolines under Japanese administration. By means of subsidies and other incentives, the natives have been induced, in at least certain parts of the larger towns, to improve the construction and appearance of their dwellings during the past 20 years. Public washing and bathing places for the natives have been built on subsidies from the government.

29. TRANSPORTATION

291. Road Transport

Paths and Trails. Narrow footpaths are found on most of the larger islands in the Western Carolines. Within each settlement (see 163) there are better paths, connecting the native dwellings. On some islands superior paths connect the various settlements. Occasionally a causeway or bridge connects adjacent islets, as in the case of Woleai and Paliau in the northeast of Woleai atoll.

Streets and Roads. The natives were roadbuilders even before the arrival of Europeans. On Palau good roads, in many instances paved with large stone slabs, connected villages with boat landings. Yap, too, had many good roads, stretches of which were laid with actinolite slate. Most of these native roads had fallen into a state of disrepair, but the German administration was energetic in restoring and extending them.

The Japanese administration has spent considerable effort and money on the repair of the German roads and the construction of new ones. By 1932 it had spent ¥ 380,500 on road construction in the mandated islands and had completed a total of 67.5 miles of new roads. In 1937 the entire mandated area was reported to have a total of 340 miles of roads, of which 147 miles were less than 12 feet in width, 169 miles were between 12 and 21 feet wide, and 24 miles were highways more than 21 feet broad. Of the above totals the Palau district had 66.4 miles of roads, of which 41 miles were less than 12 feet in width, 21.7 miles were between 12 and 21 feet wide, and 3.7 miles were over 21 feet in width. The roads of the Yap district totalled 73.3 miles and were all between 12 and 21 feet in width.

The islands of Malakal and Arakabesan in Palau are connected with Koror Island by a road which in some places is built on piles over the sea; the section from Arakabesan to Koror is a 700-yard causeway. The road crosses Koror Island from the west to the north side, where a ferry connects with Babelthuap Island. On Babelthuap, the road leads east to Airai, whence a surfaced highway runs northward the entire length of the island via Ngatpang to Galap. In 1931, 80 imported laborers built a road from Mukeru in southwestern Babelthuap eastward into the interior, presumably to connect Mukeru with the main north-south highway. In 1940, ¥ 200,000 was appropriated for work on the main artery of Babelthuap. Earlier, in 1939, construction was started on a bridge or causeway to replace the ferry connecting Babelthuap with Koror. It was to be completed in 1941 at an estimated cost of ¥ 584,000. The streets in the town of Koror are fairly good, and some are oil surfaced or concrete.

On Peleliu Island there is a good automobile road from the village of Akalokul southwest to Asias. Another road leads from Asias to Attalabul via Ngalkol, but is not usable by autos. North of Asias this road continues over the mountain range. On Angaur Island there are level roads andpaths with good surfaces.

On Yap there is an excellent network of highways, most of which are suitable for modern vehicular use. Small roads and good paths encircle the larger islands near the shore. These are usually of sand or powdered coral, and they pass over a number of small bridges. At the town of Yap on Tomil Harbor a causeway crosses the arm of the sea from the cable station southwestward, and still another causeway farther west connects with the road from the former to the radio station. In 1940, ¥ 30,000 was appropriated for highway construction on Yap.

Vehicles. There are relatively few vehicles in the Western Carolines but they substantially exceed the number to be found in the Eastern Carolines. In the Palau district, for example, buses as well as passenger cars, trucks, and military vehicles are in use. A motor bus service is operated over the road connecting Malakal, Koror, and Arakabesan islands, with a terminal at the western end of Koror. Taxis are also in use to a limited extent on Koror.

In 1936, 30 automobiles, 23 motorcycles, 2,270 bicycles, 58 carts, and 13 wagons were reported for the Palau district, and 1 automobile, 4 motorcycles, 131 bicycles, 9 carts, and 5 wagons for the Yap district. There were no rickshaws. In 1937, 53 driving licenses were issued in the Palau district, and one in the Yap district. For police offenses relating to roads and vehicles, see 228.

292. Rail Transport

Railroads. There are no railroads open to public use in the Western Carolines. On Angaur, however, there is a railway about 12 miles long with a reported gauge of 24 inches used solely for transporting phosphates. It is owned by the Nanyo Takushoku Kaisha. Five coal-burning locomotives, of between 10 and 20 tons each, and 171 cars were employed

on the line in 1931. On Peleliu Island a narrow-gauge railway, operated by manpower, runs from the factory to the pier. A narrow-gauge railway is also reported in operation at the administrative buildings of the South Seas Government on Koror Island. On Yap, one of the stone piers in Rull (Tomil Harbor) just west of the bridge across the lagoon has a short stretch of narrow-gauge tracks.

293. Air Transport

Air Lines. In 1934 the Japanese reported that the South Seas Government had made practical arrangements for establishing aerial navigation lines throughout the mandated islands. From that time on there has been a rapid development in the construction of airfields and seaplane landing facilities and in the importation of planes and equipment. For the fiscal year 1940-41, for example, the budget of the South Seas Government included items totaling ¥ 1,698,399 for the establishment of air routes and aircraft facilities. During peacetime this expansion was justified on the ground that the air service assisted in the industrial and social activities of the population and promoted the efficiency of their administration.

Prior to December 7, 1941, two commercial air lines were in operation. On one, from Yokohama to Palau via Saipan and the Bonin Islands, a route covering 2,400 nautical miles, a round trip was made every two weeks, and on the other, from Palau to Tinian, a distance of 930 nautical miles, two flights were made monthly. In both cases Kawanishi four-motor flying boats with 20 passenger capacity were employed. Two additional lines were then projected and are now presumably in operation with increased schedules. One called for flights between Palau and Jaluit via Yap and Ponape, a distance of 2,600 nautical miles, and the other for flights between Tansui in Formosa and Palau, some 1,730 nautical miles. Kawanishi flying boats were also to be used on these routes. Palau is a key point in the air services, both commercial and military.

In October, 1941, Japan concluded an agreement with Portugal for the establishment of a daily air service between Palau and Dilli in Timor, a distance of 1,200 miles. The first trial flight was completed on October 20 by a mail and passenger plane, but on December 18, 1941, Portuguese Timor was occupied by Dutch, Australian, and New Zealand armed forces.

Air Bases. The strong defenses of the Western Carolines include a number of military and naval air bases. The location and facilities of the various airfields and seaplane bases in the area are described in the pertinent Army and Navy monographs.

294. Water Transport

Native Navigation. The natives of the Western Carolines have long been competent navigators. In former times the inhabitants of Ngulu voyaged to such distant islands as Ulithi, Eauripik, Fais, Sorol, and Woleai, and even as far eastward as Ifalik. The natives of Elato and Woleai sailed their canoes to Guam in the Marianas, and many of them with their canoes entered the service of the Spanish Government there, carrying on what little trade and communication existed between the Spanish administration at Guam and the northern Marianas. Canoes built on Elato and Woleai were highly valued throughout the area and also in the Marianas. Voyages were made to Palau to obtain the material for stone money (see 351), and the natives of the eastern atolls visited Yap to trade, to pay tribute, and to attend religious rituals.

From the time of the earlier voyagers to the last quarter of the nineteenth century, sea captains and other experienced navigators have testified to the amazing navigational knowledge of the natives. Without instruments of any kind they were able to undertake long and hazardous voyages in their relatively small sailing canoes, relying on their knowledge of the stars and on observations of currents, ground swells, and winds. They did not, however, share with the Marshall Islanders the art of making and using charts.

Today the natives seldom make long voyages. For one thing, they have lost much of the art and knowledge of navigation which permitted their ancestors to undertake long and dangerous voyages. For another, the natives have taken advantage of the interisland shipping services begun by the Germans and later materially extended by the Japanese. Finally, the Japanese administration has discouraged long voyages in native sailing canoes. The Yap Branch Government in 1928 forbade extended voyages in native craft by the inhabitants of isolated islands, and the other Branch Governments have adopted a similar attitude. In the coral islands throughout the area the use of native craft is now practically confined to short trips to other islets of the same atoll.

Native Craft. Canoe building was an important aboriginal industry. It was a specialized craft, confined to expert carpenters who enjoyed high prestige in their so-

ciety, and its practice was accompanied by an elaborate ceremonial. When native canoe travel was at its height, several types of craft were constructed. There were large sailing canoes for deep sea travel, smaller sailing canoes for shorter voyages, and paddling canoes for use in the lagoons. Today the canoes in use are all small and are confined to two major types: the small sailing canoe and the paddling canoe. Both craft are made of wood, lashed together with sennit, and stabilized by a single outrigger. The hull is generally a dugout with bow and stern identical. Nearly every native family has a small canoe.

Native canoes in the Western Carolines exhibit a basic similarity throughout the area. There are, however, distinctive features characterizing the craft of local areas, as well as different types designed for particular uses. In the Palau district all canoes, however elaborate, are hollowed from a single log. Although dugout canoes are also built in the Yap district, most of the finer craft are constructed of at least five separate pieces of wood (a keel, two end pieces, and two side planks), lashed together and caulked. In most islands there are at least two major types of craft: large sailing canoes for deep-sea fishing and interisland travel, and small paddling canoes for use in lagoon or coastal waters. Further specialized types are common. Except for bamboo rafts, found in a few islands, all water craft are equipped with an outrigger, attached by booms on the weather side.

The most characteristic canoe of the Yap district is the popo, a deep-sea sailing canoe which averages four feet in breadth and about 30 feet in length. The keel is slightly curved along the bottom, as viewed from the side. Identical fore and aft pieces are joined to the keel at a marked angle and curve slightly upward toward the bow and stern, where they terminate in characteristic forked figureheads representative of the tail of the frigate bird. The side plank on the weather or outrigger side is higher than the opposite plank and bulges outward more noticeably, making the canoe markedly asymmetrical in transverse cross-section. On the lee side, opposite the outrigger, a raised platform extends beyond the gunwale over the water. In some canoes this platform supports a small hut to protect the occupants from the sun and rain. The popo is painted black and red, and it carries a mast and sail. With relatively slight local variations this type of canoe is found from Satawal in the east to Ngulu in the west.

Most of the islands in the Yap district have smaller sailing canoes and paddling canoes of several types, some of them of dugout construction. A distinctive type is the cargo canoe (thauav) of Yap proper. This craft is broader and often longer than the popo and is further differentiated from the latter by its flat bottom and lack of a keel, symmetrical sides, truncated ends and differentiated bow and stern, and lack of a lee platform, which is replaced by a less substantial flooring over the center of the canoe. Like the popo, this craft is rigged to sail. A characteristic feature is the outline of a frigate bird carved in relief on the forward thwart.

Also characteristic of Yap alone is a large sailing canoe called "tsukupin," which is esteemed by the islanders as a sacred craft. It is said to be used only during the season for flying fish, and is stored in special boathouses with the outrigger detached, during the remainder of the year. The keel is boldly curved in crescentic form, and the hull is symmetrical in transverse section. The bow and stern rise to a considerable height, forming a swan-neck, and turn downward at the ends to represent a frigate bird's beak. The hull is painted red with the exception of the beaks, which are white. One or two white egg-cowries are suspended from the tip of each beak, and others from the outer angles of the lee platform.

The natives of Palau, as recently as the turn of the century built and used eight distinctive types of craft designed especially for such purposes as waging war, racing, trading, transporting cargo, offshore fishing, and traveling. Of these different types, only three survive, though in modified form: the war or ceremonial craft, the medium-sized sailing canoe for sea voyaging, and a smaller canoe for offshore fishing, traveling, and cargo carrying.

The war or ceremonial craft of Palau are giant paddling canoes, having a length of from 50 to 60 feet, and carry as many as 32 paddlers plus the steersman. The canoes are painted red inside and out, and are extensively ornamented, generally with shell inlays on the fore part of the hull and sometimes running its entire length in one or more bands. The hull is much the same as that of the medium-sized sailing craft, extremely narrow for the length of the craft, but the keel has much less curvature and is nearly straight for a considerable distance in the mid portion. The ends, fore and aft, are distinguishable by a long headbar placed transversely across the bows, painted white and richly decorated with shells and inlay. The outrigger float is considerably longer than in other craft, comparatively slender, and brought to a short, sharp, vertical edge at either end. These craft have been stated to excel in elegance and beauty those of any other primitive people. Probably few, if any, of the original craft of this type remain, and their present-day counterparts can be expected to be of smaller size and less artistically and lavishly ornamented.

The medium-sized sailing craft for sea voyaging are an adaptation of the former racing canoes. The hull is slim and narrow. The keel is considerably curved, so much so that the whole bow portion, including even a section of the keel, is generally out of water. The crew, usually four in number, is stationed aft, and when under sail the craft attains great speed. A particularly distinguishing feature is the presence of a carved figure of a kingfisher at both ends of the canoe.

The smaller craft represent an adaptation of the former cargo-carrying canoes. They are generally propelled by paddles, but a mast and sail are rigged when the wind is favorable. The hull is of the same general type as that of the medium-sized craft, but it is more massive and the lee side bulges more than the weather side. Frequently these craft can be closed by a cover, which protects them in part against the surf and waves. This is a distinctive feature of Palau canoes, and is sometimes also found on medium-size craft.

The paddles used by the Palau natives are painted red, and are generally ornamented with patterns drawn in white upon the red background. The designs frequently take the form of a conventional representation of waves. The loom is short, cylindrical, and without a handgrip. The over-all length is about four and a half feet, the blade being elongate and lanceolate. One side of the blade is flat and the other axially ridged. The extreme tip on the ridged side is thickened into a knob-like swelling shaped much like an olive.

Palau canoes are the only ones in Micronesia showing an affinity to any present-day Indonesian type, probably reflecting the proximity of the islands to the Philippines and the Moluccas. Among the variations which distinguish the canoes of Palau from those of the central Caroline Islands, the absence of a lee platform and the usual lack of any asymmetry between the two sides of the hull are especially noteworthy. Minor variations include the low inconspicuous extremities of the hull, the narrowing of the waist by marginal waterways, the angular forefoot, the presence of numerous peculiarly shaped thwarts, and the extreme shortness and stoutness of the outrigger float in sailing craft.

The dugout canoes of Merir, Pul, Sonsorol, and Tobi resemble one another rather closely. Those of Sonsorol, which may be taken as typical, are long, narrow, and sharp-keeled. In travsverse section the hull is wedge-shaped and symmetrical. The ends are lower and less prominent than in the popo of the Yap district, and they terminate in a single, slightly everted point rather than in a bifurcated prong. The outrigger float is short and sharply pointed at the ends, and the upper surface is axially ridged. The essential characteristics of the outrigger indicate a relationship to the canoes of the Yap district, but the form of the hull and the lack of a lee platform give evidence of influence from Palau.

The paddles of Sonsorol have a peculiarly wide, diamond-shaped blade, flat on one side and axially ridged on the other. They are comparatively long, and the transition from the loom to the slightly longer blade is scarcely noticeable. The paddles of Tobi have a short, round shaft and an extremely long blade, which is concave on one side, convex on the other, and axially ridged on both.

Harbor and Fishing Craft. At Koror on Palau there are a large number of native boats and Japanese fishing sampans. About 30 sampans were operating from Malakal Island in 1936 and about 50 in 1942. Sampans are used for moving cargo as well as for fishing. In addition, a number of motor sampans, drawing three and one-half feet of water, were operating regularly between Koror, Peleliu, and Angaur in 1931. There are also numerous lighters and 20-foot motor passenger launches at Koror. The latter are used to move passengers from anchored ships to and from the wharves. The lighters travel between the anchorage at Malakal Harbor and the concrete wharves at Madalai and Ngarbaged in Station Harbor. They used to pass around the northwestern tip of Aurapushekaru Island, but today they probably use the shorter route through the new channel. A number of the lighters are used for water supply. Tugboats have also been reported. Koror is likewise the base for the pearl-fishing fleet, which consists of about 150 vessels equipped with diesel engines and radios. In 1933 the Marine Products Experiment Station at Koror operated two experimental ships, the Suiho Maru (180 tons) and the Haku Maru (10 tons).

At Peleliu, lighters are used for supplies. They are towed from west of Ngeregong Island to Akalokul in north Peleliu, opposite Ngesebus Island. At Tomil Harbor, on Yap, there are probably a number of schooners and a few small steamers. Several power launches are reported to operate in the harbor.

Native canoes of the sea-going type are reported to be more numerous at Palau, Sonsorol, Tobi, and Woleai than elsewhere in the Western Carolines.

In 1937 there were 291 commercial fishing boats in the Western Carolines, with crews totaling 2,003 men. In the Palau district there were 80 such boats of less than five tons without motive power, 58 of less than 20 tons with motive power, and 146 power

boats of more than 20 tons, making a total of 284 vessels. In the Yap district there were seven commercial fishing boats only, each of less than five tons and without motive power. Fishing boats are used mainly in trawling for bonito and in obtaining hakucho (butterfly shells).

The number and type of vessels reported as operating in the Palau and Yap districts in 1937 were as follows:

	Palau District		Yap District	
	Number	Tonnage	Number	Tonnage
Motor ships	8	230	-	-
Motorboats	129	916	15	64
Sailing vessels with auxiliary engines (over 20 tons)	137	6,108	-	-
Sailing vessels (under 20 tons)	15	98	-	-
Boats	138	-	137	-
Sampans	89	-	24	-
Canoes	632	-	311	-

Ferries. The Yap Public Utility Guild was organized in 1937 to provide ferry service. It is reported to have been financed by natives of Yap Island, assisted by a small government subsidy. It was operating one boat in 1937, presumably connecting various parts of the island.

Eleven inter-island ferry businesses were reported for the Palau district in 1937. Four of them received subsidies from the South Seas Government. Three of these ferry services were apparently run by individuals, U. Wada, T. Hayasi, and M. Kanno, each operating one vessel and receiving a small subsidy. The fourth was maintained by the Palau Transportation Guild. This organization had an office at Koror, operated three vessels, and received an annual subsidy of ¥ 5,600. These subsidized ferry services are said to have maintained the following runs: between Koror and Airai on Babelthuap, 648 times a year; between Koror and Ngalmiskan, 300 times a year; between Koror and Ngardok, 182 times a year; between Koror and Babelthuap, Peleliu, and Angaur, 228 times a year.

A related commercial enterprise is boat renting. In 1937, two establishments renting boats were reported for the Palau district and one for the Yap district.

Shipping Services. Under the German regime, the government subsidized a regular service of three voyages each year between Sydney and Hongkong by the steamer Germania (1,906 tons), which called at Palau, Yap, Saipan, Truk, Ponape, Kusaie, Jaluit, Nauru, and Rabaul. A regular bi-monthly service was also maintained by the vessels of the Burns Philp Company between Australia and the Caroline and Marshall Islands; in 1925, however, the Japanese stated that vessels of this company no longer visited these islands. Steamers of the North German Lloyd and sailing vessels of the Nanyo Boeki Kaisha of Japan also made occasional calls at some of the islands.

Under the Japanese administration, shipping services to the Caroline Islands were considerably expended. In 1922 the South Seas Government made arrangements with the Nippon Yusen Kaisha to maintain a regular steamer service between Japan and the principal islands of the mandated area, and with the Nanyo Boeki Kaisha to do the same between the principal islands and adjacent isles. Subsidies from the South Seas Government to the shipping lines averaged about ¥ 700,000 yearly from 1922 to 1937, five sixths of this amount going to the Nippon Yusen Kaisha. The navigation subsidy in the 1940-41 budget amounted to ¥ 780,000.

Before the war the Nippon Yusen Kaisha operated four subsidized lines: an Eastern Line, a Western Line, a line connecting the Eastern and Western lines, and a Saipan Line. The Western Line started from Kobe and terminated at Tawao in British Borneo, touching enroute at Moji (Osaka on the return trip), Yokohama, Saipan, Tinian, Yap, Palau, Angaur, Menado in Celebes, and Davao in the Philippines. The total distance covered was 7,550 nautical miles, and the voyage required about 55 days. Ships of this line called at Angaur 40 times a year. The steamers reported to be in use in 1932 were the Yokohama Maru (6,100 tons), the Oni Maru (3,400 tons), the Amagi Maru (3,100 tons) and the Chikugo Maru (2,500 tons). In 1937 a regular service of 29 voyages a year was maintained by four unnamed vessels of 6,100 tons, 5,500 tons, 4,500 tons, and 3,400 tons respectively. In 1938, there were 36 voyages, and the time required for the round trip was reported to be 44 days.

The East-West Line of the Nippon Yusen Kaisha also started from Kobe but terminated at Jaluit in the Marshall Islands. Its ports of call were Moji (Osaka on the return trip), Yokohama, Palau, Woleai, Truk, Ponape, and Kusaie. The total distance covered was 9,260 nautical miles, and the voyage required about 53 days. Ships of this line called at Angaur twelve times a year. In 1933 the steamer used on this run was the Haruki Maru

(3,500 tons). In 1937 six voyages were made by an unnamed steamer of 3,400 tons. The Eastern Line and the Saipan Line did not call at ports in the Western Carolines.

The Nanyo Boeki Kaisha operated five lines: the Marianas Line, the Yap Isolated Isles Line, the Ponape Isolated Isles Line, the Truk Isolated Isles Line, and the Marshall Line. Of these, only the Yap Isolated Isles Line served the Western Carolines. In 1933 it maintained three services. Four voyages a year were made calling at the principal islands under the jurisdiction of the Yap Branch Government (Ulithi, Fais, Sorol, Eauripik, Woleai, Ifalik, Elato, Lamotrek, Satawal, and Faraulep), covering a distance of 1,400 nautical miles in 37 days. A similar service of four voyages annually connected the islands under the jurisdiction of the Palau Branch Government (Palau, Angaur, Sonsorol, Pul, Merir, and Tobi), covering a distance of 766 nautical miles in 26 days. A third service connected Yap and Palau, touching at Ngulu; four voyages were made each year, covering 285 nautical miles in three days. The Yap Isolated Isles Line maintained these three services with a sailing vessel equipped with an auxiliary engine.

Palau, in normal times, was a port of call (six times annually) for the ships of the Nanyo Kaiun Kaisha on its route from Japan to Java. Ships of the Nanyo Kohatsu Kaisha, based on Palau, call at Yap and Truk once a year. Ships of another line plied between Palau and New Guinea ten times a year. A freight steamer of between 5,000 and 6,000 tons transported phosphates from Angaur to Japan more than ten times a year.

Port Statistics. The tonnage and number of ships arriving at and departing from the ports of Yap, Palau, and Angaur in 1937 are shown in the following table:

	Yap			Palau			Angaur		
	Number Ships	Gross Tonnage	Net Tonnage	Number Ships	Gross Tonnage	Net Tonnage	Number Ships	Gross Tonnage	Net Tonnage
Arrivals									
Steamships	50	214,835	125,885	93	314,851	186,417	37	145,713	88,875
Sailing ships	30	5,043	1,975	282	26,169	13,102	3	2,527	962
Total	80	219,878	127,860	375	341,020	199,519	40	148,240	89,837
Departures									
Steamships	50	214,835	125,885	91	309,413	183,231	35	137,723	84,057
Sailing ships	29	4,844	1,878	224	23,906	11,820	3	2,527	962
Total	79	219,679	127,763	315	333,319	195,051	38	140,250	85,019

Shipping Regulations. A series of regulations for the control of shipping in the mandated area was promulgated on September 1, 1917, during the period of military occupation by the Japanese Navy. Although phrased in terms of the existing military administration, these regulations were repeated exactly in the annual reports to the League of Nations and were thus presumably in force, with necessary adjustments to the changed organization of the civilian government (see 213), throughout the mandate period. Indeed, the report to the League for 1937 specifically stated that they were still operative.

According to this law, only such ships shall navigate to the South Sea Islands as have received permission to do so from the Naval Department or the Headquarters of the Extraordinary South Sea Islands Defense Corps. Ships are not allowed to enter any places other than communication ports, unless they have obtained permission from the chief of the competent Military Administration Office.

In entering port a ship shall hoist its national flag and signal code characters. Upon making port, the ship's master must present a written report describing the vessel, its owner, nationality, and port of registry, its port of departure and ports of call, and the nature of its cargo. He must state whether or not birth, death, or crime has occurred during the voyage. He must also present an inventory of freight carried, a list of articles used on board, a register of the crew, a passenger list, a certificate of the nationality of his vessel, and the clearance permit issued at the port of departure.

A vessel at anchor or mooring in a harbor shall hoist a light in accordance with the provisions of the Law for the Prevention of Collisions at Sea.

A vessel entering a port shall not communicate with other vessels or with the land before the quarantine and police inspection have been completed.

When a vessel desires to sail, her master shall obtain a clearance permit, by presenting for that purpose to the competent Military Administration Office written reports, lists, and registers comparable to those presented upon arrival. No vessel shall take on board any foreigner not possessing a written permit issued by the Commander or the Chief of the Military Administration Office, or shall carry away by request any letter or other article which has not passed the examination of the Headquarters or the Military Administration Office.

The above rules are stated not to apply to vessels plying within a single civil administrative district.

Piers and Wharves. Three concrete piers with sheds are reported for the town of Koror on the western peninsula of Koror Island. The first, at Madalai in the west, is 27 feet wide and 886 feet long. It extends southwest beyond the reef into Station Harbor, and dredging has been reported in process to make it accessible to deep-draft vessels. The second pier lies about a mile to the southeast, at Ngarbaged. The third and newest lies between the others on the channel separating Koror and Aurapushekaru islands opposite the 90-foot canal which has been blasted across the western peninsula of the latter island to connect with Malakal Harbor. The older piers are used mainly by small vessels plying between the islands of the Palau group, whereas the new pier serves the larger steamers which run to the other South Sea Islands and to Japan. None of them, however, is able to accommodate a large ship alongside. They have been constructed by cutting away mangrove areas and filling in with concrete mole and roadway.

Koror Harbor at Ebaduls in northwestern Koror Island was served for many years by a wooden pier. In 1936, a concrete wharf was reported built north into Koror Harbor, possibly replacing the wooden one. It is said to be able to accommodate vessels of 10,000 tons alongside.

Malakal Harbor, enclosed by Aurapushekaru, Malakal, Ngargol, and Urukthapel islands, has always been the principal port of Palau for large ships. In 1939, a large quay was reported under construction on the east side of Malakal Island, with lifting gear and other facilities for accommodating two vessels of 6,000 tons. There are also three small piers, including one coal jetty, on the east side of Malakal Island, suitable for use by shallow-draft boats.

A wharf more than 100 yards long, at which lighters can dock, is located in front of the phosphate refinery on Peleliu. It has narrow-gauge tracks and is equipped with dumping racks, but it has no mechanical apparatus for loading phosphate.

At Angaur, two loading piers are in operation, one on the northeast side and the other on the west side in front of Saipan village. The latter, connected with the mines by a mechanical conveyor belt, is accessible to the railroad tracks, and can accommodate ships of considerable draft alongside. There are also small boat landings in front of Saipan village.

At various places around the island of Yap there are stone docks at which native craft land to collect copra. A few have water of sufficient depth for small schooners to berth. On the western side of Tomil Harbor there are short piers which, at low water, have a depth of three feet alongside. Tarang Island formerly had a stone coaling wharf with a depth of nearly five fathoms close up, but a vessel longer than 250 feet could not come alongside because of the configuration of the reef on which the dock is built. A vessel of 4,500 tons has been coaled there by using staging. The storm of December, 1925, is reported to have destroyed the quay and coal bin, so that in 1936 only small boats could come alongside. However, the pier may have been repaired since then. The jetty south of the Branch Government offices affords facilities for small boats, and is the usual landing place.

Two wooden piers are located in front of the office of the Nanyo Boeki Kaisha in the middle of the southern side of Woleai islet in Woleai atoll. There is also a pier at the southern extremity of the same island, and another on its northern side, but neither is secure. A small landing place has been observed on the southwestern shore of Woleai islet, and there is a possible landing place in the middle of Paliau islet on the lagoon side.

Gaferut Island was reported, as late as 1935, to have no wharves, but facilities for loading phosphate have doubtless been erected since then.

There is a pier on the south side of Tobi Island, with an excavated channel leading to it.

Harbors and Ports. The lagoons of many of the atolls in the Western Carolines provide natural anchorages, and some of them have promising possibilities as harbors. The principal ports are at Koror (Malakal, Koror, and Station Harbors), Yap (Tomil Harbor and base), and Angaur.

In 1924 the South Seas Government made extensive surveys and took preliminary steps for the improvement of harbors in the mandated islands. In 1925, work began at Koror on the construction of a channel across the northwestern peninsula of Aurapushekaru Island, connecting Koror with Malakal Harbor, and this was completed in 1930 at a reported cost of ¥ 106,992. In 1933 the new pier at Koror, opposite the newly opened channel, was constructed at a reported cost of ¥ 84,000. The space for unloading freight was extended and the channel further enlarged in 1935. These improvements proving inadequate, a port construction program to extend over six years at an estimated cost of ¥ 2,675,500 was adopted, and work was begun in 1936. When Japan withdrew from the League of Nations in 1935, the expenditures for harbor works in the mandated islands jumped from ¥ 118,254 for 1932 to an estimated ¥ 515,000, giving rise to considerable discussion in Geneva and

elsewhere. Nevertheless, activity in harbor improvements continued to increase, and ¥ 752,000 was allocated for such projects in the budget of the South Seas Government for 1940-41.

In 1927, Yap, Palau, and Angaur were declared ports of communication, and the procedure to be followed during arrival at and departure from these ports was prescribed in "Rules for the Control of Ports of Communication in the South Sea Islands." These rules provide that an arriving or departing vessel shall hoist, between sunrise and sunset, a flag showing her nationality and signal flags showing her name, and, between sunset and sunrise, shall display three lights, respectively white, red, and white, on the foremast at the point for showing the anchor-light. A regular mail ship, however, may display a flag indicating her owner in place of displaying signal flags. These flags must not be hauled down until the ship's arrival has been duly reported to the authorities. A vessel which has reported her intended departure to the authorities shall fly the blue peter. Immediately upon arrival a formal report shall be dispatched to the Branch Governor, and a similar report must be presented at least one hour before departure. Upon receiving a report of the arrival of a vessel, the Branch Governor sends competent officials to inspect the sanitary conditions of the ship and health of crew and passengers. Until the vessel has been cleared, the crew and passengers are not allowed to land or to communicate with other vessels. A vessel mooring or being navigated in a harbor or in its vicinity shall hoist, between sunset and sunrise, the lights provided for by the laws and regulations concerning the prevention of collisions at sea. Unless engaged in construction work at the harbor or in the salvage of wreckage, or disabled from navigation, or given special permission by the Branch Governor, no vessel shall anchor or remain in a fairway. A vessel arriving in port laden with explosives or inflammable materials in excess of normal needs shall fly the red burgee of the International Code of Signals between sunrise and sunset, and shall display a red light between sunset and sunrise. Special arrangements for unloading and anchoring must be made with the Branch Governor.

Aids to Navigation. The following aids to navigation were officially reported in 1937:

Type of Equipment	Yap	Palau	Angaur
Lighthouses	-	1	-
Lamp buoys	-	1	-
Night buoys	-	1	-
Day buoys	2	4	-
Fixed marks for large vessels	17	26	-
Land and guiding posts	2	-	-
Mooring buoys	2	4	4

In addition, an unreported white lighthouse, evidently of concrete construction, has been observed on Angaur.

The following regulations concerning nautical marks were promulgated on October 23, 1925. Beacons are ordinarily established by the South Seas Government. To establish a beacon at other than government expense it is necessary to obtain permission from the Governor through the Branch Governor. The same procedure must be followed to change its position or construction. Any such beacon may be altered or removed by order of the Governor. Any person who has damaged a beacon, changed its construction, or in any way altered it, and any person who has put up in any area a light which may easily be taken for that of a beacon, shall be punished with penal labor for a period not exceeding one year or a fine not exceeding ¥ 200. Any person who has moored anything to a beacon, or has caused a vessel, a raft, or any other thing to collide with a beacon, or has climbed upon or stained a beacon shall be liable to police detention or a minor fine.

The budget of the South Seas Government for the fiscal year 1940-41 included an item of ¥ 106,329 for the improvement of fairway marks. The total expenditures on aids to navigation in 1937 amounted to ¥ 210,080, of which ¥ 195,982 was spent for construction.

295. Storage Facilities

Warehouses. Copra sheds and storehouses are reported for most of the islands in the Western Carolines. There is a large warehouse on Fais Island, adjacent to the phos-

phate works. Two gunpowder warehouses were reported on Palau in 1937. There are doubtless a number of warehouses at the principal towns on Yap, Palau, and Angaur.

Coal Depots. There is a small coal depot on Tarang Island in Tomil Harbor, Yap. Twenty thousand tons of coal are reported stored near the coal jetty on the east side of Malakal Island, and about 1,000 tons of steam coal are usually on hand on Koror Island.

Oil Tanks. There are four 10,000-ton oil tanks on the west side of Malakal Island in Palau, and, in addition, a diesel-oil tank, 30 feet in diameter, and 60 feet high was reported there in 1935. All military, naval, and air bases in the area will, of course, have stores and facilities.

296. Travel

Native Travel. The Caroline Islanders have been accustomed to travel extensively, trading and visiting with relatives and friends on neighboring islands and atolls. During the German regime they traveled frequently on the German vessels, as well as making extensive voyages by canoe. Under the Japanese they have been permitted to travel as deck passengers on the regular trading vessels. For the most part, such travel has been restricted to vessels operating within a single administrative district. Each year, however, a few selected natives are sent on a visit to Japan at government expense (see 263). The extent to which the natives take advantage of their opportunity to travel on the regular trading vessels is indicated by the report that approximately one third of the fares on these vessels are paid by natives. In 1932, 6,691 fares were paid by natives and 14,028 by Japanese.

Travel Statistics. The extent of travel in the Western Carolines is indicated by the number of passengers embarking and disembarking at the ports of Angaur, Yap, and Palau. These statistics are available for 1932 and 1937, and are summarized in the following table:

	Yap		Palau		Angaur	
	1932	1937	1932	1937	1932	1937
Arriving						
Japanese						
Men	156	380	1,013	4,568	46	90
Women	73	228	363	1,306	35	65
Natives						
Men	457	369	269	184	424	303
Women	89	81	22	78	38	8
Foreigners						
Men	10	3	9	24	-	-
Women	-	2	1	9	-	-
Departing						
Japanese						
Men	202	555	1,254	7,126	63	123
Women	71	282	574	1,981	28	49
Natives						
Men	692	379	199	333	351	503
Women	97	108	32	83	34	1
Foreigners						
Men	11	3	8	21	-	-
Women	-	1	2	14	-	-

The travel statistics for the ports of Yap, Palau, and Angaur in 1937 also indicate the places of embarkation of the persons arriving and the destinations of those departing, as follows:

	Yap	Palau	Angaur
Place of embarkation			
Japan	146	6,405	119
Other South Seas ports	1,182	3,021	557
Foreign countries	-	132	-
Destination			
Japan	129	3,891	116
Other South Seas ports	933	2,136	350
Foreign countries	1	142	-

Foreign Visitors. All visitors to the islands who intend to stay for more than three months must register with the Branch Governor and must report any change of address. A visitor may be deported for disturbing the public peace or morals, or even if he is thought likely to do so.

The Japanese administration has discouraged Europeans and Americans from visiting the islands. There has been a little tourist traffic from Japan but none from other countries. Very few visitors from abroad have entered the islands in recent years. In 1928 Henry Crampton, with his wife and son, visited Palau and Yap to study snails. In 1930 and 1931 William F. Coultas toured the Carolines, spending three months in Palau. In 1932 and 1933 Major Bodley, presumably a British subject, traveled through the islands as a special correspondent for the Sphere. In 1933 Albert W. Herre spent a period of one month in Palau, Angaur, and Yap. Mrs. Fitz L. Reed visited Palau and Yap in 1934. In the same year Paul H. Clyde toured the mandated islands at the invitation of the Japanese Government, visiting Palau. Willard Price visited Palau and Yap in 1936.

According to Japanese reports, an American sailing vessel of 54 tons, with a crew of three Americans, visited Yap in June, 1934, and a British sailing vessel of 1,552 tons, with 40 Englishmen on board, visited Palau in January, 1936.

3. ECONOMICS

31. FOOD PRODUCTION

311. Agriculture

Native Agriculture. The natives of the Western Carolines have always depended upon agriculture for their primary means of subsistence. Except for crops cultivated for immediate use, little else is grown. Before the advent of Europeans the staple food crops were coconut, breadfruit, and taro. These were supplemented by bananas, yams, and sweet potatoes, and by Polynesian chestnuts, tropical almonds, and sugar cane. Hibiscus was cultivated for the production of bast, turmeric (Curcuma longa) for utilization as a dye, and areca palms and betel pepper for chewing purposes. The relative importance of the various food plants differed somewhat from island to island. In general, coconuts and taro assumed first place on the coral atolls; breadfruit, taro, and yams on the high islands. Taro cultivation was especially highly developed on Palau.

With a few exceptions, the above products still constitute the backbone of native agriculture. The cultivation of turmeric has practically disappeared. The acreage devoted to coconuts has expanded somewhat in consequence of the development of copra production for export (see 326). The natives have adopted, and cultivated in their gardens, a number of plants introduced by Europeans, notably, watermelons, muskmelons, cucumbers, pumpkins, pineapples, mandarin oranges, manioc, and papayas. On the whole, however, native agriculture has changed very little in its products, and still less in its tools and techniques.

Except for copra plantations, native garden plots are small and individually owned, each family raising just enough for its own needs. A few vegetables and trees are normally planted near the dwelling, but the main garden is located some distance away--usually on the mountainside in regions where breadfruit is the staple, near the shore when the main dependence is on taro. Frequently a hut is built near the garden for shelter during extended agricultural operations. In the interior of certain islands there are small and irregular plots of swamp taro where there are marshy depressions, and bananas, sweet potatoes, coconut palms, and sugar cane are grown in the midst of the underbrush. Fallow ground is frequently seen.

Because of the relatively slight seasonal variation in climate, most trees and vegetables bear throughout the year, and planting and harvesting take place at all seasons. Both sexes engage in agricultural work. The cultivation of taro is usually done by women, and the care of coconut palms is usually the work of the men. In Yap and Tobi, both agriculture and horticulture, with the exception of the clearing of the brush, are left to the women.

Land is cleared by cutting the grass and underbrush with a bush knife, allowing it to dry, and then burning it. Small trees are felled with an ax; larger ones are left standing but are killed, by burning them around the base, so that their foliage will not shut out the sunlight. The soil is broken with a wooden digging stick. Instead of turning up the whole plot, the natives merely loosen the ground around the spots where seeds or sprouts are to be inserted. Cultivation methods differ according to the crop.

There are two varieties of taro: dry, upland, or mountain taro, and wet or swamp taro. Land is used only once for dry taro, but swamps are immediately replanted with wet taro. Cultivation is continuous throughout the year. The tubers require from four to eight months to ripen, the mountain taro maturing relatively slowly. Dry taro will grow in moderately damp soil. The grass is removed and the tubers are stuck into the ground after the soil has been prepared. Wet taro must have its roots covered with water. It is planted in fertile, moist, natural depressions or in artificially made trenches and holes that are shaded by trees and irrigated. On Palau the taro plantations are separated by dykes, along the tops of which water from natural streams is conducted for distribution to the fields as required.

In preparing a taro field for planting, the marshy soil, which is hip-deep, is turned over with the hands, broken up, and freed of admixture. The firm botton is covered with a layer of freshly cut leaves, the previous layer being removed, and the loosened soil is replaced on top. The crown of a grown taro root is cut off, stripped of its larger leaves, and inserted in a hole in the swampy soil, where it grows as a new plant. The care subsequently given consists in watching the level of the water and in weeding out the grass, reeds, and bushes which spring up rapidly in neglected patches.

Yams are usually grown in cultivated soil. The roots are cut up and the pieces planted in hills. When planted in hilly areas, yams are cultivated in beds, earth is heaped up about the shoots, and the tendrils are drawn up on high bamboo poles. In lower areas yams are planted under trees, up which the vines can climb.

Sweet potatoes are usually grown in the interior of the islands in poor soil. The tubers are planted in beds, separated from each other by deep furrows. Planting can take place at any time of the year, and the harvest follows in three months. On Fais a new field is started every year.

To plant breadfruit, the natives transplant the sprouts which grow from the roots of mature trees; no special care is given to the growing trees. For planting coconut palms, sprouted nuts are used. The coconut palm usually bears fruit after seven years. Bananas are planted in beds near the dwellings or in the interior of the islands. Because the banana plant requires good rich soil, it does not usually thrive on low coral atolls. Tobacco seeds are broadcast over cleared ground. When the young plants have reached a height of two inches, they are transplanted two feet apart. On Fais the young leaves are protected from sun and wind by fans of coconut fronds and by fences made of leaves.

Fertilizers have been used since aboriginal times in the Western Carolines. On Palau and Yap the bottoms of taro trenches are covered with freshly cut leaves, which serve as green manure and are removed every six months when new planting takes place. On Satawal, fallen leaves of breadfruit, gilifou, and other trees are dug into the ground and thus mixed with the earth. On Yap, leaves and twigs are piled up around banana plants and sugar cane. On Tobi, decaying vegetable matter is used as fertilizer, and exhaustion of the soil is avoided by clearing new plots of land after one or two crops have been harvested. On Yap and Tobi, when the ground is no longer productive, it is allowed to lie fallow for a few years. Recently the Japanese have sought to promote the more extensive use of fertilizers.

The most serious threats to agricultural crops are typhoons, insect pests, birds, and rats. Typhoons causing severe damage to coconut and breadfruit trees sometimes do not occur for five years or more, but they may appear several times within a single year. They have discouraged the development of extensive coffee or cocoa plantations. Washed-out and salt-soaked taro fields that have been flooded by tidal waves do not bear crops for some time. Scale insects affecting coconut palms and other fruit trees have been found to be particularly destructive on Yap. The Germans discovered that this insect plague spreads rapidly during dry periods, while strong rainfalls cause a proportionate abatement. The chief method of combating the pest has been to cut off and burn single infested leaves and palm branches. The infestation occurs sporadically on other islands, e.g., Lamotrek, Palau, Sonsorol, and Tobi. The Germans observed that it has ravaging effects only in places where the soil is poor and the stocks are very old, leading to the conclusion that soil preparation and fertilizer are needed. Rats are very numerous and harass native farmers by digging up and eating tubers and by climbing fruit trees to despoil the fruit. Continuous attempts are made to keep them under control by trapping and by surrounding the plants with rush mats. Sometimes, also, the trunks of coconut and fruit trees are wrapped with leaves of the pandanus tree, the smooth surface and thorny edges of which keep the rats from climbing up the trees.

Most food crops are harvested at all seasons of the year as they ripen. Breadfruit is particularly plentiful on Sonsorol from May to June. A breadfruit picker, consisting of a pole to the upper end of which a piece of bamboo is tied at an acute angle, is used to harvest the crop. The bulk of the breadfruit crop is stored away for the future. The bark is scraped off the ripe fruit, which is placed in salt water for five or six hours. It is then deposited in shallow pits, lined with leaves and covered with earth, and is left there until it has become soft. Then the soft mass is kneaded together with leaves and packed into deep, lined pits, which are covered up with stones. Here the breadfruit preparation keeps for many months or several years. If kept in a dry place, yams can be preserved for six months. Harvested fruits on Fais are kept in small houses which are erected on perpendicular stone slabs.

In the official Japanese census reports for 1937, 4,059 out of a total of 5,857 natives in the Yap district, and 1,944 out of 6,449 in the Palau district are listed as farmers. In the Yap district these figures include all but a small fraction of the able-bodied adult population, whereas in the Palau district occupations are more varied. Nearly all of the native farmers are engaged in a combination of subsistence agriculture and the raising of copra for export.

Commercial Farming. Except for copra production, commercial farming is conducted principally by Japanese. In 1937, 16 Japanese men and one Japanese woman in the Yap district and 667 Japanese men and 90 women in the Palau district were reported as engaged in farming as their chief occupation. In the Yap district copra is practically the only commercial crop. As elsewhere in the mandated area, copra is mainly produced, not on plantations run according to European standards but by the native system of cultivation, which is encouraged by subsidies granted by the Japanese government. In the Palau district copra is less important than in Yap, but other commercial crops have been successfully raised, particularly manioc (for tapioca) and pineapples, though

still in relatively small quantities. Plantations of manioc have been started, and mills are reported to have been built in various islands for grinding the roots and preparing starch (see 325). The planting of pineapples has been encouraged and developed by the Japanese government. Cacao has recently been cultivated in Palau and is said to be one of the most promising crops. In all the islands there is a moderate amount of truck gardening, the principal crops being eggplant, pumpkins, cucumbers, Asiatic radishes (daikon), watermelons, and muskmelons, in addition to the plants generally cultivated by the natives. Papaya is one of the principal products in the Palau area, and some seed cotton is raised in the Yap district.

Agricultural Statistics. According to an official report for 1937, there were at that time 2,804 hectares (1 hectare is 2.47 acres) of potentially arable but uncultivated land in the Western Carolines, 1,512 in the Yap district and 1,292 in the Palau district. In the same year there were 296 hectares of newly reclaimed land, 15 in the Yap and 281 in the Palau district. The area under cultivation to coconut palms was 3,350 hectares in the Yap district and 1,974 in the Palau district, a total of 5,324 hectares. Other crops accounted for 2,207 hectares of cultivated land, as detailed in the following table:

Crop	Yap District	Palau District	Total
Vegetables			
Rice	-	1	1
Maize (corn)	-	1	1
Soy beans	-	1	1
Beans (miscellaneous)	-	1	1
Sweet potatoes	293	143	436
Yams	27	5	32
Taro (native)	275	293	568
Taro (Japanese)	22	23	45
Manioc (tapioca)	3	365	368
Watermelons	1	9	10
Pumpkins	2	4	6
Cucumbers	1	18	19
Casaba melons	1	5	6
Muskmelons	-	4	4
Eggplant	1	18	19
Asiatic radishes (daikon)	1	10	11
Ginger	-	2	2
Green onions	-	12	12
Pickling vegetables	1	12	13
Miscellaneous vegetables	-	1	1
Total	628	928	1,556
Fruit			
Mangoes	3	12	15
Pineapples	3	401	404
Bananas	3	51	54
Mandarin oranges	9	27	36
Papayas	2	26	28
Breadfruit	68	11	79
Total	88	528	616
Miscellaneous			
Sugar cane	-	8	8
Tobacco	-	1	1
Kapok	-	2	2
Cotton	6	-	6
Coffee	-	3	3
Cacao	-	4	4
"Tubers"	-	11	11
Total	6	29	35
Grand total	722	1,485	2,207

The total value of agricultural production in the Western Carolines, as officially reported by the South Seas Government in 1937, was ¥ 1,195,459, of which coconuts accounted for ¥ 666,947 and other crops for ¥ 528,512. In the Yap district, the coconut crop was valued at ¥ 456,513 and other agricultural products at ¥ 76,357. In the Palau

district, ¥ 210,434 of coconuts and ¥ 452,155 of other crops were produced.

The following table lists the value and quantity of agricultural products other than coconuts:

Crop	Quantity in Metric Tons			Value in Yen		
	Yap	Palau	Total	Yap	Palau	Total
Rice	-	0.6	0.6	-	74	74
Millet	-	0.1	0.1	-	12	12
Maize (corn)	0.6	1.1	1.7	82	90	172
Soy beans	-	3.3	3.3	-	530	530
Peanuts	-	1.6	1.6	-	332	332
Beans (miscellaneous)	0.1	1.2	1.3	9	195	204
Sweet potatoes	869.8	592.2	1,462.0	43,491	39,085	82,576
Yams	43.9	5.8	49.7	2,197	869	3,066
Taro (native)	188.9	2,307.2	2,496.1	9,443	92,288	101,731
Taro (Japanese)	44.4	64.7	109.1	2,222	8,606	10,828
Manioc (tapioca)	31.0	4,693.3	4,724.3	1,549	140,798	142,347
Watermelons	16.9	43.0	59.9	1,688	4,302	5,990
Pumpkins	29.3	12.0	41.3	2,340	1,198	3,538
Cucumbers	14.3	112.5	126.8	1,425	11,253	12,678
Casaba melons	9.3	35.9	45.2	740	4,061	4,801
Muskmelons	2.3	3.1	5.4	225	465	690
Eggplant	11.8	124.8	136.6	945	11,603	12,548
Asiatic radishes (daikon)	9.8	86.2	96.0	788	8,618	9,406
Turnips	0.6	3.0	3.6	45	302	347
Ginger	0.1	10.2	10.3	17	1,532	1,549
Green onions	0.3	67.3	67.6	61	8,745	8,806
Pickling vegetables	11.3	65.4	76.7	1,125	6,541	7,666
Miscellaneous vegetables	-	7.6	7.6	-	915	915
Mangoes	1.1	0.3	1.4	55	98	153
Pineapples	24.7	1,146.0	1,170.7	1,236	57,299	58,535
Bananas	6.6	268.2	274.8	199	12,068	12,267
Mandarin oranges	7.2	19.1	26.3	361	1,905	2,266
Papayas	1.8	438.7	440.5	176	35,095	35,271
Breadfruit	99.0	1.9	100.9	4,950	278	5,228
Sugar cane	-	28.7	28.7	-	861	861
Tobacco	-	0.3	0.3	-	945	945
Cotton	2.7	-	2.7	988	-	988
Kapok	-	0.1	0.1	-	99	99
Sesame	-	0.1	0.1	-	38	38
Castor beans	-	0.8	0.8	-	600	600
Coffee	-	0.7	0.7	-	455	455
Total	1,427.8	10,147.0	11,574.8	76,357	452,155	528,512

Government Encouragement. Both the German and the Japanese administrations have attempted to encourage agricultural development through experimentation and urging the natives to increased production. In 1902 the Germans issued a decree ordering the natives to plant four coconuts a month. Later they recognized the inadvisability of attempting to stimulate copra production by decree, but the different offices were ordered to teach and advise the natives and thus improve copra production. In the Palau group, about 200 camphor trees were planted near Koror, and cacao, coffee, Manila hemp, and indigo were introduced. Some success was reported with the production of cacao and coffee, but the experiments with indigo made by Japanese planters were a failure. Experimental gardens were laid out near the administrative office at Yap. Coffee and cocoa seeds brought from Palau and cocoa seeds from Guam, and plants of both were distributed to the natives. Experiments were also conducted with peanuts, Ficus elastica, mango, and teak trees, and mango and casuarina plants were given to the natives. On the whole it became apparent that the soil was not suited to coffee, cocoa, and rubber. However, rubber of the Hevea variety was reported to do well on Yap, a small cocoa plantation on Map Island in Yap, supervised by government officials, bore fruit in abundance, and some experiments with cotton were successful. Peanuts did not thrive. An attempt to grow Florida clover as fodder for cattle failed. Gum trees, pineapples, and agaves imported from New Guinea grew well.

German attempts to combat scale insects by smoking them out and by introducing ladybirds from Saipan were generally a failure. The most successful method was found to be that of cutting off and burning infested leaves and branches.

The Japanese administration, through the Tropical Industries Research Institute, established in 1922 at Palau, has carried out extensive agricultural and horticultural

experiments. An experiment station, operated by the Institute at the east end of Koror, has large farms and forests. Special investigations have been made with respect to those crops which have been found to suit the land best--upland rice, sweet potatoes, pineapples, millet, beans, peanuts, taro, tobacco, cotton, cocoa, coffee, papayas, bananas, breadfruit, tangerines, coconuts, peaches, and cabbages. Other vegetables which are reported to have been raised successfully on the experimental farms in Yap and Palau include tomatoes, okra, lettuce, carrots, squash, kohlrabi, spinach, and several varieties of potatoes.

The Japanese have also conducted considerable experimentation on the plant pests prevalent in the islands and on the insecticides by which they are best controlled. In some instances they have brought a pest under control by introducing a species which preys upon it. The insects which are reported to attack some of the more important crops are listed below:

Banana--no serious pests; some destruction by Aspidiotus destructor Signoret, Coccus viridis Green, and Pentalonia nigronervosa Coquillett.

Breadfruit--no serious pests; fruit attacked by several fruit flies; a little damage from Xenaleyrodes artocarpi Takahashi, Aspidiotus destructor Signoret, and Vinsonia stellifera Westwood.

Rice--plantations of rice in Palau have failed from fatal destruction by the common rice bug, Leptocorisa varicornis Fabricius, which is common in weeds in these islands.

Sweet potato--the prevalent pests are Cylas formicarius Fabricius (a weevil), Halticus tibialis Reuter, several army worms, and the caterpillars of Precis vellida Fabricius (a butterfly) and Herse convolvuli Linne (a hawk moth).

Taro--the principal pests are the leaf-hopper, Megamelus proserpina Kirkaldy, and the sphingid moths of the genera Hippotion and Theretra, which feed on taro in Palau.

A series of regulations for the control and extermination of plant pests was promulgated by the South Seas Government in 1923. The important provisions are as follows: (1) the injurious germs and insects to be controlled or exterminated shall be specified by the Governor, or in an emergency by the Branch Governor of a district; (2) an owner or tenant discovering such pests in his fields shall take immediate steps to exterminate them, and shall report his action at once to the Branch Governor; (3) when a Branch Governor is informed of the presence of pests in a field, he shall appoint a day upon which the owner or tenant shall apply measures of prevention or extermination; (4) when injurious insects or plant diseases appear to be spreading in an area, the Governor may direct the Branch Governor to take preventive or corrective steps, and the latter may requisition labor for this purpose; (5) persons so requisitioned must either provide the labor themselves or obtain or pay for a substitute; (6) when necessary, the Branch Governor may order the police to supervise and accelerate the work of prevention or extermination; (7) owners and tenants may not refuse permission to enter their land to officials charged with extermination or persons acting under their direction; (8) the Governor may direct the Branch Governor to dig ditches, to uproot and abandon, burn, or bury infested agricultural crops, trees, and weeds, or to prohibit the planting of crops within a specified area or their transportation to or from an area; (9) infringements of the above regulations shall be subject to punishment by detention or a minor fine. In addition to the above, all shipments of plants and seeds are subject to inspection (see 345).

The Japanese administration has likewise attempted to improve native agricultural methods through education. Although there are no agricultural colleges in the mandated islands, courses in improved agricultural methods are offered in the public schools. Native graduates of the public school are given additional instruction at the agricultural research station on Palau, where the Tropical Industries Research Institute erected a special school building in 1930. On Yap, although there is no experiment station, the district office operates an experimental farm which takes ten students annually and gives them practical instruction in agriculture.

A special attempt has been made to induce the natives to use fertilizers. In Palau it has been found that potassium is remarkably effective as a fertilizer. Phosphate from Angaur is reported to have been used to regenerate the land on other islands. The planting of lemon hibiscus has been encouraged to loosen the soil after the planting of yams, the growing of which exhausts the soil in ten years. The amounts (in kilograms) of various kinds of fertilizers used in the Western Carolines in 1937, doubtless largely by Japanese truck farmers, are listed in the following table:

Type of Fertilizer	Yap District	Palau District
Commercial fertilizers		
Sugar-phosphate	450 kg.	14,094 kg.
Mixed fertilizer	-	2,344
Ammonium sulphate	150	8,239
Aluminum phosphate	-	38
Lime oxide	-	47
Potash and potassium sulphate	150	1,278
Lime	-	1,088
Oil meal	450	4,103
Vegetable meal	450	7,326
Miscellaneous meals	-	795
Bone meal	150	353
Fish meal	-	157,054
Rice-hull meal	-	39,662
Domestic fertilizers		
Compost	2,540	232,275
Animal manure	1,260	248,321
Bird dung	-	2,700
Human excrement	6,870	463,818
Wood ashes	-	91,778
Peanut stems and leaves	-	2,831
Chorosa grass	145	4,500
Kurotararia grass	750	2,813
Kopi grass	625	825
Others	-	2,401
Totals		
Commercial fertilizers	1,800	236,418
Domestic fertilizers	12,190	1,052,262
Grand total	13,990	1,288,680

The South Seas Government also attempts to promote agricultural improvement through the payment of subsidies. According to regulations issued in 1924 and revised in 1933, the Branch Governor of a district is authorized to grant subsidies, within the limits of budgetary appropriations, to persons who cultivate, or improve their cultivation of, certain specified crops, particularly pineapples, coffee, cocoa, fruit trees, and garden vegetables. The following subsidies are specifically authorized for the designated crops:

Up to ¥ 24 per acre for reclaiming in one year more than one fourth of an acre of waste land.

Up to ¥ 12 per acre for initiating cultivation of the designated crops on more than one fourth of an acre of land.

Up to 60 per cent of the cost for constructing seedling beds larger than .027 of an acre.

Up to 60 per cent of the cost for improving land in order to cultivate the designated crops.

Up to the entire cost for importing seeds or seedlings of superior quality.

Up to 10 sen per 8.27 pounds of the product for cultivating more than five kinds of vegetables in quantities specified by the Branch Governor.

In 1937, such subsidies were paid in the amount of ¥ 3,901.98 in the Palau district; no regular subsidies were recorded for the Yap district. In the Palau district special subsidies of ¥ 4,474 for manioc and ¥ 17,548 for pineapple plantings, and in the Yap district ¥ 384 for cotton planting were paid. Special subsidies of ¥ 300 for the Yap district and ¥ 155 for the Palau district were paid to Japanese for vegetable cultivation.

312. Hunting and Animal Husbandry

Importance of Animals. Meat has always played a minor role in the native diet (see 152). The wild fauna, except for marine species, is scanty (see 125). The only mammals native to the Western Carolines are the rat and the fruit bat or flying fox, but dogs, cats, and pigs have been widely introduced and have run wild in the bush. Cats and dogs are kept as pets by many of the natives; the former are prized because they help to keep the numerous rats under control, and the latter are used as watch dogs. Domestic

animals are of limited importance to the native economy, but they have become increasingly significant as means of supporting the Japanese population.

Hunting. In the Western Carolines almost the only hunting is for the flying fox and the rat. In addition, crocodiles are caught on Babelthuap in Palau, and there may be occasional wild pig hunts in some places. The flying fox was formerly caught in large triangular nets. Rats are trapped throughout the islands to rid the houses and gardens of them. The natives detest them as pests and make every effort to exterminate them. Their flesh is eaten only in times of famine. Under aboriginal conditions rats were caught in a spring noose, or crushed under a weighted deadfall baited with fermented breadfruit. Today, steel traps are extensively used and are much in demand by the natives.

Hunting with firearms is permitted under Japanese regulations only if permission has been obtained from the Branch Governor. Licenses are granted to qualified persons to hunt for sport, for commercial purposes, or as a means of collecting specimens in the interests of science. In 1937, one new pleasure-hunting license was issued in the Yap district, and four were issued in the Palau district. In the same year ten licenses were issued to professional hunters in the Palau district. These figures do not include reissues and renewals.

Fowling. Under the conditions of native life, fowling was of some importance. Birds were caught primarily for their plumage, although pigeons were also used as food and some birds were occasionally kept in cages for the amusement of the children. Small birds were caught with a birdline made of breadfruit sap, with slip-noose snares, or with nets. The Palau natives likewise used the blowgun and the bow and arrow. The most important birds caught were the fruit pigeon, jungle fowl, frigate bird, and wild duck.

Poultry Farming. Domestic fowl were introduced to the Western Carolines at an early date, and in many instances were allowed to go wild. Each native household generally keeps chickens and ducks, and many have special henhouses. Turkeys and guinea hens were introduced under the German administration, but their rate of increase has been less rapid than that for chickens. The greatest threat to the survival of all these fowl is the omnipresent rats, which are extremely fond of their eggs. Chickens are said to be visited occasionally by a plague which, in some instances, kills off as many as 75 per cent of the stock.

From 1922 to 1931 the number of chickens was reported to average 5,500 in the Yap district, and 8,000 in the Palau district. The number of fowl in the Western Carolines as reported for 1937, together with the number of deaths and of birds hatched during the year, is given in the following table:

	Yap District			Palau District		
	Number	Deaths	Hatched	Number	Deaths	Hatched
Chickens	6,246	2,731	6,508	12,649	4,315	12,799
Ducks	52	3	23	495	36	304
Turkeys	-	-	-	10	-	3

The quantity of poultry products reported in the same year is given in the following table:

	Yap District	Palau District
Poultry meat	4,177 kilograms	5,799 kilograms
Hens' eggs	257,710 eggs	247,968 eggs
Ducks' eggs	660 eggs	5,080 eggs

Animal Husbandry. Under the German administration considerable effort was made to establish stock farming in the islands, and many breeds of livestock were experimentally introduced. The attempts at introducing cattle were only moderately successful; by 1909 there were 49 head of cattle on Yap and 12 head on Palau. Australian sheep were found to be unsuited to the islands, and it was concluded that sheep bred for meat are in general better adapted to the local conditions than are those bred for wool. Goats and deer thrived, but were not well liked because they took to eating young coconut trees. Pigs also did well, but Sidney boars imported to improve the breed did not survive. A herd of horses which the Spaniards had developed on Yap was shipped to the Philippines during the Spanish-American War, and later German efforts to raise horses on Yap and Palau were unsuccessful.

The Japanese administration has been more successful than the German in building up the livestock industry. Under regulations issued by the South Seas Government as early as 1922, bounties have been offered as a means of encouraging stock-farming. According to an ordinance promulgated in 1937, the bounties are as follows: up to ¥ 30 per head for cattle and ¥ 20 per head for pigs kept for breeding purposes; up to ¥ 120

per head for milch cows and ¥ 60 per head for service bulls; up to ¥ 10 per head for calves and ¥ 2 per head for suckling pigs, when more than two calves or eight pigs are raised in one year; and up to ¥ 5 per head for suckling pigs bought to be reared. The conditions under which these bounties are granted include the following: stalls must be constructed of reinforced concrete and must exceed 27 square yards in area; a report must be submitted annually to the Branch Governor indicating the number of animals kept, the cost of upkeep, the place and date of purchase, the number of births and deaths of livestock, the number and size of stalls, and the number of animals slaughtered. In 1937, the amount of such bounties paid in the Yap district totaled ¥ 158, of which ¥ 70 went to Japanese and ¥ 88 to natives. In the Palau district the total was ¥ 3,557, of which ¥ 3,465 went to Japanese and ¥ 92 to natives.

The South Seas Government has also paid considerable attention to the control of animal diseases. The maladies reported to afflict livestock in the mandated islands most commonly are anthrax, hoof and mouth disease, sheep pox, swine erysipelas, swine plague, abortus fever, rabies, and cattle plague. All deaths of livestock must be reported immediately to the police or to the Branch Governor. Diseased animals must likewise be reported, and if they are afflicted with a contagious disease they must be destroyed immediately. If deemed necessary, the carcass may be dissected and examined. All places or structures polluted by an animal with a contagious disease must be fumigated or destroyed. The Branch Governor may, if he considers it necessary, prohibit or restrict the import and export of either animals or their products in order to control the spread of disease. Animals and property destroyed under government direction are appraised by no fewer than three appraisers, and the owner is reimbursed up to four fifths of their value.

In 1937 it was reported that there were ten Japanese in the Palau district, but none in the Yap district, whose major occupation was that of stock-raising. The number of livestock in the Western Carolines in 1925, 1931, and 1937 is given in the following table:

	Yap District			Palau District		
	1925	1931	1937	1925	1931	1937
Cattle	69	98	78	65	137	315
Pigs	1,531	1,099	1,829	2,608	1,629	2,170
Goats	2	20	6	423	848	685
Water buffaloes	-	-	0	-	-	0
Horses	-	-	0	-	-	4
Sheep	-	-	0	-	-	0
Total	1,602	1,217	1,913	3,096	2,614	3,174

The most important animal product in the Western Carolines is meat, milk being of secondary importance. In 1937 the Yap district yielded 4,810 kilograms of meat, and the Palau district 57,322 kilograms. In that year no milk was produced in the Yap district, but 14,871 liters were produced in the Palau district, in which two dairies have been established. No raw or tanned hides are reported to be produced.

Slaughterhouses. In 1937 there was one slaughterhouse each in the Yap and Palau districts. One person was employed in the Yap slaughterhouse, and four were employed in the one on Palau. Detailed rules for the control of abattoirs were promulgated by the South Seas Government in 1934. They contain the following provisions: (1) a person desiring to establish an abattoir must apply to the Branch Governor for a license, and the application must state the permanent address, present residence, name, and date of birth of the applicant, the name and location of the proposed abattoir, together with a careful description, an estimate of the cost of construction, and the written consent of the owner of the land on which it is to be built; (2) the abattoir must be provided with an enclosure for tethering the animals, a pen for the inspection of living animals, a slaughter room, an inspection room, a cesspool, a dust bin, a disinfecting room, and an isolation room, each conforming to detailed and rigid specifications; (3) all animals to be slaughtered must be inspected for disease; (4) no abattoir shall be used for any other purpose than the slaughter of animals.

Detailed regulations have also been promulgated for the control of butcher shops (see 257), of which there was one in the Yap district in 1937 and 14 in the Palau district.

313. Fishing

Importance of Fishing. Next to vegetal foods, fish constitutes the principal means of subsistence for the natives. In addition, commercial fishing has in recent years become the most important industry in the Western Carolines, surpassing even phosphate

production. It has two major aspects, both of which are treated elsewhere, namely, fishing for commercially valuable shells (see 326) and the catching of bonito and other food fish which are dried and exported (see 325). The principal shellfish, other than those of industrial importance, are clams, crabs, crawfish, lobster, mussels, and shrimp. Besides bonito, the fish and sea animals most important for food include dolphin, dugong, flying fish, horse mackerel, mackerel, mullet, octopus, ray, shark, tunny, and turtles.

Superstitions Connected with Fishing. Throughout the Western Carolines fishing, especially fishing beyond the lagoon, was surrounded with superstitions and taboos. On many islands those engaged in fishing were isolated in their clubhouses and were not permitted any contact with women for periods sometimes as long as three months. Restrictions were placed on what they could eat and when they could eat it. Magical ritual was associated with every phase of fishing, songs being chanted and sacrifices offered to the gods. The few varieties of poisonous fish were the basis for elaborate folklore and exaggerated fears. In recent years the taboos have been relaxed, and fishing is increasingly becoming a practical activity divested of superstition.

Fishing Methods. The native fishing techniques include the use of hook and line, spears, clubs, dams, basket traps, weirs, nets, and narcotics. Although similar methods are used throughout the area, there is a certain amount of regional specialization in fishing methods. Yap, for example, has long been famous for the expeditions for flying fish which occur during May and June. Specially trained crews in large outrigger canoes attract the fish with torches of coconut fronds and net them as they leap out of the water. Scarcely less well-known are the numerous Yap stone dams and bamboo fences behind which fish are trapped by the receding tide. The natives of Yap are also proud of their ability at spearing fish. Palau, with fewer dams and fences than Yap, concentrates more on movable bamboo fish traps and on net-fishing. The Palau natives are also very skillful at angling, their tackle ranging from simple equipment consisting of a float of driftwood, a slender line of coconut fiber, and a wooden gorge, up to deep-sea equipment consisting of 100 fathoms of hibiscus line, sinkers of lead poured into bamboo moulds, and large hooks of wood or bone.

Fishhooks were formerly made from coconut shell, tortoise shell, bone, and wood. Metal hooks have been introduced by traders. Fishhooks are baited with bits of the body of the octopus, crawfish tails, or small fish. Feather flies and mother-of-pearl lures are reported to be still in use. Lines are made of hibiscus bast or of twisted coconut fiber. Today bonito, tunny, mackerel, and shark are caught from power boats with modern fishing equipment.

The narcotizing of fish is commonly practiced throughout the area. Derris roots and Barringtonia nuts are pounded and placed in the water, a favorite place being deep gaps in the reef. The fish become stupefied and either float to the surface of the water or are easily speared by divers. The use of these poisons does not render the flesh of the fish inedible. The use of dynamite in fishing is forbidden and is not reported to occur.

The methods of hunting the turtle vary. In Palau, strong nets of coconut fiber 30 to 40 meters in length are used. On Ful the natives put out beyond the reef in their canoes during the mating season and slip snares over the forefeet of amorous pairs of turtles. With the exception of such islands as Ngulu, where there are taboos on the eating of turtle meat, the turtle is propped up on stakes and baked in its shell. The muscles of the chest and the hind legs are especially relished.

Fishing Regulations. Although the Japanese have required licenses of commercial fishermen since 1916 (see 325), natives using their customary techniques were not required to obtain licenses until 1936. In this year a revision of the fishing regulations forbade the use of dynamite, poison, or electricity in fishing, and made licenses mandatory for all fishermen. For those not engaged in commercial fishing a permit good for three years is obtainable without a fee upon application to the Branch Governor and submission of a form containing the following information: name and address of fisherman, name, location, and area of fishing grounds (with two maps attached), kind of fish taken, and the fishing season.

314. Food Supplies

Food Supply. Native foodstuffs and their preparation are considered under 152, 311, 312, and 313. The commercialized food industries are treated under 325.

Stocks of Food. Accumulated stores of food are probably very limited in the Western Caroline Islands except for military supplies for the Japanese armed forces. Trad-

ers' stores (see 344) possibly contain small amounts of canned foods, although the importation of such goods has been greatly curtailed in recent years (see 345). Limited supplies of food may perhaps be found at some of the hotels and restaurants at Koror and other towns.

32. INDUSTRY

321. Handicrafts

Native Crafts. The principal native handicrafts were canoe building (see 294), house construction (see 323), mat and basket making (see 322), and the manufacture of utensils, tools, weapons, fishing gear, dyes, and ornaments. With some exceptions, notably on Yap Island, where tortoise-shell work and weaving are done by men and women alike, all work in wood, bone, shell, stone was exclusively in the hands of men, whereas pottery and textiles were manufactured by women (see 334).

The natives of the Western Carolines were skilled wood carvers. This art was very often combined with an equally advanced technique of painting, varnishing, and lacquering. Canoe carvings, dance paddles, wooden bowls, and the elaborate designs in the men's community houses all give evidence of careful craftsmanship. This was particularly true of the natives of Palau, where division of labor and specialization were quite pronounced, and the development of tools and instruments fairly advanced.

The native tools comprised shell-headed axes and adzes, cutting blades and scrapers of shell, stone or wooden pestles, shark's-tooth or bone awls, wooden beaters and mallets, bone and wooden needles, ray-skin files, and coral or pumice-stone polishers. In addition to these, the compass, ruler, chisel, level, and shell and stone saws were used in Palau. The native utensils included wooden and coconut-shell bowls, baskets, shell dye-bottles, wooden vats, and bamboo lime containers. Among the more ingenious devices used were the following: a pump-drill, an elevatable scaffolding of wood and rope for the raising of the ridgepole in house construction, a rat-trap, and a wooden food-hanger for the protection of food from rats. Indigenous weapons included the club, spear, shield, and sword. Fishing gear consisted chiefly of shell and tortoise-shell fishhooks, twisted or plaited lines, nets, spears, and baskets in which to carry the catch. Apart from tattooing and body paint, adornment of the person was principally by the use of jewelry, chiefly necklaces, armlets, bracelets, combs, and belts. Most ornaments were made of marine shells, coconut shell, or tortoise shell.

Ceramic art, which was not practiced elsewhere in the mandated islands, was formerly well developed in the Western Carolines. Pottery making was one of the more important occupations of the women, and pots were extensively used in cooking (see 152). The technique employed was relatively primitive. Suitable clay was moistened and kneaded into long rolls, which were then built up spirally to form the pot. Considerable skill was shown in obtaining symmetry of form without use of the potter's wheel. The pot was then baked on an open fire. Glazing was unknown. Pots were rendered waterproof by boiling shredded coconut meat and water in them the first time they were used, thus clogging the porous clay with coconut oil.

Modern Crafts. Most of the native crafts of Yap have disappeared. The old tools have been supplanted by metal implements of modern manufacture, and the products of native crafts have been replaced by Japanese goods. Huts, some boats, some cordage, and a few curios are now among the few surviving vestiges of native Yap industry. In Palau, foreign goods have made inroads on native production, but not to the extent apparent in Yap. Carving, weaving, the manufacture of cordage and nets, mat-making, basketry, pottery manufacture, and the production of native jewelry still survive in some localities. European cloth, tools and implements, nails, paints, and dyes, however, are becoming more and more widely used.

322. Textile and Clothing Manufacture

Cordage. Cordage manufacture is traditionally men's work. The native cordage is most commonly made of coconut fibers, hibiscus bast, or banana fibers. Coconut fiber is the most plentiful and, therefore, the most widely used. Longitudinal pieces of the husk of half-ripe coconuts are steeped in water, pounded, and cleansed, and the individual fibers then are separated. These fibers are twined to form lines, or braided into heavy cords. A fair quantity of banana fiber, as well as some hibiscus fiber, is produced in the Palau district, especially for weaving. The threads and cords prepared from these various fibers serve innumerable purposes. They were formerly used extensively in house construction, canoe building, and fishing, and in the limited manufacture of loom products. They are still widely used for these purposes, although nails have largely supplanted cordage in house construction, and native weaving has disappeared in some areas, especially in Yap.

Basketry. Basket-making is traditionally women's work in all the islands of the Western Carolines except Yap, where the men also participate in the craft. A number of

different kinds of baskets are made, the most common type being constructed of coconut leaves for immediate temporary use. The midrib of a young coconut leaf is split down the middle, and its leaflets are so plaited together that the wooden borders form the rim of the utensil. More carefully made baskets are constructed of pandanus leaves. Dried leaves of the pandanus are bleached or dyed, split into fine strips, and interwoven to form geometrical designs on the finished product. Baskets serve many purposes: for carrying fish and vegetables, for storing foods, and as cradles. As a part of their educational policy, the Japanese have encouraged the natives to preserve their basketry art, and beautifully made baskets of various types are still produced, especially in Palau.

Nets. Net-making is men's work. Fish nets have always formed an important part of the native fishing gear (see 313). They are made in a variety of sizes, and are fitted with wooden floats and sundry sinkers. Whereas fishing lines are often of hibiscus fiber, nets are more generally of coconut fiber. Many of the larger nets are imported today, but the smaller fishing nets of native materials are still produced. Net utility-bags are also still used.

Mats. Mat-making is women's work on all the islands of the Western Carolines except on Yap, where mats are made by both sexes. They are the most important native textile product, serving a wide variety of uses. They cover the floors of native huts; sewn together they form the native sail; at night they serve as both mattresses and blankets; they are used as shrouds for the dead. In former times, moreover, they were extensively worn as garments, and they are still used as clothing in parts of the Palau district (see 151). Mats are generally plaited of pandanus leaves, coconut leaflets, or hibiscus bast, although some are made of the finer banana fiber. Sewing is employed only in making mat sails. The fibers and leaves to be plaited are first soaked in water and then carefully dried either in the sun or over a fire. They may be dyed red or black, or left in their natural color. The materials are finally smoothed with a piece of shell. Plaiting techniques vary widely, and designs are dictated by the use to which the mat is to be put as well as by the artistic skill of the maker.

Plaiting. A number of articles other than mats are plaited by the natives. Among them are pandanus-leaf hats, fans of pandanus and coconut leaves, and fiber reef-fishing shoes.

Weaving. Loom weaving was formerly an important occupation of the women. The craft was highly developed in the Yap district, where it is said that the most beautiful weaving in Micronesia once took place. Today, however, the art is all but forgotten. Belts and small mats were woven of hibiscus bast or banana fibers on a simple horizontal loom. Weaving was characterized by intricate patterns in black, red, and tan. An interesting specialization on Yap was the weaving of small mats which were used as money.

Dyeing. Native colors used in dyeing are red (ocher), orange or yellow (turmeric), black (soot), and white (shell or coralline lime). Turmeric dye, largely a product of northern Yap, is manufactured by men. The native dyes have largely fallen into disuse today, and have mostly been supplanted by commercial dyes.

323. Housing and Construction

Native Houses. Despite some European influence and considerable Japanese cultural pressure, native modes of architecture have persisted in the Western Carolines, and native houses in the old style still predominate in many localities today. The principal native structures are dwellings, cook-houses, men's community lodges, and canoe-houses. There is considerable local variation in styles. Differences in design and construction are particularly apparent between the houses of Palau and those of Yap. Another general difference between the two is in the location of dwellings. In Yap villages they are usually widely scattered among the trees, each house with its cook-houses and subsidiary structures occupying a well-kept private clearing; in Palau, they cluster together in politically and socially organized communities.

Houses in the Yap District. The dwellings on Yap are uniform in style, and design. They are hexagonal in shape and are built on stone foundations. Four securely planted corner posts (stripped tree trunks) support the longitudinal beams, and from three to five central pillars uphold the rooftree of the high gabled roof. Ornamentation is simple and sparingly used in Yap itself, but the natives of Lamotrek, Woleai, and Ulithi, use some carved and painted ornamentation. Six doors, one at each end and two on each side, serve also as windows. The roof is thatched with palm or coconut fronds, and the walls are of a light material, such as reeds. Coconut-fiber cord was formerly always used, but nails are now quite frequently used in construction. The floors are covered with boards or

clay and sometimes with mats. The interior is invariably divided into two rooms, one serving as the master's private sleeping quarters. Magical ceremonies accompany the construction of these dwellings, and superstitions attach to them thereafter. Talismans hang at all times at places prescribed by custom, both outside and in. Entry, even by intimate friends of the owner, violates custom, except at the owner's special invitation.

In the eastern atolls of Faraulep, Ifalik, and Satawal, the dwellings differ markedly in type from those of Yap. They are built without foundation and are rectangular in shape. In Sorol, stone foundations are not used, and the less careful construction and basically rectangular design also differ markedly from the Yap type, although the houses sometimes superficially resemble those of Yap in appearance. The same is true of the dwellings of Ulithi, from the housebuilders of which islands the Sorol natives are said to have learned to build and live in houses. In Satawal the interior of the house forms a single unpartitioned room. In Elato the dwellings are primitive huts with sloping roofs semi-conical in shape. The houses of Ngulu and Eauripik differ from the Yap type principally in the fact that their walls and doors are often of plank. In Lamotrek and Woleai, primitive dwellings without a stone foundation have been observed, but at least the larger houses and some of the smaller ones conform to the Yap type.

A typical cook-house on Yap consists of a pile of stones surrounded by a partition open at the front; the roof is flat or, more often, sloping from front to rear. A tripod made of three stones constitutes the hearth. Next to the cook-house is a branched stick for hanging baskets, bottles, fish, or the like, as well as a bamboo stand holding coconut-shell finger bowls for use after cooking. Two cook-houses are customarily constructed, one for the preparation of the master's food, the other used for the women and children. In some communities, cooking for the women and children is done in community cook-houses. In general the cook-houses of Yap proper are constructed with more care than are those in the outlying atolls.

The most arresting structure in any village in the Western Carolines is the men's community house. In Yap the men's house is essentially identical in design and construction, except as to interior arrangement, to the family dwelling, but it is much larger. Its construction is a joint enterprise of the entire community, although craftsmen from surrounding villages may be imported to help. Community houses sometimes take several years to build, and their cost is proportionately great. Some villages have run heavily into debt in erecting them. While wealthy communities often have more than one men's house, it is not uncommon for several poor villages to join forces and erect one men's house in which they all share. Men's houses are lacking in some of the poor communities on Ulithi, and canoe-houses are used in their stead on Eauripik, Fais, Faraulep, and Lamotrek.

The men's house is customarily erected along the shore on stone piers, which extend into the water of the lagoon, sometimes attaining a length of 1,000 feet. The floors are of earth or wood; the roof, of diagonally woven coconut or pandanus leaves, laid on straight. Double walls are common. The interior is divided down the center, from front to back, by a passageway equal to nearly half the breadth of the building; on either side are the sleeping quarters, partitioned with logs to form apartments about six by eight feet in size. Those on the right are reserved for the young men; those on the left are for the chief and the old men. The interior of these buildings is elaborately decorated with woven and plaited designs. A feature common to virtually all of them is the great discs of stone money which stand against the outside, or are placed along the inside wall, a form of ostentation also practiced by wealthy chiefs in their dwellings. Since the native villages are rarely very populous, the men's activities can ordinarily be accommodated in a community house the size of an average western one-story home. Very few exceed 100 feet from front to rear, and 40 feet in width, but most are considerably smaller.

Men's houses are used as solemn council halls (originally these were distinct buildings), as social halls, and men's living quarters. When used as council halls, they are cleared of all outsiders and the greatest of decorum is enforced. As clubhouses they become the focal point of masculine activities, especially in the night hours. There are five fireplaces, on the social (right) side of the house, at which to gather and gossip or revel. The only women ever allowed in any men's house are those from other villages who have been nominally kidnaped and brought in as the joint property of the men of the lodge.

Canoe-houses are an invariable adjunct to the native dwellings throughout the Yap district. They are commonly grouped in one place in each community. The typical canoe-house on Yap consists of a low-hanging roof with four supporting posts but no walls. Nets and other gear hang from hooks on the cross-beams or rafters. In Lamotrek, Ulithi, and Woleai the canoe-houses are ornamented with carved and other designs, but elsewhere in the Yap district they are plain or only slightly adorned. In the outlying atolls of Eauripik, Fais, Faraulep, and Lamotrek, the canoe-houses, unpretentious as they are, serve as men's houses and assembly halls.

Special huts for menstruating and parturient women are set apart from the village proper. They are less well constructed than the dwellings and usually lack foundations.

On Yap they are provided with lofts for storage, and with sleeping-mats. On Elato, menstruating women sleep in the cook-house. Needed repairs on these huts are made by the women. In some communities, the handicrafts performed by women, such as pottery making, is carried on in crude houses especially built for the purpose. In many communities on Yap, other simply constructed outbuildings are used as fowl and pig houses and as storehouses for coconuts and firewood. These structures are often lacking in the outer atolls of the district.

Houses in the Palau District. The typical dwelling in the Palau district is a rectangular gabled house with a single room. Its foundation consists of four piles on which rest the lengthwise and crosswise beams forming the base of the frame. Four corner-posts support the purlins (upper longitudinal beams) and valley beams (upper transverse beams at each gable end). Props rising from the center of the valley beams support the rooftree. The roof and walls are usually of palm-leaf thatch, occasionally of mats. Historically, dwellings in Palau were subject to strict sumptuary laws, which permitted chiefs six doors, the very wealthy four to five doors, and others two to three doors. Few chiefs today avail themselves fully of this privilege, although their houses are generally larger and more extensively decorated than other dwellings. An ordinary house averages about ten feet in height, 20 feet in breadth, and 25 feet in length, but the dwelling of a chief may be as much as 80 feet long.

One or two hearths, built level with the bamboo floor, are constructed next to the wall on that side of the house where the women sleep and work. These consist of rectangular plank troughs filled with coral or stones, with three large stones as a tripod. In contradistinction to Yap, cooking is generally done at the hearth, although cook-houses are also widely used. There are no chimneys, and the smoke escapes through the doors or thatching. Near the hearth are shelves, hooks, and, in modern times, cabinets for cooking equipment and sleeping mats.

The interior of the house is commonly painted, and decorative effects are achieved by carvings and shell-work, rather than by plaited and woven designs as in the Yap district. Before each residence is a stone pavement, under which are buried the deceased of the house.

No ritual or superstition attaches to housebuilding, but permission to put up a dwelling must be obtained from the chief. For the most part, a single family occupies a dwelling, but cases are not uncommon where a son or daughter upon marrying continues to live with his or her spouse in the parents' house, especially if it is a large one.

Sleeping-houses, used principally when the mosquitoes are bad, are widespread in the Palau district. They are of open construction, and are erected in places where the mosquitoes of the locality are least thick.

The cook-house, which usually stands near the dwelling to which it belongs, consists typically of four corner-posts supporting a thatched roof. It shelters the oven, a pit lined with coral or other rock which is brought to cooking-heat by a fire of wood or coconut waste. Formerly an exclusive privilege of chiefs, the possession of a cook-house is now enjoyed by the majority of families. Many if not most dwellings today also possess a storehouse. Other outbuildings include crude pens for pigs and fowl, temporary buildings near the breadfruit trees for cooking breadfruit during the season, and rest houses near the taro and other fields.

Canoe-houses stand in immediate proximity to the shore in front of the dwellings which they resemble in basic structure. They are open at the ends, and the low-hanging roof serves as a wall on either side. Long beams are leaned against the long side of the roof to windward, to weight it down. Some canoe-houses are painted within, and otherwise ornamented with carvings and other decorations. Inside, the canoe is supported on two rollers and fishing gear and other paraphernalia are stored. Some villages have communal canoe-houses, but they never serve as sleeping quarters.

The most spectacular native structure in Palau, as in Yap, is the men's community house. These structures vary in size, a large one measuring as much as 80 to 100 feet in length, 20 to 25 feet in width, and 25 to 40 feet in height. They are invariably erected on stone foundations, on which are laid fitted longitudinal and transverse beams of hardwood and red ebony. Vertical posts of similar wood are fitted into the long beams, at intervals of about six feet, to support the purlins and valley beams. The walls, about six feet high, are of tight-fitted boards, and are surmounted by a steep, rather flimsy, mat roof. There are ordinarily six doors, of wall height and five feet in width, one at each gable end and two on each long side. They serve also as windows, and are closed by means of thatched cane screens. Holes made in the floor serve as an outlet for refuse and sweepings, which are collected and removed from time to time or left under the floor for the pigs and chickens. The interior is practically without furniture or equipment, except for sleeping-mats and hearths. The floor is painted with red ocher, and varnished over. The walls are painted red on the inside, yellow, red, and black on the outside. The

exterior walls are further decorated with regular designs in shells, and the gables are elaborately carved or inlaid with human, often erotic, figures. Painted carvings on the crossbeams of the interior framework portray special events in the history of the community.

The men's houses are erected with great care and elaborate ceremonial, by the contributions and labor of the entire community. They usually serve as assembly and social halls for the men and as sleeping quarters for the bachelors. Most communities formerly had several such halls, but few new ones are built today, and existing ones are falling into disuse.

Distinct from other houses is the cult-house, a taboo place where the priest conducts his rites but seldom sleeps. It has plank floors, and is usually divided into three rooms. In one of these are kept the ghost-canoe and other religious paraphernalia; another is the place for offerings. Cult-houses are frequently two stories in height, and their decorative carvings and paintings are usually very distinctive.

Menstruation and maternity huts, usually poorly constructed, are known throughout the Palau district. They are under strict taboo to women not confined there, as well as to men. Their care and repair are the charge of certain designated old women. Sleeping-mats, a hearth, and cooking equipment constitute the chief furniture; phallic designs are the principal adornment. Some communities have separate quarters for maternity cases.

Open-air dance floors are a feature of Palau communities. The floor is of wood and is supported one to three feet above the ground on short posts. In dimensions it is about eight feet wide and from 40 to 100 feet long. Only one end of the floor is covered by a roof, which rests on bamboo posts.

Furniture. The furniture in native houses is simple, consisting principally of sleeping-mats, wooden and coconut-shell bowls, earthenware cooking pots, woven baskets, and wooden racks. Metal cooking utensils, oil lamps, and western furniture are used in many communities today, but they have by no means displaced the native utensils and furniture. Box-bins for the storage of miscellaneous personal and household items, a western introduction, are commonly found in Palau dwellings.

Modern Buildings. The principal buildings in modern style are schools (see 285), churches (see 154), hospitals (see 253), government offices and other public buildings (see 285), factories, warehouses (see 295), shops, homes of Japanese residents, and an increasing number of native dwellings. Wood is still the prevailing material, although a few structures are of stone, brick, or concrete. Frame construction with a corrugated iron roof is common.

Government Housing Program. The modernization of native housing, which made little progress during the German period, has been actively promoted by the Japanese administration. Among the factors which have spurred this movement have been the bad sanitary conditions, which have appalled the fastidious Japanese, the depopulation of Yap, which has made them defensive about their administration, and periodic typhoon damage, which has forced them to take measures of relief and reconstruction.

The first attempt to encourage modernization was through education and example. An Apprentice Woodworkers' Training School was established at Koror in 1926 to instruct natives in carpentry (see 262). Much was expected from the example of new government buildings and modern Japanese residences. On Yap the administration even built a few model houses and invited visits of inspection by natives from other islands. On the whole, however, these methods made little impression on the natives.

A more successful approach was through subsidies. For many years the South Seas Government has made an annual grant of at least ¥ 5,000 (it was ¥ 8,547 in 1937) for the "improvement of native manners and customs" in the mandated area. This fund has been expended in part to improve the water supply by subsidizing the construction of public and private water tanks and the modernization of the roofs of native houses (see 121, 257). In part it has been used for the betterment of sanitation by encouraging the installation of latrines (see 256) and public baths (see 285). It has been employed in part, also, to aid in the construction of improved public assembly halls and private dwellings. Similar assistance is given to new Japanese settlements, the subsidy for which amounted to ¥ 26,916 in 1937.

In 1933 a semi-compulsory feature was added to the program of modernization on Yap. As a result of this feature and of continued subsidies, between 25 and 40 improved native houses were built each year. In order to qualify for a government subsidy, which amounted to one half of the cost of construction, these houses had to meet certain specifications. They had to have corrugated iron roofs, genuine doors and windows, raised floors, and beds. It was reported that a total of 165 such houses had been erected by the end of 1937. There is evidence that the entire program has resulted, directly or indirectly, in a substantial improvement in native housing.

A special aspect of the government housing program has been the construction of improved assembly halls in native villages. This had its origin in the great typhoon of May 27, 1927, which destroyed 80 community meeting houses in Palau. With part of the special relief fund of ¥ 10,983, half of these buildings were rebuilt with improvements. In 1937 the South Seas Government expended ¥ 10,000 for community halls on a special budgetary appropriation.

324. Mine and Forest Production

Mining. The major industry of the Western Caroline Islands is mining, and the principal product is phosphate. Aluminum ore has recently been exploited. Other mineral deposits include manganese ore, earthy bituminous coal, and lignite, found respectively on the northern, southern, and western parts of Babeltuap Island. There is a deposit of fire clay, owned by Mr. Morishige Sakugawa, at Nerasaka in Palau. In Yap there is an iron deposit, owned by the Nanyo Aruminyumu Kogyo Kaisha, and also a small asbestos deposit, but it is not known whether either is being worked.

In accordance with the South Seas Mining Regulations of 1937, persons desiring to operate mines must submit to the Governor an application and a statement of the plan for production. Holders of mining rights are taxed at the rate of ¥ 1.80 per annum for every hectare of mining lots. In addition, they are subject to a tax of one per cent of the value (determined by the Governor) of the products of the mine. In 1937, mining taxes totaling ¥ 15,785 were paid by eight persons in the Palau district, and ¥ 1,304 by four persons in the Yap district. In the same year 446 persons (58 Japanese and 388 natives) were reported as engaged in the mining industry in the Palau district. Two Japanese were so engaged in the Yap district.

Phosphate Production. The unmined deposits of phosphate in the Western Carolines have been estimated to total between 2,500,000 and 3,500,000 tons. They are located mainly on Angaur Island, esteemed by the Japanese as the "phosphate treasure-house" where the "birds cached a fortune one million years ago for the special benefit of Japan." In 1903, as a result of prospecting for mineral resources in the Western Carolines, German engineers reported to their government the discovery of large deposits of guano phosphates on Angaur. Five years later the German Government granted the Deutsche Südsee-Phosphat-Aktien-Gesellschaft the right to mine phosphate on Angaur, and the exploitation of the deposits was begun in the following year. Work was started with 23 Europeans, 56 Chinese artisans, and about 250 natives. On April 6, 1909, the first locomotive ran between the anchorage and the mine. Because of the high surf and steep coast, an iron loading bridge had to be erected, and buoys to which freighters could be moored had to be anchored at a depth of more than 200 meters. Production of phosphate increased from 8,761 tons in 1909 to 54,000 tons in 1913.

When the islands were occupied by Japan in 1914, the mines were closed. Soon thereafter, however, they were temporarily intrusted to a Japanese corporation under the supervision of the Japanese Navy. In 1922, when the South Seas Government was formed, Japan purchased all the property and rights of the former German owners for the sum of ¥ 1,739,960. The administration of the mines was then turned over to the South Seas Government, which was permitted to retain the profits as an indirect subsidy toward the administration of the islands.

The South Seas Government established a mining station to carry on the exploitation of the mines under the direction of the Governor. In 1935 the government employees working in the Angaur mines included a superintendent, 5 assistant experts, 16 clerks, 440 mine workers, 13 laborers, and 5 additional employees.

With the establishment of the Nanyo Takushoku Kaisha (see 327) toward the end of 1936, the South Seas Government transferred the phosphate mines to this company in exchange for stock. The details of this important transaction are not reported, but the immediate result was a notable decline in government revenue from phosphate mining. In 1936, when this revenue was reported under income from government enterprises, it amounted to ¥ 2,078,016, or a net return of ¥ 1,738,136 after deducting expenses of ¥ 339,880. In 1937, when the revenue was reported under dividends from the Nanyo Takushoku Kaisha, it amounted to only ¥ 632,760, or ¥ 1,105,376 less than the net income from phosphate operations in the previous year. What compensating gain, if any, the government may have derived from this transaction is not apparent from the inadequate available information.

The principal phosphate excavation is at Gabayanga in the north central part of Angaur where the deposits vary in depth from three to six feet. The total reserves of this mine were estimated in 1940 to be 1,650,000 metric tons of high-grade ore, and 5,000,000 tons of lower grade ore. The high-grade deposits yield 39 per cent of phosphorus pentoxide. The Angaur mine is the only one on the Western Carolines reported to be equipped

with loading facilities. The phosphate powder is shoveled directly from the mine into small dump-carts, which run to the anchorage on portable tracks. There are estimated to be about 12 miles of phosphate railroad on the island. The refinery and storehouse are at Saipan village on the west coast. From the storehouse the phosphate is brought out on a conveyor belt to a large automatic loading arm extending over the anchorage, where it drops through a rubber tube into the hold of the ship taking on cargo. The loading capacity is about 3,500 tons per day. Reports indicate another loading pier on the northeastern side of the island.

The phosphate on Peleliu Island in Palau is mined by the Nanyo Kohatsu Kaisha (see 327). The deposits, which are located at Asais, are similar in quality to those on Angaur, but are nearly exhausted. In 1940, reserves were estimated at only 40,000 tons. The phosphate crushing plant is located at Akalokul, which is some distance from Asais.

The phosphate on Tobi is also mined by the Nanyo Kohatsu Kaisha. The deposits, estimated at 24,000 tons are similar in grade to those on Angaur and on Peleliu. There are also phosphate deposits on Sonsorol and Pul. They are owned by Nanyo Takushoku Kaisha, but those on Pul were not being mined in 1940.

The principal phosphate deposits in the Yap district are on Gaferut and Fais. The former are owned by the Nanyo Boeki Kaisha, the latter by the Nanyo Takushoku Kaisha. The Fais deposits are estimated to exceed 400,000 tons and are reported to be of excellent quality. The major difficulty in exploiting them is the lack of good loading facilities.

The number of metric tons of phosphate produced in the Western Carolines during 1937, 1938, and 1939 is presented in the following table:

	1937	1938	1939
Angaur	91,490	104,186	143,420
Fais	-	14,222	43,821
Gaferut	198	747	-
Peleliu	26,006	28,566	26,303
Tobi	1,500	-	-

In 1937 the phosphate produced in the Western Carolines was valued at ¥ 3,301,130.

The only industry in the Western Carolines which recruits and employs labor on any large scale is the phosphate mining on Angaur Island. Special regulations have been enacted for the protection of these laborers (see 332). For work requiring a certain degree of skill, Japanese and Chinese are employed as well as a few of the more alert Chamorros. For unskilled labor, such as the collection and transport of phosphate, Chamorros and other island inhabitants are employed exclusively. Native labor is secured under the contract system, the recruiting being done by local government officials, principally the native chiefs, who receive a per capita commission. In 1937, 318 Japanese and 388 natives in the Palau district and one Japanese in the Yap district were officially classified as miners by occupation. This report very possibly underestimates the number of natives actually employed in the phosphate mines, since another source indicates that 700 natives were engaged in mining in the Western Carolines in 1936.

Aluminum Production. Deposits of aluminum ore (laterite) have been discovered on Yap and on Babelthuap Island in Palau. The latter deposits have been exploited in recent years by the Nanyo Aruminyumu Kogyo Kaisha. In 1938, 30,000 tons of laterite ore were produced on Babelthuap, yielding 7,500 tons of aluminum. According to a Japanese report in 1939, 100,000 tons of ore were expected to be mined in that year, with an anticipated yield of 25,000 tons of aluminum.

Quarrying. Stone money was formerly quarried on Babelthuap Island in Palau by natives from Yap (see 351). There is no report of modern quarrying operations on any of the islands of the Western Carolines, although a certain amount of stone is very possibly dug for road construction.

Forest Products. The Japanese administration has recognized the economic importance of the forests in the area, particularly the mangrove trees on which the people of Palau depend for their local supply of firewood and charcoal. In 1927 the Industrial Experimental Station, which was succeeded in 1936 by the Tropical Industries Research Institute, initiated large-scale experiments on 100 hectares of forest. In March, 1928, a plot of 20 hectares was chosen on Babelthuap Island in Palau for experiments in afforestation. As a result of its investigations, the Station reported that teak, Ceylon cinnamon, ironwood, rosewood, mahogany, and acacia appeared promising for afforestation purposes. In 1931 the Station was reported to be conducting experiments on methods of drying copra, on means of preventing the decomposition of timber, and on methods of combating timber infections. In 1936 a program of reforestation was initiated on Palau.

The official statistics on forest production in the Western Carolines for 1937 are presented in the following table:

	Palau District		Yap District	
	Quantity	Value	Quantity	Value
Lumber				
Tamana	14 cu.m.	¥ 59	44 cu.m.	¥ 3,853
Ukaru	25	103	4	314
Red sandalwood	113	466	-	-
Ammui	121	406	-	-
Brachius	7	24	-	-
Breadfruit	-	-	2	9
Kashimoroku	149	503	-	-
American pine	37	95	-	-
Mangrove	144	431	25	176
Miscellaneous	65	151	-	-
Total	675	2,238	75	4,352
Fuel				
Firewood	7,177 cu.m.	¥ 1,292	156 cu.m.	¥ 277
Charcoal	451,530 kg.	14,449	266,310 kg.	8,522

In 1937 it was officially reported that 45 Japanese and 181 native males were engaged in forestry in the Palau district and that 21 Japanese males were so engaged in the Yap district. In addition, one male foreigner was employed in this industry in Palau.

It is interesting to observe that the lumber for the construction of the Shinto Shrine in Palau in 1938 was not obtained locally but was imported from Kusaie in the Eastern Carolines.

325. Food Industries

Commercial Fishing. In recent years commercial fishing has been developed into the leading industry in the Western Carolines. The Japanese recognized many years ago that, while the economic possibilities of the islands were limited by virtue of their small land area, those of the sea were not, and they have bent every effort to exploit the marine products of the adjacent waters. The South Seas Government has planned and carried out various investigations with respect to types of commercial fish, oceanographic conditions, fishing methods, artificial breeding and hatching, and manufacturing processes. A start was made in the Palau district in 1925, with the building of a small ship equipped for marine investigation. In 1930 a Fisheries Manufacturing Plant was established at Koror in Palau to study the possibilities of such manufactured marine products as dried bonito and tunny, canned tortoise, boiled tunny, and canned fish boiled in oil. The Marine Products Experiment Station (see 213) was established at Koror in 1931. Its operating expenses, which are met by the South Seas Government, amounted to ¥ 57,871 in 1937.

Commercial fishing is centered almost exclusively in the Palau district. Aside from shellfish, which is the marine product of greatest value in the area but for which the primary market is for the shell (see 326), the principal product is bonito, of which 13,775 metric tons, with a value of ¥ 1,152,125, were caught in 1937. The total catch for that year is shown in the following table:

Product	Yap District		Palau District		Total
	Metric tons	Value	Metric tons	Value	
Bonito	-	-	13,774.7	1,152,125	1,152,125
Tunny	-	-	189.8	26,127	26,127
Mackerel	-	-	2.3	374	374
Horse mackerel	1.3	341	4.7	1,153	1,494
Cybium niphonium	-	-	8.1	1,652	1,652
Gray mullet	-	-	3.5	1,412	1,412
Shark	-	-	5.9	293	293
Other fish	15.3	3,222	25.8	4,055	7,277
Shellfish**	-	14,405	*	3,783,012	3,797,417
Trepang	-	-	6.4	257	257
Total	16.6	17,968	14,021.2	4,970,460	4,988,428

*Reported in units rather than by weight.
**Taken primarily for the shell.

In contrast to subsistence fishing (see 313), commercial fishing is carried on mainly by Japanese. Only 71 natives, all in the Palau district, were reported as engaged primarily in the fishing industry in 1937, as compared with 1,975 Japanese, including 1,400 men and 572 women in the Palau district and 3 men in the Yap district. Commercial fishing is largely done offshore with modern gear and modern craft, especially power boats (see 294).

The South Seas Government has given substantial financial encouragement to the development of commercial fishing. An ordinance issued in 1935 authorized the Governor to grant subsidies to individuals, guilds, or corporations to defray the cost, in whole or in part, of the following:

Construction or improvement of fishing vessels.
Manufacture or purchase of new and improved fishing implements.
Institution of improved methods of fishing or of disposing of the catch.
Construction or equipment of hatcheries.
Purchase or collection of desirable fish eggs or aquatic seedlings and propagation of young fish or marine plants.
Construction or equipment of processing plants.
Research or experimentation on the manufacture, marketing, or sale of marine products.
Construction or equipment of ice-manufacturing plants, refrigerator ships, or cold storage facilities.
Divers services performed by marine products guilds in connection with research, conservation, relief, marketing, and the provision of public facilities.
Other activities recognized as deserving assistance.

Applications for subsidies must be accompanied by written statements outlining the enterprise, furnishing plans and specifications, detailing the costs, estimating probable income and expenditures, and giving other pertinent information. Provision is made for the control and supervision of recipients and for the making of regular reports.

The subsidies granted in support of the fishing industry in the Palau district in 1937 amounted to ¥ 72,197, distributed as follows:

Fishing equipment expected to reduce the cost of operations	¥ 20,517
Construction of a ship for marine research	30,000
Purchase of land for erection of lodgings	9,000
Establishment of a cannery	5,680
Unloading equipment	4,000
Office expenses	3,000

Processing of Sea Foods. Since most of the products of commercial fishing are exported, it is first necessary to process them, which is usually accomplished by drying rather than by canning. The principal product is dried bonito. The manufacture of dried bonito on a commercial scale was initiated in Palau in 1924, and exports of dried bonito to Japan began in 1925. In the drying process, the fish is cleaned, boiled, boned, dried over a fire for a few days, smoked, and then placed in damp sheds to mildew. The mildew is wiped off and the fish placed in the sun. Again the fish is allowed to mildew, and the procedure is repeated until the mildew ceases to form, when the product, a hard, dark red, and highly nourishing substance, is packed for shipment. Dried bonito is mainly exported to Japan, where it is greatly prized as a condiment and as an ingredient of soups. Exports from the Western Carolines for the year 1937 amounted to 1,907 metric tons valued at ¥ 2,026,812 all of which was shipped from the Palau district.

The tunny industry was begun in 1924, and has been confined to the Palau district. It has lagged behind the production of dried bonito largely because of the inadequate development of canning and refrigerating facilities. Dried trepang, which is much in demand by the Chinese for use in gelatinous soups, has been produced in moderate amounts ever since the Spanish period. The amount manufactured varies considerably from year to year, depending upon the catch and fishing restrictions. The trepang industry is also centered in the Palau district.

The Yap district produces no manufactured marine food products. The statistics for the Palau district in 1937 are presented in the following table:

	Metric tons	Value
Dried bonito	2,358.4	¥ 2,410,684
Dried tunny	318.5	327,925
Dried trepang	5.1	1,470
Canned fish	50.2	9,679
Others	*	472
Total		2,750,230

*Reported in units rather than by weight.

Starch Production. The production of starch in the form of tapioca has recently been developed by the Japanese into an important industry. The cultivation of manioc, from which tapioca is manufactured, is confined almost entirely to the Palau district, where it was the most important agricultural product from the standpoint of value in 1937. There were 365 hectares of manioc under cultivation in this district in 1937, producing 4,693 metric tons of roots valued at ¥ 140,798. When experimentation showed that unimproved manioc yielded only 16 per cent starch, Java manioc, yielding 35 per cent starch, was introduced. The starch enterprise is operated by the Nanyo Kohatsu Kaisha, which uses lands leased from the government and labor imported from Japan and the Ryukyu Islands. Mills run by this company grind the roots into a white powder, which is exported to Japan for use in the cake and confection industry. For unexplained reasons, however, no figure is given for starch in the official report of exports from the Palau district in 1937 (see 345).

Pineapple Growing. The South Seas Government has recently given considerable encouragement to pineapple production in the Palau district. In 1937 it granted subsidies totaling ¥ 18,548 for replanting and new planting of land to this crop. In that year 401 hectares of land were devoted to pineapple cultivation, and the production amounted to 1,146 metric tons, valued at ¥ 57,299. Various experiments have been conducted in the canning of pineapples, but the canning industry is still in its infancy.

Liquor Manufacture. The manufacture of alcoholic liquors was started on Palau in 1929. In 1937, two concerns on Palau and one on Yap held liquor manufacturing licenses. The liquor is probably made for local consumption and from locally grown sugar and fruit.

Miscellaneous Food Industries. In addition to the products already mentioned there are various food products which undergo simple processing. These include rice, bean curd, sake, soy bean sauce, coconut honey, and various non-alcoholic beverages. The following table presents the official statistics for the production of miscellaneous industrial food products in the Western Carolines (all in the Palau district) for 1937:

Product	Quantity	Value
Canned goods	648,173 cans	¥ 150,461
Rice	2,894.3 metric tons	58,118
Bean curd	8.2 " "	2,214
Sake	141,891 liters	46,448
Soy bean sauce	569 "	187
Coconut honey	5,810 "	2,315

326. Miscellaneous Industries

Copra Production. The natives of the Western Carolines were using coconuts for food, and were extracting oil from the nuts, long before the advent of Europeans, but they had never produced in excess of their subsistence needs. In the middle of the nineteenth century, however, when traders arrived with enticing goods from Europe and America, the natives soon learned that coconuts were their most marketable commodity. To obtain more foreign goods, they planted additional palm trees and thus produced a surplus of coconuts for exchange. The Germans, as their commercial interest in copra increased toward the end of the century, encouraged the natives to plant still more trees (see 133). Under the Japanese administration, with added stimulation in the form of subsidies, the natives have been induced further to expand their planting of palm trees. Copra production, though no longer overshadowing other economic enterprises, is still one of the principal industries in the Western Carolines.

The production of copra is predominantly a native industry, and the natives have come to depend on it for economic prosperity and to rely on it for cash or the equivalent in trade. It is not surprising, therefore, to find that practically every native family has its own coconut grove, from which it derives both subsistence and a surplus for trade. In 1937, the land area reported to be under cultivation to coconuts in the Western Caro-

lines totaled 5,324 hectares, 3,350 in the Yap district, and 1,974 in the Palau district. Since lands owned by the government totaled only 590 hectares in the Yap district, and 117 in the Palau district; it is apparent that the bulk of the coconut crop is derived from privately owned lands, for the most part native owned.

In the entire area, in 1937, there were 1,060,536 coconut trees, of which 489,580 were producing; these yielded 22,231,574 nuts valued at ¥ 666,947. Yap district had a total of 812,762 trees, of which 322,223 were in production, yielding 15,217,097 nuts valued at ¥ 456,513. The Palau district had 297,774 trees, of which 167,357 were in production, yielding 7,014,477 nuts valued at ¥ 210,434. The 570,956 coconut palms not yet bearing in 1937 were expected to increase coconut production substantially by 1944.

Virtually all exports of copra go to Japan. In 1937, the recorded exports of copra from Yap and Palau to Japan aggregated 1,407 metric tons, probably more than the total copra production for the year. That the quantity exported exceeds the total production of copra in the Western Carolines is quite possible, since it is known that imports of copra into Palau from places outside of the mandated area have totaled as much as 361 metric tons (1937). Figures on local consumption are not available, but it seems likely that the imported copra was re-exported and doubtless included in the record of total exports.

The techniques of coconut cultivation are simple, and have been described elsewhere (see 311). For the production of copra, the nuts are allowed to ripen on the trees until they fall to the ground, and they are then gathered up. The ripe nuts are opened, and the meat is removed and placed on drying racks under sheds with open sides and corrugated iron roofs. The roofs protect the copra from rain, and also transmit the heat of the sun. Sun-drying produces the best copra, and is used throughout the Yap district and wherever possible in the Palau district. In many parts of the latter district, however, the cloudiness and humidity (see 112) are too great to permit adequate drying through the heat of the sun alone, and special sheds are built in which the copra is dried by fire.

To increase the quantity and to improve the quality of copra production, the South Seas Government has offered various subsidies to the natives. In 1922, the following subsidies were initiated:

Up to ¥ 20 for planting from 100 to 200 coconut trees on plots of land larger than one hectare (2.47 acres) in size.

Up to ¥ 10 for thinning, complementary planting, and weeding on groves of more than one hectare containing from 100 to 200 coconut palms.

A third subsidy, providing up to one fourth of the expense for erecting a new drying shed, has been in effect since 1931. In 1937, under this program, a total of ¥ 2,460 in subsidies was paid in the Western Carolines. Of this amount, ¥ 2,448 was paid to native growers, who received ¥ 600 for 245 acres of grove improvement and ¥ 348 for 29 sun-drying copra sheds in the Yap district, ¥ 1,200 for 490 acres of grove improvement and ¥ 300 for fire-drying sheds in the Palau district.

Cordage Manufacture. The natives of the Western Carolines have long used fibers of the coconut husk in the making of lines and cordage, and they have used the fibers of banana and of various basts, such as hibiscus, for twines and braids (see 322). Since most of the native cordage is made from the fibers of the coconut husk, the cordage industry is closely allied to copra production. It is reported that the Tropical Industries Research Institute has been investigating the cordage industry with an eye to introducing improved methods of production. If this is true, it is possible that the South Seas Government may be contemplating subsidizing, systematizing, and supervising the industry for development on a large scale. Although figures on cordage production for the Western Carolines are not at present available, the inference from export data is that this industry is well entrenched, at least in Palau. In 1937, cordage valued at ¥ 3,762 was exported from Palau to Japan.

Shell Industries. The production of commercially valuable shells, especially for use in the manufacture of buttons, has in recent years become the most important single industry in the Western Carolines, at least in point of value of exports. Shell is produced predominantly in the Palau district, and is exported almost exclusively to Japan.

The collection of takase (nilotic-top shell), hakucho (white oyster shell), and kokucho (black oyster shell) is a seasonal occupation in the fisheries industry (see 325). Every person engaged in the collecting of shells must obtain a fishing license. In 1937, the number of fishing licenses totaled 2,046, of which 1,972 were issued to Japanese in the Palau district, 3 to Japanese in the Yap district and 71 to natives in the Palau district. Among those holding licenses in Palau were 572 women. Just how many persons were engaged in the actual collecting of shells in that year is not known, but in 1932 official

reports listed 22 Japanese and 244 natives as specifically engaged in shell collecting. The recent trend toward Japanese control is noteworthy.

Of the production of takase or nilotic-top shell in the Western Carolines, the Palau district accounts for nearly 75 per cent and the Yap district for the rest. The quantity (in kilograms) and value of the production in this area during past years are shown in the following table:

Year	Quantity	Value
1927	106,387 kg.	¥ 44,280
1928	143,429	59,180
1931	155,065	48,609
1932	186,375	62,349
1933	136,785	73,090
1934	144,866	134,386
1935	87,099	80,379
1936	58,282	57,734
1937	87,255	89,321

Although the production of hakucho greatly exceeds that of takase or any other shell, specific information is lacking prior to 1937. In this year, 4,265,594 kilograms of hakucho, valued at ¥ 3,704,595, were produced in the Palau district. Kokucho, like hakucho, is apparently produced only in the Palau district, where the 1937 production totaled 9,479 kilograms, valued at ¥ 352. In the same year, miscellaneous shells totaling 4,163 kilograms and worth ¥ 3,349 were produced in the Palau district.

Another shell industry in the Western Carolines is the production of cultured pearls. Records indicate that Palau is the only producing area in the mandated islands, and that industry is exclusively in the hands of Japanese. One company, which operates in Koror, is believed to have a monopoly. The practice of this company is to harvest and store its pearls each year, until enough have been accumulated for export. During the six-year period, from 1931 to 1936, exports of pearls are recorded only for 1932, when 7,055 pearls, valued at ¥ 35,745, were exported. The recorded production during the same six years was as follows:

Year	Number of Pearls	
1931	4,106	¥ 21,000
1932	2,949	15,745
1933	-	-
1934	10,776	32,328
1935	1,000	3,000
1936	-	-

Still another shell industry is the production of tortoise shell. Since early times the natives of the Western Carolines have used tortoise shell in many ways--for fishhooks, special blades, and receptacles. As trade developed with Europeans, tortoise shell became an item of barter for cloth, tobacco, and other articles. It is still used by the natives for various manufactures and for barter. It is difficult to estimate the total production of tortoise shell in the Western Carolines, since native production would not necessarily be recorded with the commercial production of the islands. Nevertheless, commercial production of tortoise shell, from hawk-bill turtles, is sufficient to be listed as one of the industries of the area. Production is small in the Yap district, and none was reported in 1937. In the same year, the Palau district produced 36 kilograms, valued at ¥ 324, and articles manufactured from tortoise shell aggregated 1,238 pieces valued at ¥ 1,770.

Charcoal Production. Charcoal has been produced in the Western Carolines for some time, and in 1936 the Tropical Industries Research Institute at Koror undertook to study the methods of producing it, with the object of simplifying them. In 1937, 717,840 kilograms of charcoal, valued at ¥ 22,971, were produced in the Western Carolines, 451,530 kilograms in the Palau district and the remainder from the Yap district. In the same year, 228,635 kilograms were exported to Japan from Yap, and 29,880 kilograms from Palau, with a total value of ¥ 11,097.

Manufacturing Industries. The manufacturing industries of the Western Carolines are centered almost entirely in Palau. Here there were, in 1937, an ice-manufacturing plant operated in connection with electric power production (see 284), a factory for the manufacture of soy sauce, fish-processing and canning factories (see 326), liquor-manufacturing plants producing 142,000 liters of alcoholic beverages, three fireworks factories, and printing and publishing establishments employing 24 Japanese men.

Nanyo Takushoku Kaisha. The Nanyo Takushoku Kaisha (South Seas Exploitation Company) has recently assumed a leading role in the development of the resources of the mandated area. It was founded on November 27, 1936, with an initial capitalization of ¥ 20,000,000. The South Seas Government took a majority interest in the stock by turning over to the newly formed company its mining rights and properties on the islands of Angaur and Fais, which were valued at ¥ 10,546,000. The other principal investors were the Nanyo Kohatsu Kaisha (see below), the Mitsui Bussan, the Mitsubishi Goshi, the Nippon Yusen Kaisha (see below), and the Toyo Takushoku Kaisha.

The company maintains its head office on Koror in Palau, and has a branch in Tokyo. Its president is appointed by the imperial cabinet upon recommendation of the Overseas Minister (presumably today the Minister of Greater East Asia). In 1940, Baron Ryutaro Fukao was succeeded as president by Keishiro Oshima, who had been a trustee of the Toyo Takushoku Kaisha. The power of supervising the company's affairs is vested in the Imperial Government, which has given it the right to issue South Seas debentures to the amount of three times its paid-up capital.

From the beginning, the Nanyo Takushoku Kaisha has been interested primarily in the mining of phosphates. It assumed the Angaur mines of the South Seas Government at the end of 1936, and in 1937 it laid plans for the development of the phosphate deposits on Fais. It ships its product from the islands f.o.b., selling it to the Dai-Nippon Rinko Kaisha (Japan Phosphate Mining Company). Its receipts from the sale of phosphates in 1940 amounted to ¥ 8,445,000. It can ship only as much ore as can be accommodated in the ships available, and in 1941 it was reported to be hampered by a shipping shortage, despite the priority rating given to phosphates as one of the 15 vital import commodities under the Transportation Act of that year.

The Nanyo Takushoku Kaisha also manages directly more than 20 affiliated or subsidiary companies, in which it had a total investment of ¥ 3,631,000 in 1938. These companies are engaged in such activities as bauxite mining, the generation of electric power and light, pineapple raising, pearl fishing, and the processing of marine products. Some of these affiliates, as reported in 1938, are listed in the following table:

Name of Company	Interest	Capital	Number of Shares	Shares Held by N.T.K.
Pacific Pearl Co.	Pearl fishing	¥ 1,200,000	24,000	23,500 (97%)
Japan Pearl Co.	Pearl fishing	1,500,000	30,000	14,875 (50%)
Nantaku Pineapple Co.	Pineapple canning	2,000,000		20,860 (52%)
Nanyo Aluminium Mining Co.	Mining and refining of bauxite	2,000,000	40,000	15,250 (38%)
Nanyo Electric Co.	Supply of power and light	500,000	10,000	5,000 (50%)
Nanko Marine Products Co.	Fishing, canning, and refrigeration	2,700,000	54,000	26,190 (49%)

The company has proved financially successful. In 1937 its net profits, exclusive of sinking fund deductions, were 22.3 per cent or ¥ 3,573,000, and it paid a dividend of six per cent, despite a reduction of one per cent from the dividend rate of the preceding year instituted because of the shipping shortage. An abbreviated financial statement for 1940 is shown in the following table:

	First 6 Months	Last 6 Months
Receipts		
Phosphate sales	¥ 4,135,000	¥ 4,310,000
Return on investments	64,000	227,000
Other receipts	210,000	192,000
Total	4,409,000	4,729,000
Expenditures		
Operating expenses	2,406,000	2,474,000
Other disbursements	332,000	353,000
Total	2,738,000	2,827,000
Profit (before sinking fund and dividend payments)	1,671,000	1,902,000

In 1941 an analyst of the company's affairs recommended that, in view of the excessive dependence upon phosphate production as a source of income, the company lay greater emphasis upon its other activities, many of which had not yet become profitable, and that it directly undertake other types of industrial development. It was also suggested that it merge with the Taiwan Takushoku Kaisha (Formosa Exploitation Company). The difficulties of effecting such a merger were foreseen, however, and apparently it has not been realized.

Nanyo Kohatsu Kaisha. In 1921, two pre-existing Japanese firms, the Nishimura Takushoku Kaisha (Nishimura Exploitation Company) and the Nanyo Shokusan Kaisha (South Seas Production Company) were amalgamated to form the Nanyo Kohatsu Kaisha (South Seas Development Company). The initial capitalization of the new company was ¥ 3,000,000, but this had increased to ¥ 20,000,000 by 1933 and to ¥ 40,000,000 by 1938. The powerful Toyo Takushoku Kaisha (Oriental Exploitation Company), which was instrumental in organizing the new firm, took more than 50 per cent of the original shares and has continued to hold a controlling interest. The Nanyo Kohatsu Kaisha was established to develop the sugar industry in Saipan, and, sugar, with by-products such as alcohol, has remained its principal enterprise. However, it owns and works the phosphate deposits on Peleliu in the Palau district, and in 1937 it was reported to be making preparations for the development of the phosphate mines in Tobi (see 324). In 1938 the Nanyo Kohatsu Kaisha was ordered to operate a steamer once a year between Palau, Yap, Truk, and their respective outlying islands (see 294). The company also engages in a number of subsidiary activities such as ice manufacture, fishing, and agricultural enterprises (see 325, 326). The company maintains its head office in Saipan and a branch office in Tokyo, and in 1938 it was reported to have nearly 40,000 employees.

Nanyo Boeki Kaisha. The Nanyo Boeki Kaisha (South Seas Trading Company) was formed in 1906 by the amalgamation of two earlier Japanese firms, the Murayama Shokai and the Nanyo Boeki Hioki Kaisha. In 1914 it fell heir to the extensive interests of the Jaluit Company. In 1933 the company had a paid-up capital of ¥ 2,000,000, with 40,000 shares of stock and 482 stockholders. Of this amount, 15,132 shares, or enough to assure effective control, were held by the Kawasaki family, one of the leading banking and industrial families of Japan. The principal activities of the company are shipping, commerce, copra production, and fishing. In 1937, moreover, it was reported to be making preparations for the development of the phosphate deposits on Caferut (see 324). In 1922, the South Seas Government made arrangements with the Nanyo Boeki Kaisha to maintain regular steamer services between the principal islands of the mandated area, namely, Saipan, Yap, Truk, Ponape, and Jaluit, and the outlying islands of the several districts (see 294). Of these five lines only one, the Yap Isolated Isles Line, provides shipping services in the Western Carolines. The company also purchases copra and sells imported products at a series of branch offices and trading stations. It maintains two branch offices in the Yap district, one on Faraulep and one on Lamotrek, managed respectively in 1934 by Shinji Tamada and Onji Yamata.

Nippon Yusen Kaisha. A fourth large Japanese company active in the Western Carolines is the Nippon Yusen Kaisha (Japan Mail Steamship Company). This important shipping firm operates four steamship lines in the mandated area, of which the Western Line and the East-West Line touch ports in the Western Carolines (see 294). The company receives a subsidy from the South Seas Government, but it is not engaged in local business enterprises.

Other Japanese Companies. The Nanyo Aruminyumu Kogyo Kaisha (South Seas Aluminum Mining Company), an affiliate of the Nanyo Takushoku Kaisha, exploits the laterite deposits of aluminum ore on Babelthuap Island in Palau. The Kokusai Denki Tsushin Kaisha (International Electric Communication Company) operates the radio-telephone service between Koror and Tokyo.

According to Japanese corporation law, business organizations are classified into three categories: (1) gomei kaisha, general partnerships with unlimited liability, usually comprised of a few related individuals; (2) goshi kaisha, joint-stock partnerships with limited liability, in which the shares are usually closely held; and (3) kabushiki kaisha, joint-stock corporations, usually with limited liability and with widely distributed shares. All of the afore-mentioned companies are of the third type. In 1937, no companies of any of the three types were registered in the Yap district, but in the Palau district there were two of the first category, eight of the second, and 31 of the third. The fees prevailing for various corporate acts are enumerated under 227.

Non-Japanese Companies. The Burns Philp Company of Australia and a few British and American companies attempted for a time to continue trading in the islands after the Japanese occupation in 1914. All had withdrawn, however, by 1922, since which time foreign commercial interests in the area have been practically non-existent.

Small Entrepreneurs. There are a considerable number of independent Japanese traders, especially in the islands and districts where the Nanyo Boeki Kaisha does not maintain trading stations. In addition there are many small shopkeepers who cater primarily to the Japanese population. Besides stores selling merchandise, there are specialized shops in the larger towns, e.g., butcher shops, fish markets, drugstores, and liquor shops. Catering to amusement interests there are geisha houses and theaters but allegedly no saloons, although liquor is sold at hotels and restaurants.

Service enterprises are fairly numerous in the larger settlements. They include tailors, dressmakers, masseurs, barber shops, restaurants, hotels, public baths, and laundries, and scriveners.

The charges prevailing in the Western Carolines in 1937 for some of these services are listed in the following table:

	Yap District	Palau District
Barber shop fees		
Hair cut	¥ 0.35	¥ 0.60
Shave	0.20	0.30
Lodgings by the month		
Maximum charge	30.00	-
Ordinary charge	25.00	-
Accommodations by the day		
Maximum charge	3.00	7.00
Ordinary charge	2.50	3.50
Minimum charge	-	1.00
Sewing		
Japanese garments by the garment	1.00	-
Laundry		
Foreign garments by the garment	0.30	-
Japanese garments by the garment	0.30	-

An ordinance promulgated by the South Seas Government in 1922 offers subsidies up to the total cost of equipment and estimated business expenses for the first year to persons engaging in selected service enterprises, such as laundering, shoemaking, hairdressing, tailoring, and hotelkeeping. The subsidies of this type granted in 1937 were the following:

	Yap District	Palau District
Establishment of hotels	¥ 2,850	¥ 1,600
Establishment of vegetable markets	-	5,000
Equipment of refrigeration plant	-	2,000
Equipment of ice-making plant	1,650	-
Business expenses	-	10,000

Small entrepreneurs, who are almost exclusively Japanese, usually operate as individuals, but in a few instances they are incorporated. One such entrepreneur is Morishige Sakugawa, who owns a deposit of fire clay at Nerasaka in Palau. Some indication of the number and distribution of small businesses is given by the official enumeration of those which were subject to police supervision in 1937, as listed in the following table:

Type of Business	Yap District	Palau District
Hotels	1	6
Restaurants (upper-class)	-	13
Restaurants (lower-class)	2	42
Commercial entertainment	-	1
Geisha girls	-	77
Fortune tellers	-	1
Liquor dealers	9	56
Beverage dealers	9	59
Barber shops	2	25
Masseurs	-	2
Second-hand stores	2	14
Pawnshops	-	1
Drugstores	-	3
Drug dealers (medicines)	6	33
Drug dealers (poisons)	-	4
Butcher shops	1	14
Slaughterers	1	4
Abattoirs	1	1
Dairies	-	2
Ice dealers	-	41
Carvers and sculptors	-	1
Scriveners	1	9
Boat renters	1	2
Ferry operators	-	11
Crematories	1	1
Gunpowder warehouses	-	2
Contractors	-	7
Electrical shops	-	1
Motors	2	36

Type of Business	Yap District	Palau District
Printing establishments	-	3
Factories	-	18
Liquor manufacturing	-	2
Fireworks manufacturing	-	3

33. LABOR

331. Labor Supply and Employment

Supply of Native Labor. The total supply of native labor can be estimated from the number of natives in the islands, which was reported to be 12,306 in 1937 (see 143). Of this number, however, 3,462 were under 15 years of age and 2,155 were over 50 years of age, leaving only 6,689 in the age group from 15 to 50. Moreover, the supply of able-bodied adults available for wage labor is severely curtailed by the fact that a great majority of the population are engaged in subsistence agriculture and fishing. It is probably significant that the Japanese, in constructing airfields and fortifications, are reported to have imported workers from the Okinawa prefecture in the Ryukyu Islands and from Korea, instead of depending upon native labor.

Supply of Immigrant Labor. The Japanese inhabitants of the Western Carolines, officially reported to number 11,391 in the Palau district and 572 in the Yap district in 1937, are employed for the most part in the extractive industries, administration, and petty commerce. The total number of Japanese had increased to 20,464 in 1939, and is undoubtedly much greater today. In addition to military personnel, many newcomers are reported to have been brought in, principally from the Ryukyu Islands, to work as day laborers on roads, airfields, and military installations. Such persons, if they remain, would constitute a potential labor supply. The number of non-Japanese immigrants in the islands is negligible (see 143), although there are unconfirmed reports of very recent importations of Korean laborers.

Employment of Natives. Of the natives who were gainfully employed in 1937, 6,003 or about 80 per cent were engaged in agriculture, mainly in subsistence farming and copra production. The natives otherwise employed included 388 phosphate miners and laborers, 181 forestry workers (possibly including laborers on coconut plantations), 115 public works laborers, 72 government employees, 71 fishermen, 52 communications employees, 38 transportation employees, and 37 domestic servants. The remaining 517 gainfully employed natives were scattered in their occupations (see 334). The character of the employment of the natives does not seem to indicate the availability of any large number as a labor reserve.

Labor Recruiting. Under the German administration moderate numbers of natives were recruited from the western islands, principally Tobi and Sonsorol, and sent to work for the copra traders on Yap. Under the Japanese administration the principal recruitment of natives has been for work in the phosphate mines on Angaur in the Palau district.

Japanese ordinances on the subject of recruiting specify only that no native younger than 15 years of age may be recruited, and that such rules as the officials in charge of the mine shall make must be approved by the Governor at Koror. In practice, the mining executives secure the approval of the district administrative officials for carrying on recruiting operations in a particular district, and these officials co-operate by advertising the offer of employment among the natives. The real work of recruiting the laborers is done by the native chiefs, who are spurred on by a commission of about 80 sen for each recruit they secure. When the desired number of recruits has been assembled in a particular district, a contract is made between the mining officials and the prospective laborers. This contract is simply a verbal agreement. The recruits must then pass a medical examination given by the staff of the government hospital in the district where the recruiting takes place. The labor contract is not considered officially approved for those who fail to pass the examination, and they are permitted to return home.

With these preliminaries completed, the mining officials arrange for the transportation of the natives to Angaur. For some of the laborers this involves a long journey from their homes, 200 miles for the natives from the Yap district, and 1,200 miles for those from the Truk district. Passage, including food and any other necessary expense, is provided by the mining company. The Branch Governor has the right to set the standard with regard to food, medical care, and accommodations on the transport ship.

One important distinction is made in the recruiting policy as applied to the two types of natives found in the territory. Chamorros are permitted to bring their wives with them and to establish permanent homes at Angaur, whereas native laborers from the Caroline Islands are not accompanied by their wives and are engaged for relatively short terms. The Chamorros are accorded the more favorable treatment because, being a more aggressive and more developed native group, they are employed as skilled laborers or as overseers, and a rapid turnover in this group would impair the efficiency of the mines. They are in reality permanent employees of the mine who re-sign their contracts year after year as a matter of course. Contracts with Caroline Islanders, who perform the unskilled jobs, are also for one year as a rule, although the period is sometimes shortened for those who live near the mines or lengthened to two years for those who come from distant islands.

In any case, when his contract expires, the Caroline native wants to go home. Recognizing this, the mining officials have in recent years adopted a policy of repatriation, and have been reluctant to re-indenture a Caroline native until he has spent several months at home.

In the past, a disproportionate number of the laborers employed at Angaur were recruited from the island of Yap, and it was felt that this explained in large measure the declining population of this island (see 143). In the last few years an effort has been made to reduce the number taken from Yap. The following table indicates the extent of the recruitment for the mines during the years from 1933 to 1937, classified by the islands of origin:

Year	Palau District		Yap District				Truk District	Total
	Angaur	Palau	Fais	Ulithi	Woleai	Yap		
1933	54	37	12	11	36	55	140	345
1934	59	32	12	11	35	51	140	340
1935	82	3	23	10	36	65	160	379
1936	83	1	15	11	45	63	199	417
1937	82	2	13	10	39	49	199	394

About 30 of the recruits from Angaur each year are Chamorros, i.e., natives of the Marianas Islands or descendants thereof. All others are Caroline natives from the islands indicated.

Forced Labor. According to the terms of the mandate from the League of Nations, forced labor is not permitted except for essential public works and services, and then only for adequate remuneration. In their official reports, the Japanese maintain they have never exacted forced labor from the natives, but they add that if a native community requests some improvement, such as betterment of roads or harbors or the establishment of a school, the labor of its inhabitants is accepted as a voluntary contribution. However, other evidence suggests that when the quota of labor required for the phosphate mines at Angaur is not filled on a voluntary basis, a system of forced labor is employed to make up the deficiency. Furthermore, it has been reported that natives employed on public works are frequently engaged under government pressure, and that they receive no pay on the excuse that the work is a communal obligation of the tribe.

Penal labor falls into a special category. Any sentence involving detention may be, and usually is, converted into a sentence of hard labor without detention for the same period. Fines which a native cannot pay are also worked out in labor on the basis of one yen per day (see 228). There is no information as to the use of Japanese convict labor.

According to aboriginal custom, particularly in the Yap district, natives of the lower classes had the duty of supplying manual labor to the higher classes which owned land. The Japanese are reported to have allowed this feudalistic relationship to continue, and, as has been mentioned, have been successful in securing the assistance of chiefs in the recruiting of native labor.

332. Labor Legislation and Working Conditions

Government Supervision of Labor. Labor legislation for the mandated area is extremely limited, and conditions of employment and labor depend far more on the negotiations carried on between the Governor or the Branch Governors and individual employers than on the four pieces of labor legislation which are relevant to this area. The first of these is a general order promulgated by the imperial cabinet in 1918, and revised in 1926 and 1928, which authorizes allowances to government employees or their families in case of accident, sickness, or death (see 245). The cabinet has delegated power to the Governor to issue ordinances and instructions concerning local labor problems. Under this power, the Governor in 1930 issued instructions concerning wages to be paid to the workers at the Angaur phosphate mines (see 333), and also instructions as to the conditions of employment and labor at the mines. The more important provisions of the latter, which still applies despite the transfer of the mines from the government to the Nanyo Takushoku Kaisha in 1936, are the following:

No person under 15 years of age shall be employed as a skilled workman or as a laborer.

No person with a mental or infectious disease shall be employed, and no person under 16 years of age and no woman shall be employed on work that is dangerous or injurious to health.

The working day shall not exceed ten hours, between 6 a.m. and 5 p.m., and there shall be one and one-half hours of rest during the hours of work.

Sundays, Japanese national holidays, and the six days from December 29 to January 3 shall be days of rest.

Home leave up to a maximum of 80 days shall be granted as a reward to persons who have worked regularly for more than 18 months.

For employment other than that at the Angaur mines there is no legislation comparable to these two sets of instructions. There is, however, a fourth and final piece of legislation touching on labor conditions, which provides that any employment contract between a native and a Japanese or foreigner for more than one year is considered invalid unless it has been approved by the Branch Governor of the district concerned.

Hours of Work. The customary working day for employed natives (even at the mines) is eight hours, usually from 8 a.m. to 5 p.m. with an hour off for food and rest. As a result of missionary influence, Sunday observance is the general rule, although it has been reported that increasing competition from Japanese labor has recently forced the natives into Sunday work in some areas.

333. Wages and Other Incentives to Labor

Attitude toward Work. Both the Germans and the Japanese report that the natives of the Western Carolines are generally indolent and averse to work, although, when constrained to labor and closely supervised, they frequently show a high degree of perseverence and strength. This judgment is doubtless based upon European and Oriental standards. The diligence of the natives in producing copra and their dexterity in performing the tasks demanded of them under their own economic system would appear to indicate that they are capable of prolonged hard work and are able to learn complicated motor habits if properly motivated to do so. It should be noted that the various religious cults of the natives of the Western Carolines, particularly in the Yap district, involve taboos against the performance of work at certain periods during the year.

Wage Scale. A report from the German period mentions the equivalent of about 14 cents a day in goods and board as the average normal compensation for native labor in the Yap district. The Japanese, at the time of their occupation of the islands, found only a few natives who were willing to work for wages. As late as 1935 it was reported that many natives preferred to work for provisions, such as rice, corned beef, and tinned salmon or sardines, rather than for currency. However, the willingness of the natives to work for a money wage has increased steadily, although lodging and board are still frequently given in lieu of part of the wage. In 1937, the prevailing daily wage rates for specific types of labor were officially reported as follows:

	Yap District		Palau District	
	Japanese	Natives	Japanese	Natives
Carpenters	¥ 3.30	¥ 1.00	¥ 3.00	¥ 1.50
Shipwrights	3.50	1.00	3.50	1.40
Bucksaw operators	3.50	1.50	3.00	1.50
Masons	2.50	.80	2.50	.80
Stone masons	2.00	.80	3.00	.80
Blacksmiths	-	-	2.50	.80
Day laborers (male)	1.50	.70	1.60	.80
Day laborers (female)	-	-	1.00	.50
Servants (male)	20.00*	10.00*	20.00*	7.00*
Servants (female)	10.00*	8.00*	10.00*	6.00*

* Per month, with board and lodging.

The basic wage policy for the Angaur phosphate mines was determined by an ordinance of 1930, the most important provisions of which are the following:

The wage rate shall be determined by the Chief of the Mining Station and reported to the Governor.

Wages shall be paid on the basis either of the number of days worked or of piecework produced.

Wages for the month shall be paid before the seventh day of the following month.

Increased pay not to exceed 40 per cent of the daily wage shall be paid for each hour of overtime, dangerous work, night labor, and work outdoors in the rain.

Full wages shall be paid to those who are excused from working on the four Japanese national holidays or between December 31 and January 3.

Half or full wages shall be paid to those excused from work to mourn the death of a member of the family.

Food may be supplied as a supplement to wages.

Traveling expenses shall be paid by the mining station.

Although mining officials have not taken advantage of the ordinance's provision for partial payment in food, they have provided free housing. Wages have been paid according to the number of days worked. The scale of daily wages prevailing at the mines in June, 1937, was reported as follows:

	Japanese	Chinese	Chamorros	Natives
Maximum	¥ 3.00	¥ 2.50	¥ 1.81	¥ .94
Minimum	.70*	2.20	.65	.65
Average	2.30	2.35	1.10	.71

* Apprentices.

The prevailing salary rates are low, judged by American standards. The salaries of Japanese officials of Hannin rank range from a maximum of ¥ 2,160 to a minimum of ¥ 480 per year. Clerical and service employees, of course, receive still less. The salary levels for natives are lower than for the Japanese. Village chiefs are reported to be paid not more than ¥ 35 a month, and village headmen not more than ¥ 20. Native policemen and school teachers receive approximately ¥ 250 per year.

Co-operative Labor. The natives are accustomed to work co-operatively in the building of roads, clubhouses, and fish-pens, as well as in other activities which their chiefs declare to be for the common benefit. It is also customary for relatives and neighbors to help each other co-operatively in the building of houses and canoes. Such work is motivated primarily by accompanying festivities and a concluding feast. Experience in the Pacific indicates that similar incentives are often useful in employing native labor in gangs.

334. Specialization

Division of Labor by Sex. According to native custom, specific economic tasks are regarded as the province of one sex or the other, with little overlapping. The activities generally assigned to adult males include burning of bush, clearing and preparing of land, care of coconut palms and breadfruit trees, fishing, building of houses and canoes, rope and fish-net making, work in wood, shell, stone, and bone, warfare, navigation, and the exercise of magical, medicinal, and ceremonial skills. The activities assigned to women include planting, cultivation, watching, weeding, and harvesting of tuberous crops, washing clothes, housecleaning, the tending of children, midwifery, and the weaving and plaiting of baskets, mats, sails, and clothing. Cooking is traditionally done by women in the Yap district, but by both sexes in the Palau district. In contrast to the Eastern Carolines, where women have been accustomed to do a considerable amount of fishing, the women of the Western Carolines seldom fish.

With the impact of European and Oriental culture, the division of labor between sexes, which was strictly adhered to under aboriginal conditions, has become less rigid. Today, for example, men and women alike engage in nearly all phases of agricultural activity.

Aboriginal Specialization. In former times, there was some occupational specialization, particularly in housebuilding, canoe-making, tattooing, woodworking, and shellworking. In the Yap district, only serfs of the lower feudalistic classes engaged in certain kinds of weaving and in the making of rope and pottery.

Occupational Distribution. The principal occupation of the natives today is subsistence farming and coconut production, approximately 80 per cent of all gainfully employed natives being officially classed as agriculturists. Most of the rest are phosphate miners, foresters, public works laborers, and government employees. Few have received training in specialized trades, although by 1938 approximately 60 natives had graduated in carpentry from the Apprentice Woodworkers' Training School in Palau, where courses are given in mechanical drawing, cartography, building materials, tools and workmanship, and designing.

The Japanese follow a much wider range of occupations. The largest number following any single occupation are fishermen, who constitute about 17 per cent of all Japanese who are gainfully employed. Agriculture, public works and civil engineering, com-

merce, and government rank next in order of importance. The distribution of occupations, classified by district, race, and sex, as officially reported in 1937, is shown in the following table:

Occupation	Yap District				Palau District				Total
	Natives		Japanese		Natives		Japanese		
	Male	Female	Male	Female	Male	Female	Male	Female	
Agriculture	2,128	1,931	16	1	918	1,026	667	90	6,777
Stock-raising	-	-	-	-	-	-	10	-	10
Forestry	-	-	21	-	181	-	45	-	247
Fishing	-	-	3	-	71	-	1,400	572	2,046
Mining	-	-	1	-	388	-	318	-	707
Food, tobacco, and liquor manufacture	2	-	2	-	-	-	117	75	196
Wickerwork and basket-making	2	-	5	-	23	-	100	-	130
Textile manufacturing	-	-	3	-	1	1	7	4	16
Tailoring and clothing manufacturing	-	1	-	1	-	-	20	31	53
Paper manufacturing and printing	-	-	-	-	-	-	34	-	34
Stone cutting	-	-	2	-	-	-	58	-	60
Metal work	-	-	2	-	3	-	130	-	135
Other industries	-	-	1	-	44	-	37	-	82
Public works and civil engineering	7	-	15	-	108	-	656	-	786
Water, gas, and electricity	-	-	2	-	10	-	29	-	41
Transportation	2	-	3	-	36	-	225	-	266
Communications	-	-	24	-	-	-	51	4	79
Commerce	30	-	86	18	16	3	401	92	646
Banking and insurance	-	-	-	-	-	-	2	-	2
Independent business	-	-	8	-	-	-	30	-	38
Receptionists	1	1	3	4	1	1	71	309	391
Stenography	-	-	-	-	-	-	1	12	13
Government employees	42	-	22	-	30	-	293	40	427
Medicine	-	10	7	3	-	-	22	12	54
Education	3	-	10	1	5	-	27	8	54
Religion	-	-	-	-	-	-	3	-	3
Domestic servants	26	11	3	2	-	-	120	205	367
Other occupations	81	15	3	1	340	-	798	10	1,248
No occupation	550	1,014	105	194	1,312	1,931	1,477	2,778	9,361
Total	2,874	2,983	347	225	3,487	2,962	7,149	4,242	24,269

335. Labor Organizations

Labor Unions. No labor unions or other labor organizations are reported for the Western Carolines. Industrial guilds are considered elsewhere (see 353).

34. PROPERTY AND EXCHANGE

341. Land Tenure

Native Land System. In Yap, all land is individually owned. There is no unclaimed land, and even fishing sites are private property. Buildings usually belong to the owner of the land on which they stand, but coconut trees formerly belonged to the man who planted them, even though they grew on another's land. Property in land is the basis of the entire social and political structure. The lowest social classes, called milingai, own no land. They work on lands owned by members of the higher classes, and owe labor and tribute to their feudal lords. Every chief, whether of a district or a village, owes his position to his possession of particular houses and lands, which gives him the right to demand allegiance and tribute from his inferiors.

All the atolls east of Yap acknowledge the overlordship of the paramount chief of the Gagil district on Yap (see 211). As one approaches Truk, however, private ownership becomes less pronounced, and land tends to be owned communally by clans and family lines, though administered by local chiefs.

The system of land tenure in Angaur, Kayangel, and Palau is noticeably different from that on Yap. Each village has a recognized territory, including mangrove swamps, forests and fishing grounds, which any of its inhabitants can use freely. Arable land is apportioned by the village chief. An individual has a claim to the land allotted to him, and to any new plot which he brings under cultivation, but he cannot sell it, and it reverts to the community if he moves away. Certain houses and lands are the hereditary property of particular households. The head of a household bears the name of its property as a title, and if it is one of the ten ranking titles in the village, it assures him a corresponding place in the local council (see 211). Private property in land is practically unknown, occurring only in the case of a gift from the chief of another village. In Merir, Ful, Sonsorol, and Tobi, land is privately owned, although the family of the owner ordinarily has a traditional claim to share in its use.

Changes under German Administration. The German administrators were faced with the problem of making the islands profitable and at the same time protecting the rights in land of the natives. An ordinance of 1901 provided that non-natives could acquire land rights only if they engaged the government as intermediary. At the request of the West Caroline Company the government purchased 14,000 acres of native land on Yap at a little less than four marks per acre, and leased it to the company for 30 years for copra plantations. A similar policy was carried out on Angaur at the request of the South Seas Phosphate Company.

Japanese Land Policy. When the Japanese occupied the islands they accorded provisional recognition to all land rights previously acquired in accordance either with traditional native customs or with German laws, irrespective of whether or not the owners were natives. One major change was immediately made: the requirement of government consent in disposing of land not converted to private property was abolished. Unless the transaction involved a foreign national, the local chiefs now had unrestricted power to alienate unallocated lands under their jurisdiction. As a consequence, with the exception of Yap where no such land existed, much more land in the Western Carolines has passed out of native ownership during the Japanese administration than during the German regime.

The Japanese officially classify land holdings into the state domain and private lands. The former category includes the parcels of land transferred to the Japanese Government under Article 257, paragraph 2, of the Treaty of Versailles and lands subsequently acquired by the Government. All land not privately or communally owned is considered to be part of the state domain, and private appropriation of such land is forbidden. The public domain is classified as follows: (1) domain for public use; (2) domain for government use, e.g., for government enterprises and the residences of public officials; (3) domain for forests; (4) domain for miscellaneous use. Only land in the fourth category may be leased or sold to private persons.

Private lands are classified as follows: (1) property of natives, subdivided into private property and communal property; (2) property of persons other than natives, including both Japanese and foreigners. Private lands may be freely bought, sold, leased, exchanged, or otherwise transferred, and natives have unrestricted freedom to buy or lease land from Japanese, foreigners, or one another. However, according to an ordinance of the South Seas Government issued in 1916 and slightly amended in 1931, no non-native person, with the exception of government agents, may contract with a native for the purchase, sale, assignment, lease, or mortgage of land except with the express sanction of the Governor, followed within 30 days by registration of the contract with the Branch Government of the district within which the land is situated.

All transactions relative to real property must be registered. The schedule of registration fees is presented elsewhere (see 227).

No figures are available on the relative extent of the state domain and private land throughout the Western Carolines in general, but in 1935 the following figures (in hectares) were reported for the two islands of Yap and Palau:

Island	State Domain	Private Lands		Total Land	Percentage	
		Native	Non-native		State	Private
Yap	44	7,227	10	7,281	1	99
Palau	27,638	4,340	869	32,847	84	16

The state domain has almost certainly been increased in recent years, for the construction of airfields and bases if not otherwise. Official reports, however, are silent on this matter. Nor is there information as to the legal procedures involved, although presumably the forms of government purchase have been at least nominally adhered to.

Parts of the state domain are leased to private individuals and corporations for exploitation. In 1937 it was officially reported that 500 hectares in the Yap district and 2,060 hectares in the Palau district were thus under lease, bringing in a total rental of ¥ 24,224. Separate leases totaled 41 in the Yap district and 438 in the Palau district. Of these, 12 in the Yap district and 104 in the Palau district, mainly of newly colonized land, were free of rent. The statistics on the government lands leased with rental in 1937 are presented in the following table:

Type of Land	Yap District		Palau District	
	Hectares	Rent	Hectares	Rent
Arable land	-	-	305	¥ 356
Land with buildings	1	¥ 800	43	17,960
Coconut plantations	499	3,150	701	1,524
Pasture land	-	-	551	278
Miscellaneous	-	12	2	144
Total	500	3,962	1,602	20,262

Land Survey. In 1923 the South Seas Government initiated an investigation of lands owned by the Government and by private individuals other than natives, for purposes of demarcation and classification. This survey was completed for the entire mandated area in 1932. By an ordinance promulgated on October 6, 1933, the investigation was extended to lands owned by natives. The expressed purpose was to make definite all existing land titles and to settle disputes over boundaries. A land commission was created with the Governor as chairman, and it was provided that persons desiring to obtain a decision from the commission concerning a title or a boundary submit a written declaration describing the plot of land in question and stating the reasons for the request. Both the earlier and the later surveys began in the Marianas, proceeded through the Western and Eastern Carolines, and ended with the Marshall Islands. The land survey appears to have been conducted, on the whole, with fairness.

342. Movable and Incorporeal Property

Property in Movables. Throughout the area, movable articles are privately owned for the most part. The principal exception is the large nets used in communal fishing, and in some islands also the larger canoes, which are the common property of the village. Women as well as men own property. The general rule is that an article is owned by a member of the sex which makes and uses it. The natives of Merir, Pul, and Sonsorol have developed an elaborate system of individual property marks, which are placed on articles, as we place brands on cattle, to indicate the owner.

Incorporeal Property. The natives of the Yap district recognize dances, songs, medical recipes, and magical spells as the exclusive property of the inventor, who may sell or otherwise dispose of them as he sees fit.

The natives of Palau are familiar with interest-bearing loans. Payments for particular classes of articles must traditionally be made in different kinds of money. If a purchaser does not have enough of the proper kind of money, he can borrow it from another, giving the lender security in the form of another kind of money. The customary term of such loans is three months, and repayment must be made in the kind of money borrowed. The interest is paid in advance, at the time the loan is made, either in the same kind of money as that advanced as security or in another kind. For the system of debts and credits prevailing among the Japanese population, see 353.

343. Inheritance

Native Rules of Inheritance. Two distinct rules govern the transmission of property in the Western Caroline Islands, namely, matrilineal inheritance or transmission in the female line and patrilineal inheritance or transmission in the male line. Each rule prevails in two areas. Matrilineal inheritance is customary in Satawal and a few of the adjacent atolls, as it is in the Truk district to the east, and it reappears in Angaur, Kayangel, and Palau. Patrilineal inheritance is the rule throughout the Yap district except in the extreme east, and it also appears in the southwestern islands of Merir, Pul, Sonsorol, and Tobi.

These diverse rules affect principally the disposition of a man's property after his death, since a woman's property is everywhere inherited by her daughters or sisters. In all the islands where patrilineal inheritance prevails, a man's property descends to his sons, and sometimes also to his daughters, the principal heir in most cases being the eldest son. Under matrilineal inheritance, however, a son can never inherit from his father. The heirs of a man are his brothers and the sons of his sisters, the preferred heir being the next younger brother or, in default of brothers, the eldest son of the eldest sister. On Yap there is one interesting exception to the prevailing rule of patrilineal inheritance. The cult estates in the districts of Tomil, Rul, and Gagil, the presence of which gives these three districts their superior prestige, are transmitted in the female rather than in the male line.

Probate Procedure. The procedure followed today in the transfer of property by inheritance or testamentary disposition is that prescribed by Japanese law. The schedule of fees is given under 227.

344. Domestic Commerce

Native Trade. In aboriginal times the Yap district was the center of an extensive native trade, which was carried on not only between the islands of the group but also with distant areas such as Guam in the Marianas and the westernmost lands of the Eastern Carolines (see 133). With the introduction of modern shipping services, however, long canoe voyages for trading purposes became much less frequent and have now practically ceased. The natives have come to depend primarily upon trading stations operated by private entrepreneurs and by large companies, especially by the Nanyo Boeki Kaisha (see 327). Although Japanese money has for some time been in general use (see 351), barter continues, as formerly, to be a natural and important mechanism of exchange, particularly in the more remote districts.

Internal Trade. Domestic commerce in the outlying regions is carried on largely through trading stations. These are conducted principally by Japanese merchants and agents of the large trading companies. The natives buy food and cheap manufactured goods imported from Japan in exchange for the products of their own industries, especially coconuts, coconut oil, copra, fruits, taro, takase and other shells, ropes and cordage, hats woven from fibers and palm leaves, special hats made of thin tortoise shell, objects of carved wood, tortoise-shell utensils, bracelets, necklaces, and sponges. In the larger centers, particularly on Palau, general and specialized shops and service establishments cater to the economic requirements of the Japanese population (see 327). Though no statistics are available as to the extent of local and inter-island trade, it is thought to be fairly considerable, Palau being by far the largest distribution and trading center.

Prices. Official Japanese sources list the prices prevailing in the western Carolines for a number of important commodities, mainly imported from Japan (see 345). These commodities, with their prices in sen for 1932 and 1937, and also, for purposes of comparison, the prices prevailing in Tokyo in 1932, are shown on the following table:

Commodity	Price in 1932			Price in 1937	
	Tokyo	Yap	Palau	Yap	Palau
Rice, high-grade Japanese, per kg.	22	19	21	28	31
Rice, 2nd-grade Japanese, per kg.	21	-	20	-	-
Rice, 3rd-grade Japanese, per kg.	20	-	-	-	-
Rice, glutinous, per kg.	23	25	27	38	35
Barley, improved Ashimuji, per kg.	9	13	16	-	29
Wheat flour, Tareshimishi, per kg.	16	26	21	35	32
Starch, potato, per kg.	-	-	32	-	-
Soy beans, 3rd-grade, Hokkaido, per kg.	27	23	26	-	35
Peas, per kg.	15	20	26	37	28

Commodity	Price in 1932 Tokyo	Yap	Palau	Price in 1937 Yap	Palau
Peas, green, Naganzura, per kg.	-	-	31	-	-
Bean curds, per piece	4	5	10	-	-
Sweet potatoes, per kg.	-	-	7	19	-
Potatoes, per kg.	7	9	16	13	19
Radishes, per kg.	-	9	12	21	-
Carrots, per kg.	-	13	-	19	26
Onions, per kg.	9	16	17	19	21
Onions, green, per kg.	-	-	15	-	-
Cabbage, per kg.	-	-	21	27	32
Gourd, dried, per kg.	80	133	102	-	-
Radishes, pickled, per kg.	16	26	28	32	35
Beef, per 100 gr.	35	-	12	-	-
Pork, per 100 gr.	11	9	16	-	-
Poultry, per 100 gr.	24	-	13	-	-
Milk, condensed, per can	45	45	41	50	45
Eggs, per kg.	40	-	233	142	131
Soy sauce, per liter	33	35	42	40	44
Bean paste, red, per kg.	20	20	26	27	27
Vinegar, per liter	-	48	48	-	-
Bonito, dried, per 100 gr.	29	27	27	19	16
Salt, 3rd-grade, per kg.	10	20	13	13	13
Sugar, refined Sambonshiro, per kg.	35	45	43	48	48
Molasses, Kuso, per kg.	-	-	28	32	32
Wine, clear, per liter (bottle)	111	124	111	124	105
Beer, Ebisu, per bottle	34	40	41	45	43
Cider, per bottle	-	15	25	22	20
Charcoal, per 10 kg.	77	67	32	32	48
Firewood, per 10 kg.	-	-	10	-	27
Soap, toilet, per cake	10	12	10	10	10
Matches, per package of 10 boxes	6	10	8	9	10
Laver (sea moss), dried, per book of 10 sheets	-	40	36	45	35

345. Foreign Trade

Balance of Trade. During the period of German administration the value of imports to the Western Carolines was, on the average, two or three times as great as that of exports, and this unfavorable balance tended to increase as the copra market became more depressed. Under Japanese administration this trend has been reversed, owing primarily to the development of commercial fishing, the shell industry, and phosphate mining. In 1937, exports from the islands exceeded imports by approximately a million yen. Nevertheless, the fact that customs duties collected in the Western Carolines in 1937 constituted approximately 32 per cent of all such duties collected in the mandated islands indicates that the group is a comparatively large market for Japanese goods.

Regulation. Customs duties are collected on imports, and port clearance dues on exported commodities that are not subject to a consumption tax at the place of destination (see 356). Government regulations also provide for the inspection of copra for export and the supervision of transported plants. An ordinance promulgated in 1932 provides that copra shipments must be examined at a Branch Government office or, in special cases, at other places by special copra inspectors. If the product meets government standards, the inspector passes it for export by affixing a seal to each sack. The penalty for infraction of these regulations is a fine not exceeding ¥ 100. By an ordinance effective in 1933 all plants and seeds imported into or exported from the islands must be similarly inspected and passed by an inspector of plants. Before plants may be shipped, permission must be obtained through written application to the Branch Government. Plant inspectors destroy or ban the shipment of all plants found to be infested with injurious insects or micro-organisms. Penalties of fines up to ¥ 200 are provided for violations of these regulations.

Exports. During the German period, exports from the Western Carolines showed little tendency to increase. They consisted largely of copra, most of which was shipped to Germany. The total exports from the area were approximately Mk. 116,417 in 1902, Mk. 359,059 in 1903, Mk. 125,818 in 1904, and Mk. 136,046 in 1905.

Under Japanese administration the export trade of the islands has increased immensely. Copra production, which is greater in the Yap than in the Palau district, has

remained relatively stationary, and now accounts for only a very small proportion of the exports. In 1937, shell products, phosphates, and dried bonito ranked in this order as the leading export commodities. The production of all three has expanded rapidly in recent years, with a resulting increase in total exports as revealed in the following table:

Year	Palau	Yap	Angaur	Total Exports
1934	¥ 1,132,899	¥ 241,670	¥ 1,391,899	¥ 2,766,468
1935	1,502,383	147,645	2,121,886	3,771,914
1936	3,633,827	180,970	2,157,635	5,972,432
1937	6,278,815	220,452	1,875,781	8,375,048

Phosphates are shipped mainly from Angaur, dried bonito and shell products from Palau. A moderate amount of aluminum ore (laterite) is produced and shipped (see 324). Virtually all exported commodities are sent to Japan, less than three per cent of the total going to foreign countries. The exports to Japan in 1937, classified according to article and port of shipment, are shown in the following table:

Exported Article	Yap	Palau	Angaur	Total
Dried bonito	-	¥ 2,026,812	-	2,026,812
Coffee	-	1,200	-	1,200
Other foods and tobacco	-	188,104	-	188,104
Shell, bone, horn, and hides	18,800	3,087,489	-	3,106,289
Drugs, chemicals and explosives	-	40,260	-	40,260
Cordage	-	3,762	-	3,762
Cloth	600	4,275	-	4,875
Clothing and trinkets	-	300	-	300
Pulp, paper, and books	-	295	-	295
Phosphates	-	290,992	1,875,781	2,166,773
Pottery and glass	-	450	-	450
Ores and metals	1,960	86,293	-	88,253
Metal products	-	22,535	-	22,535
Machinery, boats and vehicles	-	95,088	-	95,088
Copra	188,975	152,782	-	341,757
Charcoal	9,107	1,992	-	11,099
Miscellaneous products	1,010	28,035	-	29,045
Total	220,452	6,030,664	1,875,781	8,126,897

The relatively small proportion of the total exports sent in 1937 to countries other than Japan were shipped exclusively from Palau. The figures are given in the following table:

Items	
Food, tobacco, and sugar	¥ 1,689
Shell, bone, horn, and hides	149,662
Oil, fats, and wax	4,416
Drugs, chemicals, and explosives	1,834
Dyes, cosmetics, and paint	501
Cordage	511
Cloth	33,036
Clothing and trinkets	305
Wood, pulp, paper, books	822
Ores and metals	4,940
Metal products	4,048
Minerals (including cement)	12,573
Machinery, boats, and vehicles	26,680
Miscellaneous products	7,134
Total	248,151

Commodities not specifically mentioned in the above tables but entering into the islands' export trade include coconut oil, tunny fish, nickel ore, sponges, trepang, and natural and cultured pearls.

Imports. Throughout the German period, imports to the Western Carolines greatly exceeded exports in value. By 1906, 75 per cent of all imports were from Japan, and thereafter Japan continued to dominate the import as well as the export trade until, in 1931, according to official Japanese sources, products imported from countries other than Japan made up only six-tenths of one per cent of the total imports to the islands. Palau

was and is by far the most important and active center of the import trade, greatly overshadowing both Angaur and Yap. Under Japanese administration, imports increased remarkably during the so-called depression period and this rise was continued in subsequent years. The chief articles of import are rice and other foodstuffs, beverages, tobacco, cloth and clothing, timber and articles made of wood, oil, and machinery. The increasing trend of imports during recent years is shown in the following table, classified according to ports of entry:

Year	Palau	Yap	Angaur	Total
1930	¥ 809,910	¥ 125,991	¥ 210,876	¥ 1,145,877
1931	801,498	107,064	221,311	1,129,873
1934	1,962,344	273,020	209,135	2,444,498
1935	2,634,983	199,209	240,170	3,074,362
1936	5,383,525	277,733	154,805	5,818,063
1937	6,514,081	375,212	262,833	7,152,126

Commodities imported from countries other than Japan have consisted principally of the following: raw sugar from Java and Celebes for manufacture; general merchandise from Guam, the Gilbert Islands and Rabaul, for local sale; rice, chiefly from Indo-China, for consumption by employees of the Nanyo Takushoku Kaisha; and copra, from the Philippines and other Pacific areas, for re-export to Japan. In 1937, foodstuffs constituted approximately 34 per cent of all imports, with metals and metal products taking second place. The following table analyses the imports of that year according to class of article, source, and port of entry, the figures in columns representing values in yen and those in parentheses representing quantities imported from Japan:

Imported Article	From Japan to Yap	From Japan to Palau	From Japan to Angaur	From Other Countries to Palau	From Other Countries to Angaur	Total Imports
Rice (7,714,269 lbs.)	¥ 36,930	¥ 552,190	¥ 22,818	¥ 80,739	¥ 2,150	¥ 694,827
Wheat flour (456,380 lbs.)	4,270	36,122	1,004	-	-	41,396
Other grains and starches	648	38,844	1,156	-	-	40,648
Soy sauce (150,240 liters)	2,985	45,867	1,278	-	-	50,130
Soy bean paste (352,767 lbs.)	2,582	40,206	401	-	-	43,189
Sugar (282,889 lbs.)	628	37,668	1,070	-	-	39,366
Cakes and cookies	10,670	85,412	12,087	-	-	108,169
Raw vegetables (1321 cu.m.)	3,959	53,113	1,150	-	-	58,222
Canned goods (784,728 cu.m.)	24,397	164,380	16,113	-	-	204,890
Cider and lemonade (46,822 liters)	1,412	20,239	1,945	-	-	23,596
Sake and wine (109,020 liters)	3,590	94,509	1,842	-	-	99,941
Beer (856,174 liters)	10,011	420,175	2,856	-	-	433,042
Other foods and tobacco	21,387	463,991	10,604	13,719*	-	509,701
Live plants and animals	-	-	-	943	-	943
Hides, bone, horn, and shell	221	15,357	7	2,247	-	17,832
Kerosene (414,732 liters)	5,575	65,305	718	-	-	71,598
Crude oil (59,998 liters)	2,004	3,724	-	-	-	5,728
Soap (151.9 cu.m.)	851	35,093	961	-	-	36,905
Other fats, oils, and waxes	15,433	307,990	8,987	331,022*	13,054*	676,486
Chemicals and drugs	23,303	130,054	7,802	35,148	-	196,307
Paints, dyes, and cosmetics	1,773	40,049	1,029	-	-	42,851
Ropes, cordage, and thread	525	59,648	792	29,567	-	90,532
Cotton goods (465 cu.m.)	12,054	175,521	6,539	-	-	194,114
Burlap sacks (420 cu.m.)	7,751	37,624	66	-	-	45,441
Other textiles	10,978	94,469	4,652	-	-	110,099
Clothing and trinkets	12,113	152,869	3,161	-	-	168,143
Pulp, paper, and books	8,372	94,716	1,397	-	-	104,485
Coal (678 short tons)	-	2,600	15,900	-	-	18,500
Other minerals, including cement	6,678	139,949	1,510	7,428*	-	155,565
Pottery and glass	6,030	64,770	1,960	-	-	72,760
Steel (1,701 short tons)	9,962	292,551	17,120	-	-	319,633
Other metals and ores	962	71,455	9,936	-	-	82,353
Metal products	16,893	281,187	28,574	-	-	326,654
Automobiles and accessories	2,728	50,647	-	-	-	53,375
Bicycles and accessories	2,153	67,053	1,443	-	-	70,649
Other machines and vehicles	59,734	759,266	23,287	306*	-	842,593
Lumber	20,073	458,984	23,199	-	-	502,256

Imported Article	From Japan to Yap	From Japan to Palau	From Japan to Angaur	From Other Countries to Palau	From Other Countries to Angaur	Total Imports
Miscellaneous	¥ 25,577	¥ 491,599	¥ 14,265	¥ 56,767	¥ -	¥ 588,208
Total	375,212	5,945,196	247,629	557,886	15,204	7,141,127

* Sums given for "imports from other countries" presumably include articles in similar categories immediately preceding.

35. FINANCE

351. Currency

Native Money. A highly developed native currency has existed in the Western Carolines, and is still used extensively in the less civilized areas. Although minor transactions are conducted by barter, all important ones involve a transfer of money.

In Palau the native money is of three major types: small yellow or red stones, beads, and glass balls. All three types are perforated. The yellow stones are the most highly prized; if they are large and pure in color, they are kept in careful custody by a paramount chief and are not circulated. Red stones are almost as valuable as yellow ones. Less prized are the various types of bead money. Some kinds are used as offerings to the gods; others are used to pay for housebuilding and canoe construction. At the present time, three types of bead money have well defined monetary values and are used in ordinary transactions among natives. These are called autaok, kluk, and klesuk, the individual beads of which bear the values of ten, two, and one, respectively, in relation to one another. In 1936, single kluk beads, somewhat smaller than autaok beads, were reported to be worth ten baskets of taro, or about ¥ 100. Glass money exists in several denominations, varying widely in value. All are made of crude glass, permeated with stripes and strata. They are not of native manufacture, but their exact provenience is a subject of dispute. Necklaces of native money are often worn as ornaments.

Yap money is of bone, stone, or shell. The bone money, made from teeth of the dugong, is the most valuable; it is exceedingly rare and is seldom circulated. The famous stone money of Yap consists of massive limestone discs, many of them a foot thick and between seven and nine feet in diameter. They are quarried on Guam or on Babelthuap in Palau and are transported to Yap on native rafts. The value of one of these millstone-like coins depends upon its history as well as upon its size, quality, color, shape, and age. Those quarried on Guam are more highly valued than those brought from Babelthuap. For example, a small Guam coin of about a foot in diameter is worth approximately $75, whereas a Palau disc three feet in diameter is worth only about $20. The stones are placed on display outside the native hut, flanked against the outer wall. Transactions involving stone money do not necessarily involve transportation of the stones themselves. The title to a stone is transferred, and this change is made public, but the stone may remain where it was. There are two kinds of stone money, one made of white and the other of black pearl-oyster shell. Both types are round and flat. The white shell money is far more valuable than the black, and individual shells circulate as currency whereas black shells have monetary value only when strung in necklaces. A good example of white shell money is worth approximately as much as a stone disc. A survey made in 1929 revealed 13,281 pieces of stone money and 36,453 pieces of shell money in the possession of the natives of Yap.

Foreign Money. The introduction of foreign money has been hindered by habituation to a well entrenched native currency. In the German period the natives used German currency in trading with Europeans, but among themselves they continued to use their own money. The German administration recognized the indigenous stone money on Yap, permitting fines to be paid in stones. The discs thus received were returned to the natives in payment of their services on public works. Under the Japanese administration the natives have been compelled to use Japanese money for all transactions with shops and governmental offices. The natives, however, still continue to use their indigenous money amongst themselves. On Yap, in particular, the natives have little faith in foreign money. They have been expected in turn to adopt Spanish, German, and then Japanese currency, and with each change the previous issue has been declared invalid. The native money, on the other hand, has not changed; it is still acceptable.

Japanese Currency. The monetary system of Japan is standard throughout the area. The basic unit is the yen, which is worth approximately 50 American cents at par but which had declined in value to about 23 cents prior to the outbreak of war in 1941. Since the occupation of the Gilbert Islands by the American armed forces in December, 1943, the ratio established for the conversion of Japanese into American currency, in both the Gilbert and the Marshall Islands, has been 20 yen for one American dollar (Hawaii overprint). There are two lesser units in the Japanese monetary system: the sen, representing one one-hundredth of a yen, and the rin, worth one tenth of a sen. The coins and bills in use are those of Japanese central issue. Paper money is current in denominations of 50 sen, 1 yen, 5 yen, 10 yen, 20 yen, and upward. Subsidiary coins in use represent 1 sen, 5 sen, 10 sen, and 50 sen, but the 50-sen piece has recently been largely superseded by the paper issue.

352. Foreign Exchange

Settlement of Trade Balances. Since all but a minor fraction of the external trade of the Western Carolines in recent years has been carried on with other parts of the Japanese Empire, the question of foreign exchange rarely arises. Such balances as have arisen from the insignificant direct trade with foreign countries have ordinarily been settled through Tokyo by the usual routine of foreign exchange in terms of current quotations for yen in the world market. In the years just prior to the outbreak of war the exportation of funds was severely restricted by the Japanese Government. Some merchants maintained accounts in banks abroad and were glad to pay yen for foreign checks, which they could then mail out of the country for deposit.

353. Banking, Credit, and Insurance

Banks. There were no banks in the Western Carolines in 1937, and none are known to have been established since that time. Savings accounts are handled by the post offices, and certain banking functions are performed by credit associations and industrial guilds (see below). The courts sometimes act as depositaries of legal documents, securities, money, and other valuables. There were two new cases of such deposits at the Palau District Court during 1937, involving ¥ 357.

Savings. The natives own little valuable property other than land and, although they sometimes treasure old native money and coins of gold and silver, they are not accustomed to saving money. However, the Post Office Savings Bank offers facilities for saving, and in 1936 there were reported to be approximately 6,000 native postal savings accounts in the entire mandated territory. Deposits to these accounts during that year totaled ¥ 127,108, and withdrawals amounted to ¥ 109,741. By comparison, during the same year, deposits of ¥ 3,134,399 were made to 61,922 Japanese savings accounts, and ¥ 2,458,756 was withdrawn from 29,262 Japanese accounts. The natives thus made comparatively little use of the postal savings system. This fact is further reflected in the following table, which presents data on the activity of all savings accounts as compared with native accounts at the post offices of Yap, Palau, and Angaur during 1937:

	Yap		Palau		Angaur		Total
	Number	Amount	Number	Amount	Number	Amount	Amount
Deposits							
Total	3,588	¥314,605	20,519	¥1,245,454	2,500	¥140,571	¥1,700,630
Native	909	5,745	2,149	16,178	309	21,753	43,676
Withdrawals							
Total	1,041	287,687	10,498	1,033,285	1,092	134,260	1,455,232
Native	205	4,607	522	21,280	182	21,497	47,384
Accounts transferred to the post office							
Total	1,627	97,528	12,946	1,454,191	1,378	86,440	1,638,159
Native	96	864	98	820	200	11,261	12,945
From the post office							
Total	26	5,658	2,204	2,059,223	325	302,066	2,366,947
Native	0	0	5	49	0	0	49
New native accounts	37		265		46		

The Japanese administration has tried to encourage saving by natives, and it is reported that in 1938 it was made mandatory for native families in some of the South Seas territory, very probably including the Western Carolines, to make regular weekly deposits to postal savings accounts.

Money Orders. In 1937, natives in the Western Carolines sent 171 money orders totaling ¥ 6,275 and received 306 orders totaling ¥ 15,483, whereas Japanese in the area during the same year sent approximately six million yen in money orders and received about two and a half million yen. The total number and amount of money orders sent and received at the Yap, Palau, and Angaur post offices in 1937 are shown in the following table:

	Yap		Palau		Angaur		Total
	Number	Amount	Number	Amount	Number	Amount	Amount
Domestic							
Sent	2,439	¥ 172,232	35,739	¥ 5,759,781	2,703	¥ 150,840	¥ 6,082,853
Received	625	335,121	6,703	2,190,343	402	52,757	2,578,221
Foreign							
Sent	2	23	6	258	1	50	331
Received	1	10	42	2,099	2	23	2,132

Native remittances and receipts by money order in 1937 were, according to post offices, as follows:

	Yap		Palau		Angaur		Total	
	Number	Amount	Number	Amount	Number	Amount	Number	Amount
Sent	53	¥ 1,098	24	¥ 1,667	94	¥ 3,510	171	¥ 6,275
Received	68	2,147	106	3,082	132	10,254	306	15,483

It seems probable that most of the money orders sent and received by natives were domestic orders.

Credit. The German administration prohibited the extension of credit to natives except to native traders associated with merchant firms and in cases of urgent necessity, such as for repairing or provisioning a ship operating on a fixed schedule. The Japanese administration has abandoned this legal restriction, and storekeepers and copra brokers advance credit freely to natives, usually in goods rather than in cash, in expectation of payment from future crops, produce, or wages. Reports indicate that this practice is sometimes carried to excess and that some natives are so heavily in debt that they are completely under the thumb of the Japanese.

No information is available with respect to the extent to which natives pledge or mortgage their crops, produce, wages, or movable property as security for such obligations. It is thought, however, that this practice is resorted to only infrequently, and that pressure through police action is much more often applied. The mortgaging of real estate by natives in order to secure advances of credit also seems to be very little used. Prior to 1931 the law prohibited mortgages of native lands. In that year, however, the restriction was relaxed and the mortgaging or pledging of such lands was permitted, provided that the terms of the loan transaction received the approval of the Governor pursuant to written application made to the Branch Government and signed by both parties to the agreement (see 341). That this method of obtaining credit is not popular is attested by the fact that up to the end of 1934 only 26 such applications for approval of real estate transactions (including the outright sale or transfer of land to non-natives), involving in toto less than 36 hectares of land, were made in the entire mandated territory. Of these, approval was refused in two cases.

No private credit institutions are available to the natives of the Western Carolines. Many of the Japanese inhabitants, however, are able to secure credit through voluntary associations of several types. Mutual aid societies, described elsewhere (see 245), advance credit to members in cases of sickness and other emergencies. More specifically concerned with credit operations, however, are the credit associations (mujinko), also known as co-operative credit clubs, and the industrial guilds (kumiai).

Credit associations and industrial guilds resemble each other in the conduct of their credit extension operations, which are based on either a lottery or a bidding system. These systems introduce into credit transactions a large element of chance, enjoyed by the Japanese, and also high interest rates, to which they are accustomed. With capital accumulated from membership dues, profits, and periodical levies, these associations make loans and extend credit to members for the development of private business. Credit associations accept members from all occupations, whereas industrial guilds usually restrict their membership to specific occupational groups. The credit associations, moreover, engage only in direct credit activities, e.g., lending money and financing purchases, whereas many of the guilds also act as marketing and purchasing agents and even function as co-operatives. Through membership in an industrial guild, small entrepreneurs and businessmen are often able to obtain merchandise at good prices, even though they order in small lots, and to make a fair profit as a result of guild standardization of prices. In 1937 there was in the Palau district only one registered industrial guild, a guaranteed liability association, which was authorized to engage only in direct credit operations. It had 221 members and a capital amounting to ¥ 43,450 distributed among 869 shares. No industrial guilds were registered in the Yap district. Credit associations were much more numerous. The data on those operating in the Western Carolines in 1937 are tabulated below:

	Number	Members	Capital	Paid-up Capital	Outstanding Loans
Yap district	5	82	¥ 39,520	¥ 17,070	¥ 16,304
Palau district	77	1,590	1,046,511	623,193	619,222
Total	82	1,672	1,086,031	640,263	635,526

After 1936, all credit associations were required to be incorporated as joint-stock companies with a minimum paid-up capital of ¥ 15,000.

Bankruptcy. The Bankruptcy Law of Japan applies in the mandated islands. For fees in bankruptcy proceedings, see 227.

Insurance. No local insurance companies or underwriters are reported to operate in the islands. Most Japanese interests which are insured are underwritten in Japan. In addition, the post office system offers various forms of insurance, which presumably are also available to natives. Although little is known concerning the types of coverage available, the policy forms, the premium rates, or the actuarial bases employed, it appears that the contracts are generally very simple and that the coverages chiefly written are life insurance, annuities, and protection against certain types of property loss. Data for the year 1937 with respect to the insurance operations of the three post offices in the Western Carolines are given in the following table:

	Yap		Palau		Angaur		Total
	Number	Amount	Number	Amount	Number	Amount	Amount
New contracts written	33	¥ 6,215	2,189	¥ 494,944	58	¥ 15,709	¥ 516,868
Contracts renewed	1	417	33	4,896	-	-	5,313
Contract claims paid	-	-	14	1,293	-	-	1,293
Paid-up contracts	-	-	10	785	-	-	785
Contracts forfeited	6	208	76	617	-	-	825
Contracts in force at end of year	295	53,701	3,669	735,948	151	34,331	823,980

354. Investments

Business and Industrial Investments. Aside from land (see 341), the principal investments of individuals are in homes, shops, equipment, and improvements. The natives, whose holdings are almost wholly in land, have practically no money to employ as working capital. Of the large business organizations operating in the islands those with the heaviest investments are the Nanyo Boeki Kaisha, the Nanyo Kohatsu Kaisha, and the Nanyo Takushoku Kaisha. The organization, activities, and holdings of these and other companies, all Japanese, are described elsewhere (see 327). The South Seas Government has extensive investments in land, forests, buildings, experimental stations, power plants, and communications facilities.

Mission Holdings. The Spanish Catholic mission, the German Protestant mission, the Japanese Protestant mission, the Japanese Buddhist mission, and the Japanese Shinto Sect of Tenrikyo (see 134) have modest investments in the Western Carolines, consisting mainly of churches, temples, preaching stations, parish houses, and schools. Their lands are usually held on indeterminate leases which are free of rent.

355. Stock and Commodity Exchanges

Exchanges. There are no stock or commodity exchanges in the Western Caroline Islands.

356. Public Finance

Government Expenditures. The budget estimates of the South Seas Government must be sanctioned, annually, by the Imperial Diet. In addition to the Fiscal Law of Japan, a special Fiscal Law for the South Seas Government applies to the expenditures of the mandate

administration. Under this law the Governor is appointed as paymaster and is authorized to draw checks in payment of expenditures on the special accounts of the South Seas Government. The Governor is permitted to entrust part of his duty as paymaster to competent officials under his administration. Estimates of expenditures for the following year and actual accounts of expenditures during the preceding year are sent annually by the Governor to the Minister of Finance in Japan.

The official reports do not segregate the government expenditures for the separate Branch Governments from those for the South Seas Government as a whole. The following table lists the expenditures in full for the last year for which complete details are available, the fiscal year running from April 1, 1937, to March 31, 1938:

Item	Amount	Totals
Ordinary expenses		
Salaries, wages, allowances, and bonuses		¥ 2,111,428
Salaries of Chokunin officials	¥ 10,165	
Salaries of Sonin officials	186,736	
Salaries of Hannin officials	782,969	
Bonuses to higher officials	133,177	
Police salaries	144,705	
Extra allowances to police	220,727	
Wages of clerical employees	464,479	
Wages of service employees	152,667	
Uniform allowances	15,803	
Office expenses		767,827
Rent	36,918	
Office equipment	160,630	
Supplies	61,869	
Repairs	99,973	
Library and printing	36,278	
Communication and transportation	57,454	
Travel	302,951	
Entertainment	5,159	
Miscellaneous	6,595	
Government enterprises		590,085
Hospitals	65,877	
Meteorological Observatory	59,082	
Tropical Industries Experiment Station	103,764	
Marine Products Experiment Station	57,871	
Products Museum	931	
Communications	193,797	
Operation of ships	33,873	
Aids to navigation	5,553	
Electric-power and ice-making plants	65,988	
Manufacturing expenses	3,349	
Social services		110,299
Education	84,099	
Relief benefits for death, injury, illness, etc.	4,725	
Quarantine	9,116	
Public health	5,395	
Control of insect pests	6,964	
Administrative expenses		109,881
Enforcement of regulations	307	
Collection of delinquent taxes	43	
Police allowances and rewards	158	
Court trials and registration expenses	540	
Prisons	14,086	
Transportation of prisoners	965	
Secret service fund	10,000	
Payments of claims for damages, etc.	8,006	
Debt service and sinking fund	4,506	
Pensions	71,270	
Extraordinary expenses		
Public works		150,101
Salaries of officials of Hannin rank	3,818	
Office expenses, wages, and bonuses	22,045	
Research and investigation	3,839	
Roads	113,809	
Harbors	6,590	

Item	Amount	Totals
Construction and repairs		¥ 540,768
Salaries of Sonin and Hannin officials	¥ 16,870	
Office expenses, wages, and bonuses	29,743	
Office buildings and offices	127,264	
Official residences	194,659	
Schools	147,625	
Hospitals	8,015	
Electric power plants	1,722	
Purchase of vessels	14,870	
Land survey		43,719
Salaries of officials of Hannin rank	9,588	
Office expenses, wages, and bonuses	27,209	
Operating expenses	6,922	
Investigation of taxation system, etc.		24,069
Salaries of Sonin and Hannin officials	5,349	
Office expenses, wages, and bonuses	10,956	
Research and investigation	7,764	
Subsidies and grants-in-aid		1,123,479
Construction of South Seas Imperial Shrine	30,000	
Missions (Buddhist ¥ 3,100, Catholic ¥ 6,500, Protestant ¥ 22,000)	31,600	
Imperial Bounty Foundation (charity ¥ 4,000, education ¥ 2,000)	6,000	
Domestic Science School for Girls	3,000	
Kindergartens	3,400	
Educational associations	600	
Tours to Japan by natives	1,500	
Improvement of native manners and customs	8,547	
Assistance to Japanese settlements (local representatives ¥ 7,620, sanitary equipment ¥ 9,771, and construction ¥ 9,525)	26,916	
Community halls	10,000	
Subsidies to physicians	3,961	
Shipping subsidies	785,585	
Subsidies for commerce and manufacturing	37,037	
Agricultural subsidies	62,096	
Forest production subsidies	10,172	
Subsidies for marine products	72,983	
Subsidies for fishing equipment	30,082	
Road between Koror and Malakal Islands		35,882
Salaries of officials of Hannin rank	1,695	
Office expenses, wages, and bonuses	4,126	
Construction costs	30,061	
Palau waterworks		71,815
Salaries of officials of Hannin rank	1,094	
Office expenses, wages, and bonuses	2,722	
Construction costs	67,999	
Palau harbor repair works		892,340
Salaries of Sonin and Hannin officials	6,716	
Office expenses, wages, and bonuses	22,497	
Construction costs	261,134	
Ships and machinery	601,993	
Aids to navigation		210,080
Salaries to officials of Hannin rank	1,468	
Office expenses, wages, and bonuses	12,630	
Construction costs	195,982	
Radio communications		202,712
Salaries of officials of Hannin rank	6,871	
Office expenses, wages, and bonuses	25,529	
Construction and repair of official residences	54,237	
Operating expenses	11,093	
Construction costs	124,982	
Aviation lines		382,206
Salaries of Sonin and Hannin officials	19,634	
Construction and repair of official residences	56,302	
Bonuses	4,867	
Operating expenses	292,488	
Construction costs	8,915	

Item	Amount	Total
Forest administration		¥ 56,076
Salaries of officials of Hannin rank	¥ 7,599	
Office expenses, wages, and bonuses	17,624	
Operating expenses	30,853	
Developmental expenses		149,199
Salaries of officials of Hannin rank	11,942	
Office expenses, wages, and bonuses	66,118	
Plant inspection	2,697	
Copra inspection	4,488	
Exhibitions and competitive shows	9,830	
Investigation of mineral resources	13,283	
Research in land utilization	8,096	
Establishment of colonies	9,125	
Economic institutions (including a secret fund of ¥ 10,000)	23,620	
Total of ordinary expenses		3,689,520
Total of extraordinary expenses		3,882,446
Grand total of all expenditures		7,571,966
Unexpended balance of budget		1,100,000
Total budgetary expenditures for the year		8,671,966

The budget of the South Seas Government for the fiscal year 1940-41 included the following items for developmental projects:

Navigation subsidy	¥ 780,000
Harbor construction at Palau	403,000
Expansion of Saipan harbor	229,000
Construction of dry dock at Palau	130,000
Improving aids to navigation	106,329
Construction of a road connecting Koror and Babelthuap Islands, Palau	204,000
Construction of roads on Babelthuap Island	200,000
Construction of roads on Saipan Island	56,000
Construction of roads on Ponape Island	30,000
Construction of roads on Yap Island	30,000
Construction of a water main on Saipan	40,000
Construction of a water main on Palau	160,000
Establishment of facilities for communication with aircraft	1,186,225
Establishment of air route facilities	512,174

Government Revenues. Unlike expenditures, the revenues of the South Seas Government are segregated according to administrative districts. The last fiscal year for which statistics are available is that running from April 1, 1937, to March 31, 1938. The following table presents these figures for the Western Carolines (the Yap and Palau districts) and for the mandated area as a whole:

Item	Western Carolines		Mandated Islands	
Revenue from taxation		¥ 73,999		¥ 5,512,785
Poll tax	¥ 23,881		¥ 131,152	
Natives (Yap ¥ 5,323, Palau ¥ 6,695)	¥ 12,018		¥ 85,760	
Non-natives (Yap ¥ 1,147, Palau ¥ 10,716)	11,863		45,392	
Port clearance dues	11		5,256,261	
Sugar	-		5,107,301	
Molasses	-		13,706	
Alcohol	-		44,871	
Alcoholic liquors	-		90,331	
Miscellaneous	11		52	
Customs duties (Palau 391 persons taxed)	33,018		101,786	
Mining tax (Yap 4 persons, ¥ 1,304; Palau 8 persons, ¥ 15,785)	17,089		23,586	
Revenue from government enterprises and property		320,783		1,493,185

Item	Western Carolines		Mandated Islands	
Post, telegraph, and telephone		¥ 155,697		¥ 414,608
Postage stamps (Yap ¥ 7,289, Palau ¥ 112,341)	¥ 119,630		¥ 281,366	
Other postal revenue (Palau ¥ 20)	20		28,737	
Telegraph (Yap ¥ 3,619, Palau ¥ 19,918)	23,537		74,034	
Telephone (Palau ¥ 12,510)	12,510		30,471	
Hospitals (Yap ¥ 3,663, Palau ¥ 70,512)		74,175		163,169
Forests		4,661		19,675
Copra (Yap ¥ 754)	754		2,371	
Miscellaneous (Yap ¥ 132, Palau ¥ 3,774)	3,906		17,304	
Electric power and light (Yap ¥ 3,664, Palau ¥ 59,946)		63,610		141,912
Rents from government property		22,640		121,061
Land (Yap ¥ 3,716, Palau ¥ 12,378)		16,094		110,966
Buildings (Yap ¥ 9, Palau ¥ 24)		33		1,042
Movables (Yap ¥ 651, Palau ¥ 5,862)	6,513		9,053	
Dividends from the Nanyo Takushoku Kaisha			632,760	
Revenue from other sources		¥ 44,925		¥ 182,832
Revenue stamps (Yap ¥ 835, Palau ¥ 18,290)		19,125		58,340
Licenses (Yap ¥ 30, Palau ¥ 190)		220		2,000
Fees (Yap ¥ 280, Palau ¥ 3,330)		3,610		6,170
Fines and confiscations of property		-		1,884
Obligatory contributions to pension funds		-		10,083
Sonin and Hannin officials	-		9,349	
Police and penitentiary officials	-		734	
Grant from Imperial Finance Ministry		-		10,000
Sale of government property (Yap ¥ 346, Palau ¥ 3,815)		4,161		15,438
Miscellaneous (Yap ¥ 211, Palau ¥ 17,598)		17,809		78,917
Total revenues		439,707		7,188,802
Balance carried forward from previous year				3,551,203
Total budgetary income for the year				10,740,005

Of the above, "Sale of government property" and "Balance carried forward from previous year" are classed as "extraordinary revenues," totaling ¥ 3,566,641. The rest of the items, totaling ¥ 7,173,364, are classed as "ordinary revenues."

Taxation System. Four kinds of taxes are levied in the Japanese mandated islands, namely, poll taxes, port clearance dues, customs duties, and a mining tax. In the Western Carolines, the greatest revenue from taxation is derived from customs duties, which in 1937 yielded ¥ 33,018. Next in importance are the poll tax and the mining tax, which in the same year brought in ¥ 23,881 and ¥ 17,089, respectively. Only ¥ 11 was obtained from port clearance dues.

A poll tax is levied on all adult male residents of 16 years of age or older. For persons other than natives the poll tax is graded according to eleven classes, ranging in amount from a maximum of ¥ 50 to a minimum of ¥ 2 per year. Natives also pay varying amounts, ranging from ¥ 40 to ¥ 1 per year. The revenue obtained from poll taxes in the Western Carolines during the fiscal year running from April 1, 1937, to March 31, 1938, is analysed in the following table:

Non-native	Yap District Persons	Yap District Amount	Palau District Persons	Palau District Amount
Class 1 (¥ 50)	-	-	18	¥ 900
Class 2 (¥ 40)	-	-	12	480
Class 3 (¥ 30)	1	¥ 30	22 (2)	690
Class 4 (¥ 20)	- (1)	10	25 (5)	550
Class 5 (¥ 15)	12 (3)	202	73 (6)	1,140
Class 6 (¥ 10)	29	290	187 (18)	1,960
Class 7 (¥ 7)	29 (2)	210	286 (19)	2,068
Class 8 (¥ 5)	24	120	320 (34)	1,685
Class 9 (¥ 4)	23 (2)	96	150 (31)	662
Class 10 (¥ 3)	31 (4)	99	86 (14)	279
Class 11 (¥ 2)	44 (2)	90	144 (14)	302
Total	193 (14)	1,147	1,323 (143)	10,716
Native				
¥ 40	-	-	-	-
¥ 25	-	-	-	-
¥ 20	-	-	1	20
¥ 15	-	-	-	-
¥ 10	-	-	6	60
¥ 8	-	-	-	-
¥ 7	-	-	-	-
¥ 6	-	-	8	48
¥ 5	39	195	1,247	6,235
¥ 4	870	3,480	-	-
¥ 3.60	-	-	-	-
¥ 3	546	1,638	100	300
¥ 2	5	10	16	22
¥ 1	-	-	-	-
Total	1,460	5,323	1,378	6,695

The discrepancies between the persons and amounts in some of the non-native classes in the above table are to be explained in all cases by the payment of the tax for only half of a year by a few persons, the numbers of whom are given in parentheses.

Persons are assigned a poll-tax by the Branch Governor on the basis of income, living conditions, and amount of property owned. Exemptions are granted to persons who have lived less than six months in the islands, to those who are poor and cannot afford to pay any tax, to those who are staying in the islands on temporary business, and to those who are engaged in the propagation of religion. The poll tax for natives is restricted to ¥ 10 per year, except that the Branch Governor may impose a tax of up to ¥ 40 on particularly wealthy persons after having obtained the approval of the Governor. In determining the amount of tax to be levied against natives the Branch Governor is expected to consult with the village chiefs under his jurisdiction. No poll tax is imposed upon natives who are supporting five or more children less than sixteen years of age, or upon persons who are decrepit or unable to work on account of bodily deformity or incurable disease. Assessments against natives may be reduced or excused by the Branch Governor in localities where disasters have occurred or where conditions are such that he deems taxation to be undesirable.

The customs laws of Japan apply today, with only minor modifications, to the mandated islands, but this has not always been true. In 1915 the islands were made an independent customs district, and customs duties were collected on trade between the islands and Japan, as they were on trade between the islands and foreign countries. For a period in 1916 import duties were not collected on imports from Japan; but later in the year they were restored with modifications in rates and changes in the commodities taxed. Saipan, Yap, Palau, Ponape, and Jaluit were declared open ports, and Kusaie was added in 1919. In 1922 the existing import and export duties between the islands and Japan were abolished, and Saipan, Palau, Angaur, and Truk were designated as open ports, to which others, including Ponape and Kusaie, were later added. In lieu of export duties a system of port clearance dues was instituted for sugar and derivative products, such as molasses, alcohol, and alcoholic liquors, shipped from the islands to Japan, Korea, Taiwan, and Karafuto. Since 1922, customs duties have been levied only on imports from foreign countries, exports being duty free.

Persons undertaking mining operations are required to pay a mining tax of one yen per year for every tsubo (equal to 3.95 square yards) of their mining concession. For many years this tax was relatively unproductive. In 1931 a concession was made for a small mine on Tobi, and in 1935 another was made in Palau. However, in 1937, with the transfer of the phosphate mines on Angaur from the South Seas Government to the Nanyo Takushoku Kaisha (see 324, 327), the mining tax became an important source of income.

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