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EDUCATION IN AMERICAN SAMOA
" WITH SPECIAL REFERENCE TO
HEALTH PROBLEMS

by

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C O N T E N T S

CHAPTER		PAGE
I	Samoa and the Samoans-----	1
II	The Changing Samoa-----	16
III	Education in American Samoa-----	55
IV	Health Education in American Samoa-----	87
	Appendix-----	192
	Bibliography-----	200

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ILLUSTRATIONS

	PAGE
FIGURE 1. MAP OF THE ISLANDS OF AMERICAN SAMOA.....	v.
FIGURE 2. CHART SHOWING THE ADMINISTRATIVE ORGANIZATION OF THE DEPARTMENT OF EDUCATION, AMERICAN SAMOA.....	82
FIGURE 3. CHART SHOWING THE ORGANIZATION OF THE PUBLIC HEALTH DEPARTMENT OF AMERICAN SAMOA.....	108

TABLES

TABLE I. POPULATION STATISTICS.....	192
TABLE II. MORTALITY STATISTICS.....	193
TABLE III. CAUSES OF DEATHS IN AMERICAN SAMOA FOR THE YEAR 1934.....	194
TABLE IV. DEATHS ACCORDING TO SEX AND QUINQUENNIAL AGE GROUPS.....	195
TABLE V. RESULT OF NOTIFICATION OF COMMUNICABLE DISEASES.....	196
TABLE VI. INTESTINAL PARASITES.....	197
TABLE VII. RESULTS OF THE TUBERCULIN TESTS IN 4675 EXAMINATIONS IN ALL DISTRICTS OF AMERICAN SAMOA.....	198
TABLE VIII. KAHN TESTS OF SAMOAN SCHOOL CHILDREN....	199

INTRODUCTION

An understanding of at least four important factors peculiar to Samoa is necessary in approaching this study concerning health education in relation to Samoan social practices. They are: A knowledge of the Samoan people and their tropical island environment; an understanding of the old Samoan social practices and the changes which are taking place; the present health situation and the attempts that are being made to improve it; and the health activities carried out in the present educational program.

The Samoan people, native to America's only inhabited possessions south of the equator are of a vigorous Polynesian heritage. Natural selection removed the unfit through the indigenous diseases and a high infant mortality, and produced a rugged people who maintained their physical fitness by active outdoor pursuits and by the use of healthful foods.

The communal life in the old Samoan social organization centered around the large family groups which were practically self-sustaining. A well established pattern of procedure outlined the duties, privileges and prohibitions of each member in the social order.

This organization was rudely upset by the introduction from the western world of revolutionary ideas

in government, land ownership, trade, religious beliefs, personal conduct, women's status and education.

This thesis is the result of an intense interest in health education which grew out of a personal study of conditions in the schools and villages of American Samoa made during the summer of 1932. A survey of health conditions shows that Samoan life is now a struggle against diseases and parasites, largely introduced, for which the people have developed no immunity and of which they have acquired little knowledge concerning efficacious treatments.

The introduction of modern practices in medicine has brought about a revolution in native thought and custom. Authorities realize that the establishing of western health ideas and activities is an arduous and delicate task, and to be effective these undertakings must be based on an intimate understanding of the Samoan people and their culture.

The present school program was formulated by educators who recognized that Samoa is in a transitory period between contrasting cultures. Education is the tool of social development, therefore the schools are confronted with the problem of helping the people build a new social order by bringing together from each of the cultures the elements which they believe to be suited to their needs. Progress is dependent upon the

sound health of the people, as all unhealthful conditions and practices stand in the way of social and economic growth. The task of the schools is to awaken the Samoans to an awareness to their health needs and help them develop solutions to their health problems.

The United States Navy through its department of public health is providing excellent health services for the Samoan people. But the greatest need, which this service inadequately provides, is the development of health consciousness and understanding within the native people. The governing policy should not be to protect and care for the Samoans, neither should it be to deny them the benefits that the scientific world has to offer. The only lasting service is that which will make it possible for them to take care of themselves.

The control of health matters by restriction and regulation is successful only under the pressure of enforcement. The possibility that Samoa may some day have civil government suggests the futility of a program wherein the native people are not prepared to carry out their own protective measures.

A program of health education which will be of real value to the Samoan people must be established on an understanding of Samoan practices and adapted to Samoa's particular needs. Its effectiveness depends

upon the degree to which the Samoans are made conscious of their health problems and the response that they show in improving their health habits and conditions.

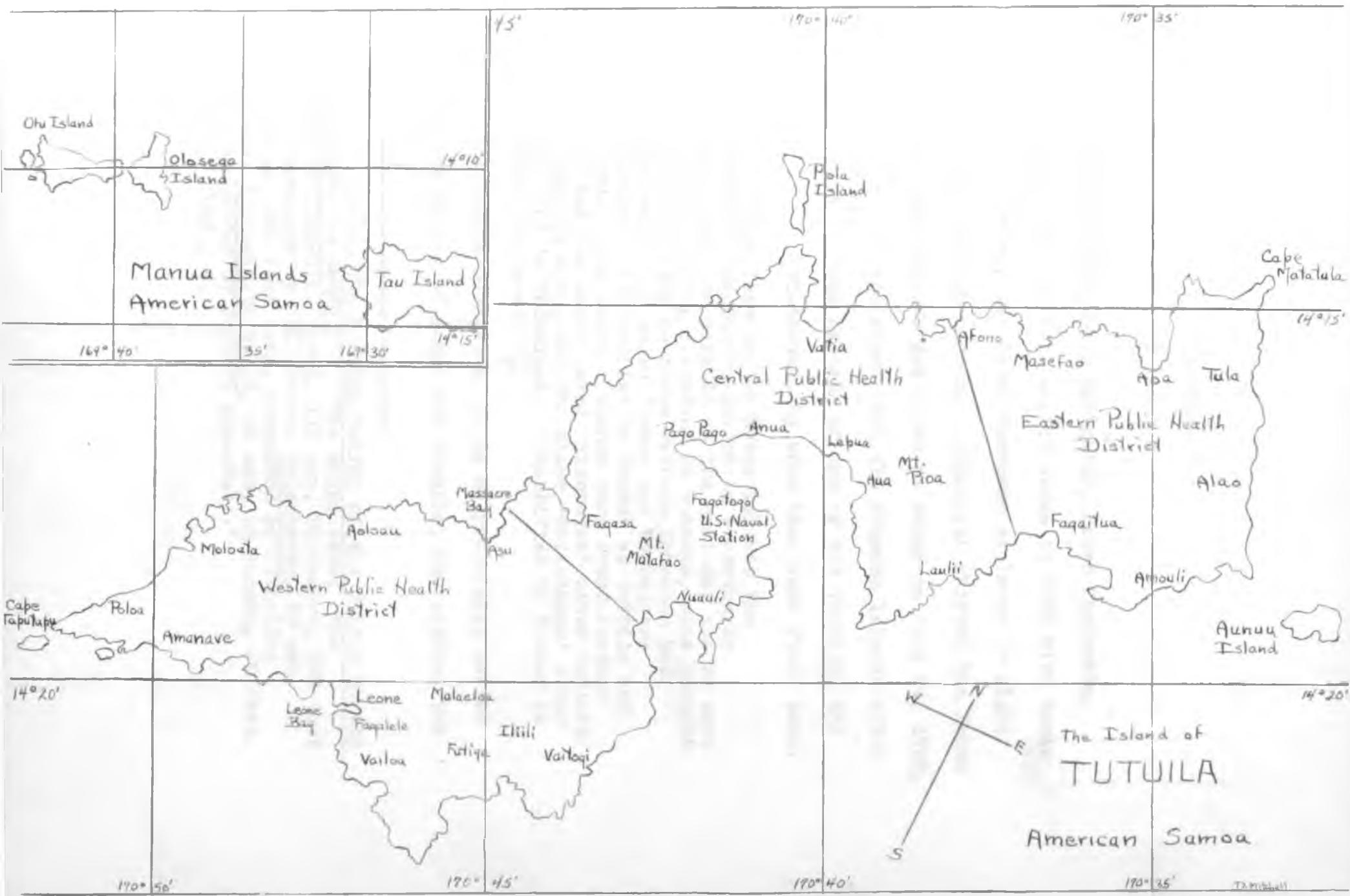


Figure 1.

CHAPTER I

S A M O A

A venturesome Dutch navigator, Jacob Roggewein, sailed into the central Pacific Ocean in 1722 with three vessels.¹ He was the first European explorer to sight islands in the Samoan group. Roggewein skirted the three most easterly islands now known as Manua on June 14, 1722, and named them the Baumann Islands after the captain of one of his vessels, the Tienhoven, by whom they were first seen.

DISCOVERY AND EXPLORATION

"Upon leaving the Manua islands the Roggewein expedition sailed in a northerly direction, and sighted on the next day two or more islands, which, according to Behrens, were thought to be the same as those Wylhelm Schouten had discovered and named 'Cocos and Verrathers Eylande.' (Identified by Kramer as Tutuila and Aunuu.) Two larger islands were found farther on, the one being named 'Tienhoven' after Captain Baumann's ship, and the other 'Groiningen' after the city in Friesland. (Identified by Kramer as Upolu and Savaii.)²

The French navigator, M. de Bougainville, sailed along the shores of Manua and Tutuila, and sighted the

1. Ryden, The Foreign Policy of the United States in Relation to Samoa, 5. "The ships were: The Admiral's flagship, Arend, 110 men, 32 cannon, 120 feet long, commanded by Jan Koster; Thienhoven, 80 men, 24 cannon, 100 feet long, commanded by Cornelius Baumann; Afrikaanshe Galei, 33 men, 14 cannon, 92 feet long, commanded by Roeloff Rosendaal."

2. Ibid., 6.

island of Upolu in May, 1768. He observed that the natives were skillful in handling their well-made canoes so gave the group the name of the "Isles of the Navigators," which name is still retained on some nautical charts.

The first explorer to go ashore in the Samoan group was the French navigator La Perouse, who visited all the islands in 1787 and determined their position. A misunderstanding between La Perouse's men and the natives resulted in the death of twelve or thirteen Frenchmen at Asu, on Tutuila, December 11, 1787. This unfortunate incident¹ branded the Samoans as a savage and treacherous people.

Captain Edward Edwards in H.B.M. frigate Pandora visited Samoa in 1791 as he was searching for the

1. Stair, Old Samoa, 27,28.
"M. de Langle, second in command to La Perouse, with twelve of his companions were killed by the natives during a fierce encounter with some boats' crews who had landed at a place now called Massacre Cove....it was a traveling party of visitors from Falelatai, a settlement on the south coast of Upolu, who happened to be staying at the place of the massacre, who actually planned the attack, and killed the foreigners. The people of Tutuila were averse to the attack and did all they could to prevent it. The natives state that the quarrel arose from the French punishing some theft. A member of the large party of natives from Falelatai, having stolen something, was hoisted to the top of the mainmast of the long boat by his thumb or hand. This led to the attack. After the conflict had ceased the Tutuila natives buried the bodies of the French left in their hands, treating them with every respect; whilst the party from Falelatai left the same night for Upolu, taking with them the boat captured from the French."

mutineers of the Bounty. He gave the first English account of the Samoan Islands, and believing that he had discovered a new island group called them the Chatham Islands.

Other explorers whose records show that they visited Samoa during the next half century were: Otto von Kotzebue, Louis de Freycinet, and J.S.C. Dumont-d'Urville.¹

Except for missionary enterprises, established by the London Missionary Society in 1830, the countries of the world had less interest in Samoa than other islands of the Pacific during the first half of the nineteenth century. These small islands had limited plantation areas, no minerals or valuable natural resources so had little to attract the trader or the nation in search of rich colonies.

An expedition was authorized by an act of the Congress of the United States on May 18, 1836, to explore and survey the South Pacific ocean in order to gather data which would make navigation safe for American whale fishermen. Charles Wilkes commanded the expedition which visited all the islands in the Samoan group in October and November, 1839, and collected much scientific data.²

1. Ryden, The Foreign Policy of the United States. 10-11.

2. Wilkes, Narrative of the United States Exploring Expedition during the years 1838-1842. 5 Vol.

Great Britain appointed a consul to Samoa in 1847, the United States in 1853, and the City of Hamburg (later Germany), in 1861. Commercial agents from England, Germany, and the United States established interests in Apia, Upolu, and conducted business with unfriendly competition during the latter half of the nineteenth century.

"Commercial rivalry ripened into national jealousy, and...when the situation at Apia became hopelessly involved and wholly beyond the possibility of local adjustment, England, Germany, and the United States took the matter in hand."¹

The three powers formed a tri-partite supervision over Samoa in 1889 and the ten years to follow were troublesome due to international jealousies and native political unrest.

"A tri-partite control could obviously not be effective. In 1900 Britain, busy with the Boer War and in no position to risk the ill-feeling of other nations, withdrew her interest in Samoa in consideration of other imperial concessions, leaving Germany and the United States to partition the group."²

Germany and the United States each desired to establish a coaling base and to carry on trade in Samoa. The United States had signed a "treaty of

1. American Samoa. Hearings before the Commission appointed by the President of the United States in accordance with Public Resolution No.89, 70th Congress, 276.

2. Keesing, Modern Samoa, 74.

friendship and commerce"¹ at Washington, which gave the United States the privilege of entering and using the port of Pago Pago² as a station for coal and naval supplies.

"Samoa gave Germany the right to establish a naval station in the harbor of Saluafata, Upolu, and engaged not to grant a similiar right in that harbor to any other nation."³

The American interests were established in eastern Samoa and the German interests were in western Samoa so the two nations partitioned the group.

On February 16, 1900, the President of the United States issued a proclamation, drawn up and signed by the three powers, Great Britain, Germany, and the United States, which gave the United States all rights and claims over Tutuila and the islands of Samoa east of the longitude 171 degrees west of Greenwich. Germany was given the four islands west of 171 degrees west of Greenwich.

1. American Samoa, A General Report by the Governor, 25.

2. The Pacific Islands (Eastern Groups), Vol. II, Fourth Edition, 1933, is the authority for the spelling of place names throughout this study, as recommended by the editor of the publications of the B.P. Bishop Museum, Honolulu.

The Samoan Dictionary: English and Samoan, by George Pratt, printed at the London Missionary Society Press, Malua, Upolu, is the authority for the spelling of the Samoan words used in this study.

3. American Samoa, A General Report, 25.

The five eastern islands are now known officially as American Samoa.¹ Germany held Western Samoa

"until expeditionary forces from New Zealand seized the colony at the outbreak of the Great War. Western Samoa was allotted to New Zealand as a (League of Nations) mandate under the Treaty of Versailles."²

A brief description of the islands and their topography will give a better understanding of the natural environment of the Samoan people.

"Man is a creature of his environment. Climatic conditions, physical features and the like have a distinct bearing on his material development. Both set rather definite limitations on his accomplishments. He is both controlled by and himself controls within limitations, his environment."³

The rich soil of the rugged volcanic islands supports luxuriant plant life which forms a verdant growth from the beach to the summit of the mountains. The mountainous ridges extending the length of the larger islands or rising to conical peaks on the smaller islands attain an altitude of fifteen hundred to two thousand feet. They are cleft with deep valleys made by stream erosion as the water from the

1. American Samoa. A General Report, 55.
"The President issued Governor Crose a commission as 'Governor of American Samoa,' dated October 24, 1912; and American Samoa then became the official title of all the Samoan Islands governed by the United States."
2. Ryden, The Foreign Policy of the United States, 574.
3. Wist, Report of the Visiting Staff to the Samoan Teachers Institute, 1932-1933, 109.

heavy rains in the mountains has rushed down to the sea during the centuries past. Most of the streams are intermittent, being swollen during the torrential down-pours then running dry between rains. The rich alluvium carried down to the beach by the streams has formed fertile flat areas, although sometimes very small, yet furnishing picturesque village sites. The coast is so rugged that transportation of native products between villages is by canoe except where the government has in recent years constructed a highway. The rocky trails which scale the ridges between the villages are suitable only as foot paths.

"Coral reefs, surrounding practically every island, are also attractive, and, indeed, useful feature of the group, making it possible for the Samoan to travel safely in the lagoons from village to village in their boats and canoes, and to carry on their fishing industry."¹

The following table of distances shows Samoa's location from Pago Pago harbor to:²

Honolulu-----	2,276 miles
San Francisco-----	4,150
Apia, Western Samoa-----	80
Suva, Fiji-----	688
Auckland, New Zealand-----	1,565
Sydney, New South Wales-----	2,377
Guam-----	3,159
Yokohama, Japan-----	4,133

1. Hyden, The Foreign Policy of the United States, 3.

2. American Samoa, A General Report, 2.

Tutuila, the largest island in American Samoa, is about 18 miles long and from five to six miles wide and contains approximately 40.2 square miles of land. A rugged ridge of mountains runs the entire length of the island, the highest point, Mt. Matafao, is 2,141 feet in elevation.

Pago Pago bay, on the south coast of
AMERICAN SAMOA
Tutuila is called the safest and best harbor in the South Seas. Here is located the United States Naval Station and the seat of government for American Samoa. The small island of Aunuu which lies just off the eastern end of Tutuila, is considered a part of Tutuila and will be so included in this study. Tutuila appears much the same today, except for the Naval Station, as it did to the missionaries in 1840, one of whom wrote:

"The island presented a most beautiful appearance as we approached it, being composed of high, wild, steep, and richly wooded hills. The reefs do not surround the island entirely. There is a break at the mouth of the harbor which forms a narrow pass, and the rollers breaking over the reef on each side produce a gran effect. The harbor is small, and winds at the mouth; so that, when you get within it, it is like a peaceful lake, surrounded by rich and rugged mountains, rising up apparently from the water's edge. Every small flat between their base and the water forms the site of a little village."¹

1. Lundie, Missionary Life in Samoa, 78.
Quoted from a letter written from Pago Pago, March 16, 1840.

The Manua group consists of three small islands about 67 miles east of Tutuila. The largest of these, Tau, is 14 square miles in area, while the combined area of Olosega and Ofu, some six miles distant from Tau, is about 3.7 square miles.¹ There are no harbors in the Manua group but vessels anchor off shore and discharge their passengers and cargo into small boats which are able to pass safely through channels in the reef to the villages.

Two distant islands governed by the United States and officially considered a part of American Samoa will not be included in this study. They are: Swain's Island, 210 miles north of Tutuila, and Rose Island, an uninhabited atoll east of the Manua group.

The mandated territory of Western Samoa, under New Zealand control, consists of four islands the total area of which is some fifteen times that of American Samoa. Savaii, the largest island, is rugged and mountainous and not as important commercially as Upolu, which has broad fertile plantation areas. Apia, on Upolu, is the largest town in the Samoas and the seat of government for Western Samoa. The small islands of Apolima and

WESTERN SAMOA

1. American Samoa, A General Report, 3.

Manono lie between the large islands and are relatively unimportant. Western Samoa does not come within the scope of this study although the people are of the same stock and through continuous contact have the same customs and problems.

The climate of Samoa is tropical but tempered by the southeast trade winds which blow regularly during the greater part of the year.

"The year may be roughly divided into a wet season (November to March) and a dry season (April to October). However the precipitation is high throughout the year. The average rainfall for 26 years (1900 to 1925, inclusive) was 197.15 inches. February showed the greatest monthly average, 21.73 inches; and August the least, 7.81 inches.

"The temperature is highest from December to May, inclusive. The records for 26 years show that February is the hottest month with an average of 82.28 degrees Fahrenheit; and July the coolest, with an average of 80.21 degrees Fahrenheit. The highest daily average temperature noted during the six years, 1920 to 1925, inclusive was 89.66 degrees Fahrenheit on February 16, 1920; and the lowest was 73.66 degrees Fahrenheit on November 6, 1921.

"The relative humidity is always high, being greatest (70 to 90 percent) in the wet season, and least (40 to 60 percent) in the dry season. The lowest average humidity is noted at about 2 p.m. and the highest at about 11 p.m."¹

1. American Samoa, A General Report, 5.

THE SAMOAN PEOPLE

The Samoan people are one branch of the large Polynesian racial group who inhabit the islands in the central and eastern Pacific ocean.

The Samoans account for their presence on their islands by many interesting legends which have long been a part of their folk-lore.¹

"The ancestors of the Polynesian people are held by most scientists to have been a Caucasian offshoot which worked east from south of the Himalayas and reached the islands of the Malay Archipelago known collectively as Indonesia. There they came in contact with the Mongoloid ancestors of the Malays who had pushed south into the same region. A certain amount of intermixture took place, followed by conflict which resulted in the push east into the Pacific of the mixed Caucasian-Mongoloid people. This mixed people, largely Caucasian and to a lesser degree Mongoloid, formed what are now termed the Polynesians."²

THE ORIGIN, MIGRATION
AND CULTURE OF THE
SAMOAN PEOPLE

"They went as far as the Malay Islands, perhaps, and temporarily settled down. Here some inter-married with the Malays who were themselves part Mongolian. How long they stayed there we do not know. But again they continued eastward. It is thought that they moved from island to island, north of New

1. Stair, Old Samoa, 212-215; Wilkes, Narrative of the United States Exploring Expedition, 3:132; Williamson, Religious and Cosmic Beliefs of Central Polynesia, 1:47-55.

2. Buck, Ancient Hawaiian Civilization, "Polynesian Migrations," 19.

Guinea. Where ever they stayed for any length of time they left their trace, bits of their language, elements of their culture, even small groups of their descendants. Incidentally they too may have absorbed some of the culture and blood of the peoples with whom they came in contact. As far as New Caledonia and Fiji their travels were made difficult only by the native inhabitants, for the islands along the route were large and high, and not so very far apart. Beyond Fiji, however, their navigation problems began. Out upon an unexplored expanse of ocean, with widely spaces, small oceanic islands, these bold adventurers sailed, until they reached Samoa and Tonga." 1

"In time, as the Polynesians adjusted themselves to conditions in the various island groups, the roving urge lessened. Those families occupying the Samoan archipelago achieved a degree of unity among themselves and evolved a special type of Polynesian culture peculiar to their own group; Samoans and Samoan life come into being as distinct from people and cultures elsewhere in Polynesia. Yet communication with other islands did not cease entirely. The Samoans visited and were visited by the Fijians and Tongans. Their princely families intermarried. Indeed, as the oral histories show, hostilities took place as a result of which Samoa was actually conquered and made tributary for a time to each of these peoples. In 1787 La Perouse, the first white man to set foot in the group, noted among the Samoans a distinctly darker strain, and this may also be seen today; it is due to the infusion of Melanesian blood mainly from Fiji. Apparently contacts were maintained also with the Wallis and Tokelau Islanders, even with Polynesians farther away." 2

"The Samoans are a fine race of men, their average height being five feet ten inches. Many, both male and female, have very handsome

1. Bryan, Hawaiian Nature Notes, "Whence the Polynesians?" 66.

2. Keesing, Modern Samoa, 15-16.

figures, and would be fine models for a sculptor, whilst some of the younger females are very good looking. Their complexion is brown, but it is difficult to name a particular shade as they present a great variety of color.¹ La Perouse, who saw them before they began to use clothing to any extent describes the color as closely resembling that of the Algerines and other nations of the coast of Barbary....The features of the Samoans are rather flat but their teeth are regular and good. The color of the eyes, as also that of the hair, is usually black, excepting in a few cases of albinos."²

An understanding of the place of the Samoans among the various racial groups is of vital importance to the educator, native administrator, or any individual who attempts to direct or to serve these people.

The Samoans have often been called the "only pure race that survives in Polynesia." It should be pointed out that neither the Samoans nor the Polynesians should be called a race. For the Polynesians, as has just been shown, are the result of the intermixture of the Caucasian, Mongoloid, and Negroid racial stocks. Although the Samoans lived in their own island group and developed certain cultural and even physical characteristics they were not free from the infusion of other blood before the arrival of the Europeans.

1. Stair, Old Samoa, 63, "The Samoans disliked the white color of the Europeans, and often jocularly said to me, when alluding to my sunburnt appearance when much exposed, 'Why, you are becoming as handsome as a Samoan'."

2. Ibid., 58.

With the arrival of the explorer, trader, and settler miscegenation took place introducing blood from all the racial groups.

The influx of foreign people with their cultures and vices has not taken place to the degree that it has elsewhere in Polynesia.

"Samoa has had less attraction for such visitors than some other islands, notably Tahiti, due perhaps to the fact that Samoan conservatism is difficult to break through, and the organization of life somewhat hard to understand and appreciate."¹

The problems of Samoa today deal largely with the native Sampan who outnumbered all others eight to one in American Samoa.²

The white trader and colonizer has criticised the Polynesian for his failure to labor according to European standards and has branded the Polynesian as lazy.

"Samoan life is a close adjustment to a tropical climate and a fertile but isolated island environment. The economic system has as a central idea a minimum of effort, in contrast to white economic ideals such as maximum production and efficiency. This seems to be a conscious sentiment among the Samoans, who say that life is good because it is easy; it underlies the economic communalism and the lack of disciplined and sustained activity."³

1. Keesing, Modern Samoa, 27.

2. Ibid., 32. The 1930 Census, the last census taken, gives the number of native Samoans as 8,926, and all others including the United States Navy Personnel as 1,129.

3. Ibid., 29-30.

Samoan industry and intelligence cannot be judged by American standards. When the critics consider the amount of labor necessary to provide all the materials common to Samoan culture they must agree that the Samoan people made good use of the elements in their environment, displaying both industry and intelligence.

"Recognizing the limiting effect of environment and outside contacts, we can assume that the Samoans do have the native intelligence to think and think straight about their problems and, as a result, will be able to solve their own problems of social and material adjustment."¹

"...the intellectual powers of the Samoans so far as they are stimulated in the course of assimilating and maintaining the type of life outlined, follow patterns remote from those of the differently disciplined white mind. To the white man the Samoan appears 'child like;' but this is only in relation to progress in the white culture; correspondingly the white man is no more than childlike in his grasp of what comprises Samoan culture."²

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1. Wist, Report of the Visiting Staff, 121.
 2. Keesing, Modern Samoa, 31-32.

CHAPTER II
THE CHANGING SAMOA

The degree of civilization in which the people of Samoa were living when the first foreigners visited them will be spoken of in this study as "old Samoan" culture.

"The Samoans would doubtless continue in their ancient ways of life, satisfied and happy, if they could remain untouched by outside forces. And if it were possible for them to live in isolation from the modern, busy world, their friends would perhaps do best to leave them so, for there is little in the efficiencies of western industrialism that is needed for successful life in a tropical island group and little in the customs of Europe or America that seems superior to the life which the Samoans have built up for themselves over the many centuries during which they have existed in these small remote islands of the South Pacific.

"But Samoa can no longer live to itself alone. Western civilization is already a powerful factor and western influence will doubtless increase with almost geometric progression during the decades immediately ahead."¹

The problems of the present or the "changing Samoa" can best be understood when viewed in the light of old Samoan practices. This chapter will

1. Embree, "Comments on American Samoa." Studies in Samoa by a Commission of The Barstow Foundation, I.

include a study of some of the Samoan social and political organizations and customs as they functioned in old Samoa, and the changes that have resulted from foreign contacts. This knowledge is of prime importance to educators or administrators who seek to work out a program or policy to meet the needs of the Samoans.

"It seems obvious to the writer that no constructive thinking can go into the problem of developing an intelligent program of education for Samoa without a reasonable knowledge of the people themselves. It is a truism that, by and large, it has been the white man's policy to disregard this aspect wherever he has gone."¹

1. Wist, A Report of the Visiting Staff, 115.

CHANGES IN THE SOCIAL CUSTOMS OF SAMOA

Early visitors wrote interestingly of the social organization of old Samoa which was distinctly a communal one. The family was the unit of life, not the individual. The term family is used in a broad sense as it often included from ten to forty persons living under one family head or matai. Within the group there were usually a number of households, each living in its own fale (house).

Property was not held personally but was shared by the family. Each family held a title which permitted them to use a portion of land within the village, and here their thatched houses were built. Their plantation or land area for the cultivation of the food crops was often located inland from the village. The villagers shared the rights to fish in the sea, reef, or lagoon near the village.

The matai was selected by the family as the most capable of the older men to direct the activities of the group. He represented the family politically, directed the individuals in their work of producing and preparing food, and kept harmony within the family by dividing proportionally the products of the combined labors of the individuals.

A glimpse into one of these communal families might show the eldest brother as the matai, living in his large fale with his wife and children, the oldest of whom might also be married and living with his wife and children in the same house. Several other brothers or cousins would have their fales close by where they were rearing families. In some of the homes distant relatives or close friends had taken up their abode and were cheerfully accepted into the family.

The men in this group under the leadership of the matai planted, cultivated, and harvested the food crops, brought the products back from the plantation and prepared the food for consumption. The food for the entire family might be cooked in one oven, and then distributed by the matai to the separate households where the meals were eaten. The men fished for the deep sea fish, kept the houses in repair, and even engaged in war for the honor of the village or district.

The women in the family worked at various tasks to supply the needs of the entire group. They plaited the laufala (pandanus) mats for floor coverings and the finer ie tonga mats for ceremonial use and for property exchange. They made siapo or bark cloth to supply the simple clothing needs. The women fished in the lagoon and along the shore. They also gathered herbs in the mountains for medicines and for dyes.

The Samoan women loved their children but spent very little time training them. The care of the babies and younger children was given over almost entirely to the girls in the early 'teen age. The girls about the home learned to do the household tasks by observing the older women at work. The younger boys formed gangs and played around the village. As the boys grew older they accompanied the men into the plantations or on fishing trips. For the most part the young people grew up in the large family group where little attention was paid to their training. More specific references to the education of the youth will be made in Chapter III.

As the young people approached adulthood and were ready to assume responsibility they became the center of the attention of the family.

"Until a young man was tattooed, he was considered in his minority. He could not think of marriage. When a youth, therefore, reached the age of sixteen, he and his friends were all anxiety that he should be tattooed."¹

SOCIAL PRACTICES "There was a custom observed by the other sex worth noticing....About the time of entering into womanhood, their parents and other relatives collected a quantity of fine mats and cloth, prepared a feast, and invited all the unmarried women of the settlement. After the feast the property was distributed among them, and they dispersed. None but females were present."²

1. G. Turner, Samoa, 89.

2. Ibid., 91.

"Marriage contracts were never entered into before the parties reached the years of maturity just described. Considerable care was taken to prevent any union between near relatives; so much so, that a list of what they deemed improper marriages would compare with the 'Table of kindred and affinity.' They say that, of old, custom and the gods frowned upon the union of those in whom consanguinity could be closely traced. Few had the hardihood to run in the face of superstition; but if they did, and their children died at a premature age, it was sure to be traced to the anger of the household god on account of the forbidden marriage."¹

After marriage the young couple usually made its home in one of the households in the husband's family group. The bride took her place among the women of the family. The young man continued his work on the plantation and at the tasks that the matai assigned. Marriage gave to the man some dignity which would in time lead to greater honor and prestige.

The products of the combined labors of the family were used by the households or distributed. Samoan customs required a circulation of material things which prevented the accumulation of great wealth by individuals or families. There was a constant passing of products between relatives and friends. A request was never refused, yet in giving the donor knew that he might make a similiar or even greater request at any time.

1. G. Turner, Samoa, 92.

Samoaan hospitality required the hosts to provide food, shelter and even gifts to those who came as guests.

Whole villages made malagas, or journeys, and were supported by other villages for a period of time.

Gifts were brought in celebration or observance of such occasions as: an election to a chiefly title, an important fono (meeting of the chiefs), a birth celebration, a wedding, a death ceremony, and the welcoming of visitors. On these occasions the gifts would be assembled and redistributed by a well defined ceremonial distribution which was carefully observed.

"Two types of goods formed a kind of standard currency in these transfers of wealth: food, and finely woven mats. The food was used for the feasting which was an essential accompaniment of all ceremony. Where necessary the matai or the council of matais would place beforehand a sa or taboo on the foodstuffs wanted for the purpose--the breadfruit trees, taro patch, pigs and the like--a system of living storage that ensured a plentiful supply, eliminating the need for banks and barns."¹

A discussion of old Samoaan family life would not be complete without a sketch of a typical day's activities of one of these large families..

At a very early hour, probably as early as 4:30 in the morning the men and women would arise in order to do the heavy work in the cool of the morning. There was no

1. Keesing, Modern Samoa, 295.

breakfast but those who wished to do so ate a bit of cold
taro or breadfruit, left over from the day before.

A DAY
IN OLD
SAMOA

The men, and sometimes a few of the women, would
leave immediately for the plantations, usually
located on the rich steep hillsides inland from the
village.

The plantation work consisted of planting or weeding
the taro, and gathering a quantity of it sufficient for
the day's needs. The large starchy tubers and tender
green leaves were placed in baskets which were plaited as
they were needed from coconut fronds. The bananas which
were ready to be harvested were gathered and new plants
set out when needed. In season, the mature breadfruit
was gathered and placed in baskets. Sufficient ripe
coconuts were picked to supply the needs for the day's
cooking. Green coconuts were opened and the cool
juice drunk to refresh the workers. Other plantation
products might be yams, arrowroot, or medicinal herbs,
and these were gathered as needed.

Such activities usually kept the plantation workers
busy until the middle of the morning. Then poles were
cut for carrying sticks and a basket or bunch of
bananas fastened at either end. Thus laden the workers
returned to the village to prepare the food for
consumption.

"Breadfruit, taro, yams, bananas, and coconuts formed the staff of life in Samoa. For about half of the year the Samoans have an abundant supply of food from the breadfruit trees. During the other half they depended principally on their taro plantations. Bananas and coconuts are plentiful throughout the year. While the breadfruit is in season every family lays up a quantity in a pit lined with stones. It soon ferments; but they keep it in that state for years, and the older it is they relish it all the more. They bake this in the form of little cakes, when the breadfruit is out of season, and especially when there is a scarcity of taro."¹

During the morning the women at home had folded away the sleeping mats and converted the one room fale from a bedroom into a living room. The younger children received some cold food and were hustled off to play in the care of the girls. The young boys amused themselves with a number of sports. Much time was spent in swimming, diving, and exploring the shore and reef.

The men who did not go to the plantations often went fishing in canoes for the bonito and other large fish. The women brought in small fish, seaweed, and shell fish from the reef and shoal waters.

"The lagoons and reefs furnish a large supply of fish and shell fish, of which the natives are very fond; and occasionally all, but especially persons of rank, regaled themselves on pigs, fowls, and turtle."²

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1. G. Turner, Samoa, 107.
 2. Ibid., 105.

The cooking was done by the men in a shallow oven called an umu.

"The Samoans had and still have, the mode of cooking with hot stones which has been often described as prevailing in the South Sea Islands. Fifty or sixty stones about the size of an orange, heated by kindling a fire under them, form, with the hot ashes, an ordinary oven. The taro, breadfruit, or yams, are laid among the stones, a thick covering of breadfruit and banana leaves is laid over all, and in about an hour all is well cooked. In the same oven they bake other things, such as fish, done up in leaves and laid side by side with the taro and other vegetables. Little bundles of taro leaves, too, mixed with the expressed juice of the coconut kernel, and some other dishes, of which coconut is generally the chief ingredient, are baked at the same time, and used as a relish in the absence of animal food.

"Salt water is frequently mixed up with these dishes, which is the only form in which they use salt. They had no salt, and were not in the habit of preserving fish or pork otherwise than by repeated cooking. In this way they kept pork for a week, and fish for three weeks or a month. However large, they cooked the entire pig at once; then using a piece of split bamboo as a carving knife, cut it up and divided it among the different branches of the family. The duties of cooking devolved on the men; and all, even chiefs of the highest rank, considered it no disgrace to assist in the cooking-house occasionally." ¹

While the food was steaming in the umu the adults bathed in the sea or in a fresh water stream, and dressed in clean garments. Their dress was well suited to the climate.

"During the day a covering of ti leaves (*Dracaena terminalis*) was all that either sex

1. G. Turner, Samoa, 111-112.

thought necessary. They sewed ti leaves together and made themselves aprons. The men had a small one about a foot square, the women had theirs made of longer ti leaves, reaching from the waist down below the knee, and made wide, so as to form a girdle covering all around. They had no regular covering for any other part of the body. Occasionally, during rain, they would tie a banana leaf round the head for a cap or hold one over them as an umbrella. They made shades for the eyes of a little piece of plaited coconut leaflet; and sometimes they made sandals of the plaited bark of the Hibiscus tiliaceus, to protect the feet while fishing among the prickly coral about the reef." ¹

"The lava lava, also common to both sexes, was made of native cloth or siapo, and also of various kinds of mats....The finer descriptions of mats (ie tonga) were worn by unmarried females at their dances, but on ordinary occasions strong shaggy mats, woven or rather plaited from the bark of trees, were worn. Since the introduction of Christianity large quantities of cloth, print and calico of European manufacture have been brought to the islands, and are eagerly bought by the natives." ²

"Their fine mats were, and are still, considered their most valuable clothing....These mats are thin and almost as flexible as a piece of calico.

"Another kind of fine mat for clothing they weave out of the bark of a plant of the nettle tribe....These are shaggy on one side and when bleached white, resemble a prepared fleecy sheep-skin." ³

When the Samoan people had bathed and dressed they were ready to open the oven and partake of the first prepared meal of the day. The matai divided the food

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1. G. Turner, Samoa, 118.
 2. Stair, Old Samoa, 115.
 3. G. Turner, Samoa, 120-121.

and it was carried in baskets to the households in his family group.

After the noonday meal was cleared away the family slept. The hot afternoon was not suited to physical labor so the people rested until the cool of the evening. European visitors observed that the Samoans slept during the afternoon and branded them as lazy. By rising early in the morning the Samoans worked six to eight hours before noon, but the Europeans, prone to sleep much later, had not considered this.

The lack of good light made it necessary for the women to do most of their household tasks, including the plaiting of laufala mats and the making of siapo (tapa), during the daylight hours. Since the man's work was done during the day this allowed the evening and night for amusement and entertainment.

The principal meal in the Samoan household was in the evening.

"At the evening meal every family was assembled; and men, women, and children all ate together. They had no tables, but seated themselves cross-legged round the circular house on mats. Each had his portion laid down before him on a breadfruit leaf; and thus they partook in primitive style, without knife, fork, or spoon. Should any strangers be present, due respect was shown to them by laying before them 'a worthy portion.' After the meal, water to wash was handed round, and a rub on the post of the house was the usual table napkin.

"The head of the family, in taking his cup of 'ava at the commencement of the evening meal, would pour out a little of it on the ground, as a drink-offering to the gods, and, all being silent, he would utter aloud the following prayer:

'Here is 'ava for you, O gods!
Look kindly toward this family; let it prosper and increase; and let us all be kept in health. Let our plantations be productive; let fruit grow; and may there be abundance of food for us, your creatures.

'Here is 'ava for you, our war gods!
Let there be strong and numerous people for you in this land.

'Here is 'ava for you, O sailing gods!
Do not come on shore at this place; but be pleased to depart along the ocean to some other land!"

"It was very common to pray with an offering of 'flaming fire,' just before the evening meal. Calling upon some one to blow up the fire and make it blaze, and begging all to be silent, a senior member of the family would pray aloud as follows:

'This is light for you, O king and gods superior and inferior! If any of you are forgotten do not be angry, this light is for you all. Be propitious to this family; give life to all; and may your presence be prosperity. Let our children be blessed and multiplied. Remove far from us fines and sickness. Regard our poverty; and send us food to eat, and cloth to keep us warm. Drive away the sailing gods, lest they come and cause disease and death. Protect this family by all your presence, and may health and long life be given to us all.'"²

1. The sailing gods were the foreigners in their sailing vessels whom the Samoans had learned to look upon as a source of disease, and death.

2. G. Turner, Samoa, 116.

The Samoans did not make or use alcoholic beverages although there were several native plants which might have been fermented into spiritous liquors.

"The young coconut contains about a tumbler full of a liquid something resembling water sweetened with lump-sugar, and very slightly acid. This is the ordinary beverage of the Samoans. A young coconut baked in the oven yields a hot draught, which is very pleasant to an invalid. They had no fermented liquors; but they made an intoxicating draught from an infusion of the chewed root of the 'ava plant (*Piper methysticum*). A bowl of this disgustingly prepared stuff₂ was made and served out when a party of chiefs sat down to a meal. At their ordinary meals few partook of it but the father, or other senior members of the family. It was always taken before, and not after the meals."₃

The drinking of kava was a necessary formality which preceded every meeting or ceremony. The men of rank, who were the only ones to partake of the kava, seated themselves in a circle usually in the fale. The taupo or some favored maiden presided over the kava bowl. She was assisted by a young man, usually the son

1. Ava, or kava as it is now called, is not intoxicating but is a slightly narcotic drink.

2. The custom of having the village maidens chew the fibrous kava root and spit it into the kava bowl was frowned upon by the early Europeans in Samoa. As a health factor this custom would be much more dangerous now than of old due to the introduction of many diseases which may be spread by the bacteria of the mouth, throat and nose. The kava root is now pounded upon stones which are to be found outside nearly every Samoan guest house.

3. G. Turner, Samoa, 113.

of a high chief, who brought the pounded root and the water. The taupo prepared the infusion and gracefully filled a kava cup which was presented in proper fashion by the young man to each of the chiefs in order of his rank.

"Among a formal party of chiefs it was handed around in a coconut shell cup with a good deal of ceremony. When the cup was filled the name, or title rather, of the person for whom it was intended was called out; the cup-bearer took it to him, he received it, drank it off, and returned the cup to be filled again, as the portion of another chief.¹ The most important chiefs had the first cups, and following the order of rank, all had a draught. The liquor was much diluted; few drank to excess; and, upon the whole, the Samoans were perhaps among the most temperate 'ava drinkers in the South Seas. The old men considered that a little of it strengthened them and prolonged life; and often they had a cup the first thing in the morning."²

The tabu, that all-powerful force in Polynesia, placed certain limitations on the food of individuals and families in Samoa.

"Some birds and fishes were sacred to particular deities,...and certain parties abstained from eating them. A man would not eat a fish which was supposed to be under the protection and care of his household god; but he would eat, without scruple, fish sacred to the gods of other families. The dog, and some kinds of fish and birds, were sacred to the greater deities...and,

1. The common kava cup now harbors the same dangers as the common drinking cup. Since the introduction of influenza, tuberculosis, and such communicable diseases the kava ceremony is a more serious health problem than in old Samoa.

2. G. Turner, Samoa, 113-114.

all the people rigidly abstained from these things. For a man to kill and eat anything he considered to be under the special protection of his god, was supposed to be followed by the god's displeasure in the sickness or death of himself or some member of the family. The same idea seems to have been a check on cannibalism, as there was a fear lest the god of the deceased would be avenged on those who might cook and eat the body."¹

"During some of their wars, a body was occasionally cooked by the Samoans; but they affirm that, in such a case, it was always some one of the enemy who had been notorious for provocation or cruelty, and that eating a part of his body was considered the climax of hatred and revenge, and was not occasioned by the mere relish for human flesh."²

The most universally popular amusement in old Samoa was singing and dancing.

"The Samoans made a song for every trivial event. In Samoa perpetual song and dance, perpetual games, journeys (malagas), and pleasures make an animated and a smiling picture of the island life, and the Samoans are today the gayest and best entertained inhabitants of our planet....They are easy, merry, and pleasure loving. Fine dress is a passion and makes a Samoan festival a thing of beauty. Song is almost ceaseless. The boatman sings at the oar, the family at evening worship, the girls at night in the guest house, sometimes the workman at his toil. No occasion is too small for the poets and musicians; a death, a visit, the day's news, the day's pleasantries will be set to rhyme and harmony."³

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1. G. Turner, Samoa, 112-113.
 2. Ibid., 108.
 3. American Samoa, A General Report, 7-8.

The songs and dances were enjoyed by the entire family. The boys and girls learned to dance at an early age and were allowed to exhibit their talents during the early part of an evening's entertainment. The most skillful of the adult entertainers claimed the attention of the group as an evening of merriment was well under way.

The fiafia, or evening of fun, was held in one of the large thatched houses and usually the whole village was welcome to participate. The fiafia might last until midnight, when the families returned to their own fales.

"A house, after the usual Samoan fashion, has but one apartment. It is the common parlor, dining room, etc., by day, and the bedroom of the whole family at night. They do not, however, herd together indiscriminately. If you peep into a Samoan house at midnight, you will see five or six low oblong tents pitched (or rather strung up) here and there throughout the house. They are made of native cloth, five feet high, and closed all round down to the mat. They shut out the mosquitoes, and enclose a place some eight feet by five; and these said tent looking places may be called the bedrooms of the family. Four or five mats laid loosely, the one on the top of the other, form the bed. The pillow is a piece of thick bamboo, three inches in diameter, three to five feet long, and raised three inches from the mat by short wooden feet.

"The sick are indulged with something softer, but the hard bamboo is the invariable pillow of health. The bedding in olden times was complete with a single mat or sheet of native cloth. In the morning the tent was unstrung, mats, pillows, and sheets rolled together, and laid up overhead on a shelf between the posts in the middle of the house."¹

1. G. Turner, Samoa, 120.

The routine of activities described for a typical day in old Samoa was broken from time to time by the malaga or pleasure journey.

"The special delight of the Samoan is the malaga. When people form a party and go from village to village, junketting and gossiping, they are said to go on a malaga. Their songs have announced their approach ere they arrive; the guest house is prepared for their reception; the virgins of the village attend to prepare the kava bowl and entertain them with the dance; time flies in the enjoyment of every pleasure which an islander conceives; and when the malaga sets forth the same welcome and same joys expect them beyond the next cape, where the nearest village nestles in its grove of palms."¹

Much more might be written about the social customs of old Samoa. One is impressed with the fact that the people adapted themselves to and made good use of their tropical environment. Materially the Samoans were in a stone age culture but their social organization compares favorably with the conditions under which many of the so-called civilized and cultured nations were living at the same period of the world's history.

Although the Samoan society was considered conservative, it was inevitable that marked changes would result from the influx of foreign people.

SAMOAN
LIFE TODAY A study of the new social order in Samoa will reveal the extent of the modifications resulting from outside influence.

1. Stevenson, A Footnote to History, 12.

The Samoan family, even after a hundred years of foreign influence, continues to function under its communal organization, despite the fact that it is criticised today, as it was many years ago, in that the system discourages individual initiative.

"This communistic system is a sad hindrance to the industrious, and eats like a canker worm at the roots of individual or national progress. No matter how hard a young man may be disposed to work, he cannot keep his earnings; all soon passes out of his hands into the common circulating currency of the clan to which all have a latent right."¹

Today the large family group elects its matai and his title is recorded with the Attorney General of the Naval Government.²

The government of American Samoa forbids the sale of land to any persons except to Samoans of at least three-fourths native blood. Under this policy the property will continue to be controlled by the family groups which fact will tend to perpetuate the communal organization.

1. G. Turner, Samoa, 160.

2. Codification of the Regulations and Orders for the Government of American Samoa. 1931. Section 79--Matai Names. Page 64.

1. Every matai in American Samoa shall forward his title and designating name to the Secretary of native affairs before October 31, 1906.

2. Every person succeeding to the title of matai after Oct. 31, 1906, shall give notice of such succession to the secretary of native affairs (now attorney general) for registration.

Many of the activities within the Samoan household are the same as they were in old Samoa. The men work in the plantations and produce the staple food which they cook in the native ovens. The women plait mats for the native fale and make siapo much as they did of old. The siapo, however, is sold to purchase foreign cloth which provides more durable and sanitary clothing. Other products of the plantation or household may be sold to purchase tinned food, kerosene for lamps, and a few luxuries introduced by the papalagi (whites).

Some of the men are employed as Fitafita¹ guardsmen at the naval station and others find employment in the different departments of the naval government. These salaried workmen bring home to the family goods purchased from the naval commissary store to supplement the products which the other men in the family raise on the plantation.

The activities of the boys and girls show the greatest change in modern Samoa. The public school occupies their time for a part of the day. There they are introduced to new modes of living and develop an interest in foreign ways.

1. About 75 young Samoan men are selected by the Navy to form the Fitafita Guard. These men are enlisted for local service but under terms similar to the regular Navy personnel. They serve as seamen, guards, bandsmen, and aid in various departments in the Naval Government.

The native sports of the boys and young men have been largely supplanted by cricket, baseball, and rugby football. New songs are learned, the patriotic airs at school, and popular music through the phonograph and the talking pictures. Many old songs and dances are perpetuated and public exhibitions of them encouraged on such holidays as Flag Raising Day, and for the entertainment of prominent visitors.

The demands of modern Samoa have brought about a number of changes in the economic life of the Samoan people. With the establishment of the church and its needs for funds there was a need to produce goods which could be marketed to traders. This was greatly stimulated by the competition between villages in building larger and more modern church buildings.¹

Trading stores were established to exchange foreign goods to the Samoans for copra, the dried flesh of the coconut. This led to the extension of the coconut

1. B. F. Kneubuhl, Personal Correspondence, Pago Pago, March 9, 1936. In answer to a request for information relative to the cost of the Aunuu Church.

"I do remember that at the opening of the church the pastor in his speech stated that the total cost of the church was \$32,000. The people earned the money by making copra, mats, tapas, hula skirts, and other curios. Now that the church has been built they do not produce as they did while building it. That however is characteristic of the natives here. Once they have what they started out to get they quit work until they want something else."

plantations for copra was the chief medium of exchange. In American Samoa the plantation lands remained in the hands of the Samoan families and they gathered their own coconuts and sun-dried the flesh without the aid of foreign labor. During this period of development in the Pacific, the lands in many other island groups were acquired by Europeans and worked by indentured labor.

"Many old crafts continue in practice, indeed the Samoans are more conservative in this respect than any other Polynesian group. Dr. Buck, in his recent study of Samoan material culture, shows that many native technical processes are persisting strongly, such as house building and weaving, though others are passing or obsolete. The builders guild still maintains its importance and keeps its rituals and standard patterns in the construction of houses, but since western forms of ocean transport have replaced the large sea-going canoes, leaving as the only native forms the bonito canoe and the small paopao holding one or two men, the canoe-building craft has become of less repute. Doubtless many Samoan forms of craft work will continue for a very long time, yet in general there is clearly to be seen the start of decay in native arts and crafts, most apparent as yet in villages accessible to the centers, where buildings and goods of non-native style are increasingly popular."¹

The public officials and educators who note the gradual changes in Samoan social practices are concerned about the value of the introduced factors which are being substituted for the old. There is no official attempt to preserve the old culture for sentimental reasons.

1. Keesing, Modern Samoa, 326-327.

Neither is it considered advisable for those in position of influence to impose certain foreign customs upon the people of Samoa because those policies are suitable elsewhere. It is postulated that changes should originate with the Samoan people who are familiar with their own culture and have an understanding of the new culture which they are accepting.

A sound policy for educators and government officials regarding their dealings with and for the people of Samoa is stated in the following:

"...no matter what we may think or know is best for the native, it can never be of lasting benefit to him until he thinks and knows so, too. Hence it is not for us to tell him what to do; we have no more right to tell him what to adopt from us than we have to deny him the comforts and conveniences we may have developed. That he will adopt from us is a foregone conclusion. Forced adoption without basic understanding may well result in his ultimate extinction, and attempts at keeping him primitive may have the same consequence. Our responsibility to him can be very simply stated: Our duty to primitive man is not to superimpose, neither is it to deny; our best service to him consists in helping him to help himself."¹

1. Wist, "Ethnology as the Basis for Education" Social Science, (Vol. 10, No. 4) 345, October, 1935.

CHANGES IN THE POLITICAL ORGANIZATION
OF SAMOA

The intricate development of the Samoan political organization indicates the high regard the people had for order, ceremony and etiquette.

"...the simple fact that the Samoans have but one dialect, and free intercourse with each other all over the group, is proof positive that there must have long existed there some system of government."¹

"Those early visitors who stayed any length of time were soon impressed by an elaborate system of traditional precedence, etiquette, and ceremonial. There was noted a great respect paid to old age, also the sedate dignity of the chiefs, who even had a special 'dialect' of their own, the oratorical capacity of 'talking chiefs' who acted as their spokesmen and stewards, and the importance of the fono, or council of leaders, and of the ceremony attendant on drinking 'ava or kava, an infusion prepared from a root (Piper methysticum)."²

The political leaders within each village were the chiefs.

POLITICAL ORGANIZATION
IN OLD SAMOA

"The chiefs...are a most select class whose pedigree is traced most carefully in the traditional genealogies to the ancient head of some particular clan."³

Chiefly titles were not hereditary but the chiefs were chosen from the matai or heads of families who

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1. Stair, Old Samoa, 172.
 2. Keesing, Modern Samoa, 25-26.
 3. Stair, Old Samoa, 174.

merited the honor of a seat in the governing council. Only a few of the matai residing in any one village might be selected as chiefs, the electing being done by the fono or council, and not by a vote of the people whom the chief was to represent.

With the exception of the time the chief spends representing his people at the fono or in the reception and entertaining of other chiefs, he "shares in everyday employments, just like a common man. He goes out with the fishing party, works in his plantation, helps at house-building, and lends a hand at the native oven."¹

As a chief acquired a higher rank, usually bestowed upon him by the fono after the death of a superior chief who held the title, his duties might be lessened.

"The accompaniment of prestige and honor is usually leisure and relief from political responsibilities, where in white society the most prominent and successful people usually work hardest and receive most responsibility."²

"Each chief had generally a tulafale, who acted as his mouthpiece; and each settlement a tulafale sili, who was the leading orator of the district."³

The tulafale or talking chief spoke for his chief at the fono and at all important and ceremonial occasions. The talking chiefs advised the chiefs although the final

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1. G. Turner, Samoa, 175.
 2. Keesing, Modern Samoa, 30.
 3. Stair, Old Samoa, 85.

authority was vested in the chief. It is evident that the tulafale were ever alert to increase their wealth and power by virtue of the duties which they performed. In dividing the gifts of food and mats the tulafale retained a generous share.

The unit of the old political organization was the village. The villages were grouped into districts for the mutual benefit of the several villages. Within the district one village would be known as the laumua, or capital, and there the district meetings would be held.

Wars were usually between districts, although villages often quarrelled and came to blows. According to tradition, one district or group of districts was for a time in power over the rest of Samoa, Manua excepted, and the dominating group was known as the malo or the government.

"The malo maintained its position by intrigue and force of arms, and indulged in 'oppression, exactions, and plundering' of those for the time being subservient....apparently centuries back there were occasions on which all Samoa stood together as over against a common invader from Fiji or Tonga, but this involved no permanent cooperation."¹

Each village handled its own problems in a village meeting which was attended by the chiefs and matai.

1. Keesing, Modern Samoa, 52.

"The chiefs of the village and the heads of the families formed the legislative body of the place, and the common court of appeal in all cases of difficulty....Having no written language, of course they had no written laws, still, as far back as we can trace they had well understood laws for the prevention of theft, adultery, assault, and murder, together with many other minor things, such as disrespectful language to a chief, calling him a pig, for instance, rude behavior to strangers, pulling down a fence, or maliciously cutting a fruit tree. Nor had they only the mere laws; further back we go into their history, we find that their penalties were all the more severe. Death was the usual punishment for murder and adultery.

"The local affairs of each settlement were under their immediate control, and were discussed and decided upon in a public assembly composed of the leading men of each village or district. More weighty matters, such as declaring war or making peace, the appointment and installation of chiefs, or indeed any matters of general importance to the whole district, were deliberated upon in a general fono, or parliament of the whole district, composed of representatives of all the different settlements and villages of the district.

"These meetings were usually conducted with much formality and decorum, the general fono of the district being always held in the open air, in the great malae of the leading settlement, or laumua." ¹

"The topics discussed at these meetings varied greatly, from matters affecting the wellbeing of the whole community, to those of trifling import. Intercourse between the natives and Europeans of late years has greatly perplexed and distressed them. With native matters they were familiar, but they are sorely puzzled with European complications." ²

"Many of the speakers were eloquent. Their style of speaking was often figurative, and as

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1. Stair, Old Samoa, 84.
 2. Ibid., 89.

their addresses frequently contained allusions to their old traditions and past national history that were highly interesting and instructive in their mode of speaking, such occasions afforded good opportunities for hearing the Samoan language to advantage."¹

The members of the fono when confronted with a controversial topic discussed the problem until all members were unanimous in a certain decision. Such a practice is a distinct contrast to the European custom of arriving at a decision by a majority or plurality vote.

"It was customary for each speaker, as well as others, attending a fono to carry baskets of plaited coconut leaves containing coconut fiber for plaiting cinet, in which employment they busily occupied themselves during the whole proceedings, laying it aside as they rose to speak, and resuming it again immediately on sitting down."²

"The villages within the radius of a few miles from the place at which the fono was held provided a quantity of food, which was taken by the parties providing it to the head of their family, if in attendance at the fono, who directed its distribution, first supplying visitors from a distance. Bowls of 'ava were also brought and distributed in like manner."³

The village meeting served as a combined legislative and judicial body. Superstitious fears resulting from the ingrained tabu system were largely responsible for maintaining order.

"Samoa formed no exception to the remarkably widespread system of superstitious tabu; and the

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1. Stair, Old Samoa, 86.
 2. Ibid., 88.
 3. Ibid., 87.

extent to which it preserved honesty and order among a heathen people will be readily imagined."¹

Three organizations within each village aided the fono in carrying on its activities. First, the council of the wives of the chiefs (faletua), and the wives of the talking chiefs (tausi). This council carried on its work with a ceremony similiar to that observed by the men.

Second, the aumaga, the council of the youths and untitled men. This group spent much less time in ceremonial meetings so were expected to do much of the work of the village.

Third, the aualuma, the society of unmarried women and girls. The village taupo, or hostess, was nominally the head of this group which served in village ceremonial functions.²

Despite this well planned political organization wars were frequent in old Samoa, caused by jealousies, rivalry, ambition, and retaliation for petty offenses and even breach of etiquette. Conflicts were more common in the islands of Western Samoa, but the people of Tutuila were at times under the domination of the chiefs of Upolu, or engaged in local disputes. The people of Manua had for generations held themselves aloof from the

1. G. Turner, Samoa, 188.

2. See: Keesing, Modern Samoa, 53.
Mead, Coming of Age in Samoa

troubles of the rest of Samoa.

The missionaries did much to suppress the wars and to remove the causes for conflicts. Their influence was felt for nearly seventy years before the United States accepted the problem of formulating laws for American Samoa.

"On April 17, 1900 the high chiefs of Tutuila without any solicitation, ceded the islands of Tutuila and Aunu'u to the Government of the United States--'for the promotion of peace and welfare of the people of said islands, for the establishment of a good sound government, and for the preservation of the rights and property of the inhabitants of said islands, the chiefs, rulers and people thereof are desirous of granting unto the said Government of the United States full power and authority to enact proper legislation for and to control the said islands.'"¹

An executive order was signed by the President of the United States on February 19, 1900 placing American Samoa under the control of the Department of the Navy for a naval station. "The Secretary of the Navy shall take such steps as are necessary to establish the authority of the United States and to give the islands the necessary protection."²

Commander B. F. Tilley was assigned to the command of the Naval Station and he hoisted the flag of the

1. American Samoa, A General Report, 47.
2. Ibid., 46.

United States with appropriate ceremonies at Pago Pago, Tutuila, on April 17, 1900.

The chiefs of Manua did not accept Commander Tilley's invitation to become a part of the territory of the United States at the time the Tutuila chiefs ceded their island. However they soon sought the protection of the United States and on June 5, 1900, the flag was raised over the Manua group.

The present government of American Samoa was established upon native customs and modified by the policies issued by the Navy Department.

THE PRESENT GOVERNMENT OF AMERICAN SAMOA

"The governor is the head of the government. He derives his authority, not only from his commission as Governor of American Samoa, but also from his orders as commandant of the naval station, Tutuila. He is the maker of all laws, and his authority is supreme, subject to orders from the Navy Department.

"The administration of the laws of American Samoa devolves on the following heads of department, all of whom are American naval officers attached to the naval station, except the attorney general who is a civilian, appointed by the Secretary of the Navy:

1. Attorney General
2. Public Health Officer (senior medical officer)
3. Superintendent of Public Works (public works officer)
4. Director of Education (chaplain)
5. Chief Customs Officer (naval officer)
6. Island Treasurer (supply officer)¶

1. American Samoa, A General Report, 59.

In addition to the above named officers there are numerous officials, boards, committees and enlisted men who have governmental duties.

"There are three administrative districts in American Samoa, the eastern and western districts of Tutuila, and the Manus district.¹ They correspond to Samoan political divisions which have existed from early days. Each district is administered by a native district governor, appointed by the Governor. The districts are divided into counties, each administered by a county chief. These are also ancient political divisions. The chief whose name entitles him to be county chief is appointed by the Governor, but he holds office only during good behavior. Although the law does not require it, one of the county chiefs is selected to be district governor of his district.

"Each village is controlled by a village chief, pulenu'u, elected annually and appointed by the Governor if the selection is approved.

"The village councils are composed of the matais (heads of families) in each village, and each is presided over by the village chief, except on occasions of the election of the village chief, when the village magistrate² presides.

"Suffrage is restricted to the matais, in accordance with the Samoan custom, whereby the family, not the individual, is the unit of society.

"The district governor, county chiefs, and village chiefs have each a policeman, who acts as messenger and assists in keeping order.

"The annual fono (general gathering) is held the latter part of each year, to which all parts of the islands send delegates. The people are

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1. Codification of the Regulations and Orders
Section 3. Form of Government. No. 5, 2.
 2. The village judge, appointed by the governor.

notified in advance and have preliminary district meetings in which are discussed matters to be presented at the annual fono, and in which petitions are prepared. At the fono matters of general interest are discussed, new laws or changes in existing laws are recommended, and information is asked and given regarding all matters connected with the administration of the government."¹

American Samoa is governed by the Regulations and Orders made by the naval governors.

"Commander B. F. Tilley, U.S.N., the first commandant, in pursuance of the authority vested in him, proceeded to enact such regulations and orders as he deemed necessary, under the then existing conditions, to give the island an established form of government, twenty regulations being enacted that year. Since that time a large number of regulations have been enacted and orders made, and of the whole number many have been altogether repealed, or so materially amended that few remain in their original form."²

The Codification of the Regulations and Orders for the government of American Samoa is printed in the English and Samoan languages. Any new orders or changes in existing orders are printed in both languages in O Le Fa'atonu, a monthly newspaper distributed free of charge to all families in Samoa.

The congress of the United States on February 20, 1929, accepted the cession of Samoa and appointed a commission consisting of four members of congress and three Samoan chiefs to investigate conditions in Samoa

1. American Samoa, A General Report, 59.
2. Codification of Regulations and Orders,
Preface, v.

and to make recommendations for legislation to be passed by the congress of the United States.

The Commission embarked on the U.S.S. Omaha at San Pedro, California, September 11, 1930. Public hearings were held at Poyer School, Pago Pago, Tutuila on September 26, 27, and 30, and October 1 and 4; at Leone, Tutuila, on September 29; at Tau, Manua, on October 2; and at Nuu'uli, Tutuila, on October 3.

On January 6, 1931, the Commission through its chairman, Senator Hiram Bingham, submitted to the president of the United States for his transmission to the Congress of the United States the official report of the American Samoan Commission, together with the copy of a bill which passage they recommended, and a copy of the Civil and Penal Laws of American Samoa annotated in conformity with the recommendations of the Commission.

"The committee recommended among other things that the Samoans be granted American citizenship; that the land in the islands be acquired and held by citizens and residents of American Samoa; that the Samoan fono be permitted to determine the qualifications for Samoan citizenship, as distinct from American citizenship with the one restriction that the fono be not permitted to deny Samoan citizenship to any Polynesian of part blood, who is otherwise qualified. The report also recommended that the legislative power be placed in the Samoan fono, with the right of appeal to the president should the governor veto a measure and the fono pass it over his veto by a two-thirds vote. The report further recommended that the governor be appointed by the president with the approval of the Senate, and that the president shall be free to appoint naval officers, army officers, or civilians.

"With reference to judicial matters, it was recommended 'that in all important legal cases an appeal may be taken from the high court of Samoa to the United States district court of Hawaii,' and 'that one of the judges of that court (shall) go to Samoa from time to time as it becomes necessary to hear appeals.'

"Since the commission did not think it advisable to bring American Samoa under the constitution of the United States, it recommended that a bill of rights quite similar to the first ten amendments to the United States constitution be incorporated in the organic act for American Samoa.

"A proposed organic act was included in the report. It comprised five chapters with the following headings: General Provisions, The Legislature, The Executive, The Judiciary, Miscellaneous."¹

Congress has taken no action on the recommendations of the Samoan commission at the time of this writing.

The governmental work in American Samoa is handled by a number of well organized departments. The normal tour of duty is fixed at eighteen months by the Navy Department, so the heads of departments and personnel change frequently.

The attorney general is the only civilian who is the head of a department. He is appointed by the Secretary of the Navy for two years to serve as legal adviser to the governor, administrator of the copra fund and the native tax fund, registrar of titles, tax collector and

1. Hyden, The Foreign Policy of the United States in Relation to Samoa, 580-581.

custodian of the archives. The attorney general supervises the work of the district governors, county chiefs, pulenu'us and native police, and promulgates the proclamations of the governor.

The judicial power of American Samoa is vested in a high court, six district courts and thirty-five village courts. An American judge is appointed by the Navy Department to serve under a two year contract.

The high court consists of the governor, or the American judge as president, and two associate judges chosen from the native district judges. The high court has jurisdiction over such cases as all civil suits and rights affecting real property, civil suits between non-natives and crimes and offenses committed by them, charges of treason or murder, and crimes committed by judges or magistrates. The governor makes the final decision in all matters for there is no appeal to a higher court.

The usual district court practice is for the native district judge to hear the cases, then forward the evidence and his tentative decision to the American judge for approval. The district courts exercise jurisdiction over the lesser civil suits and offenses of non-natives, or between natives and non-natives.

The village court consists of one native magistrate. He has jurisdiction over minor civil matters between

natives, and minor crimes and offenses committed by natives. He has no jurisdiction over real property or property rights.

A chief of police is assigned to duty at the administration building and a policeman at the Samoan hospital and one at the customs office at the Naval Station. Each of the three districts has a district policeman, East Tutuila is assigned four county police and West Tutuila three county police. Each village of importance has a village policeman, the total for American Samoa being fifty-one.

The department of public works, as the name implies supervises the improvement and upkeep of such public needs as road, bridges, public buildings, and motor vehicles for public use. The head of this department is the public works officer of the Naval Station, and is an officer of the civil engineer corps, United States Navy. The department of public works has built about twenty-eight miles of roads suitable for automobile traffic, with the necessary culverts and fills. These are surfaced with crushed stone or coral except for the mile within the Naval Station which is of concrete. Native trails have been improved also. This department requires the county through which the road passes to furnish the labor, one-half free, the other half is paid for by the island government which also furnishes the tools, and building

materials. The department of public works receives an annual allotment for the upkeep and repair of all Island government buildings, the Samoan Hospital, and the branch dispensaries, the customs buildings, quarantine station, and the schools. This department repairs all of the motor vehicles owned by the island government and transports government employees to outlying districts.

The principal revenues of the Island government are obtained from poll taxes, school taxes, custom duties, proceeds from the public transportation system, charges for handling copra, license fees, passport and visas, fines and forfeitures, and the charges for treatment of patients in the Samoan hospital. Real and personal property in American Samoa is exempt from taxation.¹ A poll tax is levied annually upon every male citizen over eighteen years of age. The amount of this tax is fixed by the governor on the 15th day of December each year.

Since 1923 a budget board has handled island expenses by receiving and revising if necessary the estimates of the expenditures needed by each of the department for the year. The governor approves all budgets and expenditures.

1. American Samoa, Codification of the Regulations and Orders. Section 98. Paragraph 4, 80.

The receipts of the customs department for the fiscal year 1934 were \$75,280.62. Other receipts for the general fund and special deposit account of the government of American Samoa were from the following departments; judicial, \$2,836.45; native tax, \$18,809.62; public works, \$3,424.01; public health, \$964.65; education, \$1,141.80; and miscellaneous sources totaling \$5,305.80.

The expenditures from the general fund and special deposit account for the fiscal year 1934 by the six major departments were as follows: Customs, \$27,022.57; public works, \$24,277.82; education, \$18,306.36; native tax, \$12,896.93; public health, \$12,419.92; and judicial, \$5,619.54.¹

1. Public Health Report, June 30, 1934, 173-174.

CHAPTER III

EDUCATION IN AMERICAN SAMOA.

No program of formal schooling was evolved to train the young people to take their places in the economic and

social life of old Samoa. There is no information available to indicate that certain "training schools" existed as flourished elsewhere in Polynesia.¹

TRAINING IN
INDIGENOUS
TIMES

The boys and young men learned to do the various tasks required of the men in providing the essentials for the Samoan household. This training was acquired as the boys worked with their fathers or the older men. Under this practical learning situation the young men became proficient in plantation work, the preparation of food, fishing, and certain trades.

The girls learned to make tapa, to plait mats and baskets, and to care for children as they helped their mothers with these tasks.

1. The institution in old Hawaii which most nearly resembles our schools of today was the halau, the Temple of the Hula, which has been called the Fountainhead of Hawaiian culture. The kumu hula or teacher of the hula conducted a "boarding school" for the pupils who were under rigid training rules, learning the dances, chants, folk-lore, and tabus. Upon the completion of several years training the pupils graduated with the ceremony known as the uniki.

"For the most part the teaching of these vocational pursuits was informal and incidental. For example, the girl upon reaching the age of puberty began to participate in the vocational activities common to the women of the village." 1

"Girls always, and boys for four or five years, were under special charge of the mother, and followed her in domestic avocations. The girl was taught to draw water, gather shellfish, make mats and native cloth. The boy after a time followed his father, and soon became useful in planting, fishing, housebuilding, and all kinds of manual labor." 2

Most of the training given the young people was of a very general nature as each individual needed some skill in many vocational pursuits. However there were certain specialists in Samoa who were skilled in particular trades. "Guilds" were organized to perform such tasks as required special skill and training in housebuilding, the construction of large canoes, and tattoing. Each guild had a patron diety which gave its work a religious significance to the people.

The young men who wished to become housebuilders attached themselves to one of the carpenters' guilds and served as apprentices until they learned the trade. This might be considered vocational education where the skilled carpenters were the teachers and the pupils learned by working on the job.

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1. Wist, Report of the Visiting Staff, 132.
 2. G. Turner, Samoa, 84.

The young men had to learn a great deal about the ceremonial procedure which was such a vital part of Samoan social and political organization. No formal school was developed to give this training but the youth acquired the knowledge of the rituals over a period of years. The Samoan children began to learn the ways of their elders as they gathered outside the kava circle or fono and listened to the ceremonies. This fringe of attentive observers was tolerated at nearly every gathering although the adults discouraged any display of precocity in the children.

The young men, particularly the sons of chiefs, were organized into the sumaga, which carried on ceremonial meetings not unlike the fono of the chiefs. In the sumaga the untitled men received training which aided them in taking their places in the circle of chiefs later on.

Thus it seems that education in old Samoa, with the exception of the apprenticeship in the guilds, was informal and incidental. The young people, without being trained by special teachers at designated times, acquired both knowledge and skill in Samoan practices. Just as their parents had learned the intricate patterns of Samoan life, the young men and women fitted themselves for citizenship in Samoan society by observing their elders at work or engaged in any of the political or social

customs, and then practiced these procedures when opportunity permitted. This practical education served the needs of the people of old Samoa. The progressive vocational schools of today indorse this method of "learning by doing."

Education, in the western sense, began in Samoa with the establishment of the mission schools. John Williams, of the London Missionary Society, MISSION SCHOOLS landed on Savaii in August, 1830, and left teachers to begin the teaching of the Gospel in Samoa. Within two years they extended their teaching to Tutuila and Manua. The task of translating the Bible into Samoan was begun and in 1834 Charles Banff returned with the first books printed in Samoan, "a small reading and spelling book, a small catechism, a small hymn book, from the printing press at Huahine, Tahiti."¹

The Samoans were eager to learn, and as the Bible was the chief text used, many were converted to Christianity. Wilkes reported, after his visit to Samoa in 1839, the profound influence of the missionaries' teachings upon the native people. The London Missionary Society pastors aided by native preachers and teachers had succeeded in establishing the Ten Commandments as the law of the islands,

1. American Samoa, A General Report, 99.

and those guilty of disobeying them were punished by being denied the privilege of attending worship.

"The fear of public opinion was found to be sufficient to deter them from the commission of crimes and immoral practices. Their books are constantly before them, and a great part of their time is employed over them. Old gray-headed men may be seen poring over the alphabet, and taught by some of the youngest of the family. Many parts of the Bible had already been translated, and extensively read by the natives, many of whom could read and write well."¹

So apt were the Samoans in learning to read and write, and so sincere in their devoutness to the Christian faith, that as early as 1840 Samoan missionaries were sent to Niue, Tokelau, Ellice, the Gilberts, New Hebrides and other islands in Polynesia and Melanesia.

Rev. George Pratt, a missionary of the London Missionary Society in Samoa for over forty years, published the first edition of his Samoan dictionary in 1862 and wrote a syntax of the Samoan grammar in 1875.

Native pastors or faifeaus were trained in the London Missionary Society faith and sent to all the villages in Samoa. In addition to their work of preaching, these pastors established schools for the instruction of the children, usually from the ages of five to ten. Attendance was voluntary and

FAIFEAU SCHOOLS

1. Wilkes, Narrative of the United States Exploring Expedition, 2:79.

the session of two hours or so each morning of the week was held at the pastor's home. The instruction was in Samoan and consisted largely of the Bible stories with considerable time devoted to memorizing Bible quotations. The success of the faifeau school depended upon the ability, training, and energy of the pastor and to a certain extent upon the cooperation of the parents in the village. Some of the better trained faifeaus taught arithmetic and geography in addition to the reading and writing of Bible history. The faifeau schools laid the foundation for elementary education and so reached the whole population that Samoa has the reputation of being a country without illiteracy. "By the new century probably 99 percent of the Samoans could read and write to some extent in their own language."¹

The faamasani or district schools were established by the London Missionary Society to receive the boys who desired training above the faifeau schools. The schooling in these institutions was either of a general nature for those who wished two or three years study in the common subjects, or special work in preparation for the entrance to Leulumoega and Malua. The district school on Tutuila was at Fagalele, near Leone, and took the pupils to about

1. Keesing, Modern Samoa, 414.

The equivalent of the fourth grade. This school is still carrying on its work of preparing boys for the ministry.

The mission schools of higher learning were located on the island of Upolu. The boys from the L.M.S. district schools went to Leulumoega and from there to Malua College to complete their training as pastors. The girls received their higher schooling at Papauta.

Education was in the hands of the London Missionary Society in eastern Samoa in 1900 when the United States took over these islands. Commander Tilley, United States Navy, reported to the Navy department, May 1, 1900:

"The missionaries working in Tutuila and Manua have given me much help, especially those of the London Missionary Society. ...These devoted men have done a noble work, and the task of organizing a government is made easy by reason of their hard and patient labor among the natives. Practically all the natives of Manua and most of the natives of Tutuila are professing Christians."¹

The residents and Navy officials in American Samoa felt that the United States government should establish public schools as soon as possible after assuming political control of the islands. Commander Tilley, the first commandant, sent the first appeal for a school to the Secretary of the Navy in 1900. A petition was sent to the Navy Department in 1903 by the American and Samoan residents of Tutuila requesting the establishment of a

1. American Samoa, A General Report, 100.

school. In 1903, the Tuimanoa sent two appeals to the President of the United States for educational aid.¹

These requests for government aid brought no results so the Missions continued their educational work. A brief survey will be given of the mission schools established during the early years of Navy rule in American Samoa.

The faifeau schools were active at this time and have continued to the present day. Now they usually begin at seven in the morning and continue for an hour and a half. They fill the need met by kindergartens in America. The faifeau schools make a contribution in promoting interest and a knowledge of the Samoan language and Samoan customs. The effectiveness of the religious teaching in the faifeau schools can be seen in the willingness of the Samoan people to attend so many religious services and to work for funds to build such expensive churches.

The London Missionary Society continued to take the lead in educational matters. A boys' school was established in Manua by a graduate of the L.M.S. Malua College in 1900 which consisted of six native houses for school buildings and which had an enrollment of one hundred pupils.

1. American Samoa, A General Report, 80.

The Atauloma Boarding School for Girls was started in 1900 by the L.M.S. churches of Tutuila and Manua so that the girls from these islands need not go to Papauta, Upolu, for their education. The purpose of this school was to train girls to be suitable wives of the pastors, some of whom serve in Samoa and some of whom go as missionaries to other islands in Polynesia and Melanesia. This school ranks high at the present time among the girls' schools in Samoa and many of its graduates enter nurses training at the Samoan Hospital at Pago Pago. The teaching at Atauloma is done in the Samoan language which handicaps the girls, as their nurses training courses are conducted in English.

The Wesleyan Mission (Methodist) was extended to Tutuila and Manua in 1901. Several schools were established and conducted by the faifeaus of that creed.

The Mormons (Church of Jesus Christ of the Latter-Day Saints) established a school at Mapusaga in 1900. They accepted pupils from American and Western Samoa and carried on extensive work in agriculture as well as teaching the common school subjects.

About 1820 the various European and American Missionary societies had agreed that the island groups in the Pacific should be divided and that each society confine its work to an assigned area. Since 1830 the Samoan

Islands had been the field of the London Missionary Society. This society extended its work into every village and established schools and churches.

Most of the important chiefs were adherents to the L.M.S. faith and many of them believed that no other religious sect should be allowed to come into Samoa. The commandant was appealed to in 1902 to settle this dispute and he answered by issuing a station order, August 30, 1902, abolishing "all such laws or customs that interfere with religious beliefs."¹ Since the Constitution of the United States conferred religious liberty this policy was upheld in American Samoa. Other religious orders had less difficulty in establishing themselves in Samoa after this policy was made known.

The Marist Sisters established a convent in Leone in 1897 which was the only Catholic school in Samoa when the United States assumed control of the Islands.

The Marist Brothers made plans to establish a boys school in Leone in 1902 but it was not opened until April, 1906. This was an elementary day school open to boys of all faiths. A small tuition fee was charged and the Catholic Brothers taught all the common school subjects. This school was incorporated into the public system in 1921.

1. American Samoa, A General Report, 102.

In 1909 the Marist Sisters opened an English school primarily for girls of part-Samoan blood at Atuu on Pago Pago bay. A small tuition was charged. The school ranks as one of the best girls' schools in Samoa today, especially in its emphasis on good English.

A boarding school for Samoan girls was established at Lepua on Pago Pago bay in 1909 and has continued to the present time as a convent school.

In 1915 the Marist Brothers opened a school for boys at Atuu. Since the instruction is largely in English most of the white and part-Samoan boys in the region of Pago Pago bay are sent here for instruction.

The people of American Samoa continued their requests for public schools, distinct from the mission schools, and supported by government funds. The GOVERNMENT SCHOOLS first public school in Samoa was built at Tau, in Manua, in the latter part of 1903. The district governor of Manua asked for aid from the President of the United States and the commandant of the Naval Station.

"The commandant told him he would give him \$100. from the island funds if he would (1) certify in writing that the school would be a public and not a denominational school, and (2) if all the chiefs of Manua would sign a deed ceding their islands to the United States of America."¹

1. American Samoa, A General Report, 81.

Both requests were complied with and the school was given a small monthly grant from the Island government

The first aid from the federal government to Samoan education came when the Navy Department gave \$250. for the completion of the Manua school in August, 1904, to carry out the promise of the commandant to Tuimanoa. The Secretary of the Navy expressed the federal policy when he wrote in September 1922:

"Government aid should be discouraged as far as possible and the people encouraged to do more for themselves."¹

The commandant informed the three district governors of Samoa on November 20, 1903, that a primary school for boys and girls would be opened in the former courthouse at Fagatogo. The cost of equipment and salaries for two teachers was estimated at \$1,000. for the nine months term and this was to be paid from the customs fund.

"Scholarships were awarded as follows: Eastern district, 20; Western district, 16; commandant, 16. The commandant would name chiefly children of white or part white blood."²

The first public school on Tutuila was opened on April 11, 1904, with two teachers and pupils whose ages ranged from six to twelve years. The purpose of this school was to teach the Samoans the English language

1. American Samoa, A General Report, 81.
2. Ibid., 81.

and some reading, writing, geography, and arithmetic.

"Mrs. Trevarrow, wife of Warrant Machinist Trevarrow, was the principal. The natives showed a prejudice against a woman teacher for boys."¹

"In November, 1906, Mr. Charles Moore became the teacher, at \$1,000. a year, and continued until March, 1913. He also taught manual training.

"The school gradually became a boys' school, used by those living in the immediate vicinity, with an attendance of from 40 to 50 pupils from 6 to 15 years old.

"After Mr. Moore's departure the school was closed for several months, awaiting the appointment and arrival of a new teacher."²

"Governor Crose (Nov. 1910--Mar. 1913) deserves to be remembered for the great interest he took in educational matters, and the immense energy he displayed in his various attempts to improve the educational system. The previous governors and commandants had made annual appeals to the Navy department for congressional help, Governor Crose did that and more. He wrote, December 24, 1910, regarding the agricultural experiment station: 'The governor will not ask congress for an appropriation for any purpose. Repeated requests for money to establish public schools have so far met with only silence. The most necessary expenditure on the part of the government outside of purely naval affairs, will be for a proper public school system.'"³

On January 3, 1911, Governor Crose appointed a board of education to investigate the teaching of English in the schools. He supplied the public schools with text

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1. American Samoa, 82.
 2. Ibid., 82.
 3. Ibid., 82.

books, stationary, slates and other necessary equipment from the customs fund. The plans for a district school in the Eastern district were abandoned at this time when the chiefs decided to use the \$4,000. on hand to build a house at Gagamoe for District Governor Mauga instead of a school.

Doctor Cottle was instructed in February, 1911, to prepare a pamphlet on sanitation and hygiene for the use of all schools.

In November, 1911, a convention was held of all school teachers including all faifeaus who taught school. The governor made written comments on the convention.

"The value of the village school system is well recognized, and without these schools the conditions of education in Samoa would be deplorable.

"Many of the pastors are inefficient and lazy and the schools are badly conducted; but some of the pastors have shown considerable energy, and the system of examinations has enabled the white missionaries in charge of the London Mission to know whether or not the children are being instructed."¹

Governor Crose issued a regulation February 23, 1912, entitled "The Compulsory Education Regulation of 1912," requiring every child between the age of six and thirteen to attend school at least four days a week

1. American Samoa, A General Report, 83-84.

during the school year.

Three Samoan boys were sent at government expense in February, 1913, to the Hilo Boarding School, Hilo, Hawaii, for higher education. Governor Crose had hoped to send boys to the Hampton Normal Institute, Hampton, Virginia, and the Kamehameha Schools, Honolulu, Hawaii, but these schools were unable to take students from Samoa at that time.

Mr. F. J. Bohl came to Samoa in July, 1913, at a salary of \$1,320. a year, and very successfully taught the government school at the Naval Station. He had 144 pupils in a small building and had to turn many away. He was the author of the "Elements of the English Language for Samoans" published by the L.M.S. Press, Malua, 1917.

On June 30, 1914, there were in addition to the village pastor's schools, eight recognized schools in Tutuila, three were for boys, three for girls and the remaining two for both boys and girls. These schools were being taught by a teacher from the United States, by Catholic Marist Brothers and Sisters, by representatives of the L.M.S., and by Mormon Elders.

"July 28, 1914, Governor Stearns issued a very comprehensive regulation relating to education, entitled 'The Education Regulation of 1914,' organizing a department of education and defining its duties.

"It defined three classes of Public Schools, the duties of the tax payers of a village to

provide suitable buildings for the pupils and for the teachers; it provided for tracts of land for playgrounds and other tracts for school plantations. Every public school was to be open for instruction for at least four hours a day, Fridays, Saturdays, Sundays, and holidays excepted. The age for beginning school was five years. As there was only one island government public school, this regulation was practically a dead letter, until Governor Evans organized the present public school system in 1921. (Which continued until 1933.)

"Governor Stearns had originally intended to gradually make American Samoa English speaking and to issue a regulation to require absolutely that English be taught in every school in American Samoa."¹

On August 30, 1914, Mr. David Dykstra was appointed teacher for the Manua district school and remained until the last of April, 1915. A hurricane so demolished the Manua school that it was impossible to continue.

The school was reopened in April, 1920. When the Manua Cooperative Company went out of business the Manua chiefs voted \$200. from the assets to improve the company's buildings and to purchase equipment in order to reopen the school at Tau, closed since the hurricane of 1915.

In June, 1914, Governor Stearns made a verbal contract with Mr. H. J. Moors of Apia to buy the property at Anua, Pago Pago bay, for school purposes. The government school was then moved to this plantation.

1. American Samoa, A General Report, 85.

The final payment for the land totaling \$7,500 was made by Governor Poyer in 1917. A boarding school was maintained on the plantation using the old buildings.

Poyer school building was constructed and dedicated as the new government high school January 23, 1918. The building was of reinforced concrete blocks with a floor space of 3,600 square feet and verandas with an additional area of 3,000 square feet. This new building cost \$17,500. of this, \$3,744.35 was supplied from the Eastern district school fund, \$750. from the judicial fund, \$250. from the Samoan Hospital fund and the rest from the customs fund.

Mr. David Dykstra was the principal of the new Poyer school. He had three assistants, two of whom, Nelsone and Faatoia, had been educated by the Island government at the Hilo Boarding School, Hilo, Hawaii. Mr. Dykstra resigned in June, 1919, and was replaced by Mr. W. W. Green who served until May, 1920, when he departed because of his wife's illness.

A. M. Noble, secretary of native affairs and superintendent of education, recommended June 30, 1920:

"A board of education of five; two from the permanent residents, one of them to be a native; two from the Navy; and the fifth to be the principal of the government school. He recommended a school in the Manua group; a school for girls on the government school grounds; primary schools in those villages throughout the islands where the

distances to the Leone and Pago Pago school make it impossible for the children to attend school where English was taught; these primary schools to be taught by high school graduates, to be paid one-half by local taxation and one-half by customs." 1

"In January, 1921, Governor Evans made plans for a public school system to extend through out American Samoa. He appointed a board of education. ...The board was directed to study the school situation and to make recommendations for its improvement. Tutuila was divided into 15 school districts and Manua into 4, the purpose being to establish a graded school in each district, and to ultimately change Poyer School into a high school." 2

The Samoan officials, chiefs and people gave their support to the plan for an improved school system. At the end of the year 1921 there were 18 public schools in operation. The Fitiuta, Tau, school opened in February, 1922, completing the plans for a public school in each of the 19 districts in American Samoa.

Poyer School provided courses up to and including the eighth grade, Leone Boys School to the fifth grade and all the remaining schools were to give courses up to and including the fourth grade.

On November 30, 1921, Governor Evans addressed the annual fono on the subject of education. As a result the fono voted an annual school tax of two dollars per tax payer.

1. American Samoa, A General Report, 87.
2. Ibid., 88.

On June 30, 1922, there were 19 schools, 29 teachers, and 1,569 pupils enrolled. The chief problem was teacher training.

"Regulation No. 5., 1921, required that: All native teachers shall, for a period of six weeks beginning the first Monday in January, attend the teachers' training course which shall be conducted at the Poyer School."¹

Since this time a teachers' institute has been conducted at Poyer School during the teachers' three months vacation.

Mr. John F. Harris came to Samoa in August, 1922, and was made director of education and principal of Poyer School. He reorganized the school courses, graded the pupils and instructed the native teachers. In December, 1922, the Hawaiian course of study was adopted.

During the year 1922-23, the schools progressed under the new plan, but were handicapped as usual by the lack of money and the inadequate supply of efficient teachers. Two new subjects, geography and physiology and hygiene were introduced in all grades above the second.

The superintendent of education made a general survey of the whole public school system in June 1924, from both a financial and educational point of view. The teacher was found to be the weakest link in the organization.

1. American Samoa, A General Report, 89.

There were 36 teachers on the payroll of whom 15 were new. Mr. Lester H. Thornburg was director of education from January, 1924, to April, 1925. Mr. F. J. Dollinger succeeded Mr. Thornburg and largely followed the existing educational policies.

Mr. Paul T. Diefenderfer became director of education on December 1, 1927, and served until December 1, 1931, when he was succeeded by Major A. E. Lindborg.

During this period of about six years many of the policies and procedures still obtained which were not in keeping with good educational methods employed elsewhere. The schools continued to function with the poorly trained and underpaid teachers carrying on a formal factual type of teaching.

"The teachers speak very limited and ill enunciated English as a rule, hence they are far from ideal teachers from this one viewpoint. There are encouraging evidences of their recently having been given the elements of good teacher training method. They need continued annual training through a teacher-training school conducted on the best modern lines of learning. At present most of the learning is memoriter and does not involve thinking. Most of these schools are making but little progress, but what they are making may be enough--certainly it is enough until the direction of the progress is carefully plotted."¹

The schools were held in the native fales which were often too small for the number of pupils enrolled and ill

1. Midkiff, "Basic Paper on Schools." Studies in Samoa by a Commission of the Barstow Foundation, 12.

suited to classroom purposes. The equipment usually consisted of a blackboard, a table and chair, and a small chest for texts and supplies. Text books were not furnished by the government and few of the pupils purchased text books, and those in use were usually not suited to the needs of the Samoan pupils. The pupils sat on mats on the floor and slumped over their slates in a manner which so cramped their breathing that one questioned the healthfulness of this position among a people highly susceptible to tuberculosis.

The course of study was not adapted to meet the present needs of the Samoan pupils so neither the children nor their parents took a vital interest in the schools. Much of the teaching was done in the question-answer manner in which both the teacher and pupil dealt with words, many of which neither of them fully understood. Very little teaching was done in the much needed subject of hygiene and sanitation.

The department of education during this period was handicapped by a number of detrimental factors such as: a lack of faith on the part of the Naval Government that the Samoan people were profiting by education; frequent changes in the personnel of the Naval Government; the lack of professional assistance in educational policies; the lack of funds needed to purchase books and supplies;

and the indifference of the parents in such matters as requiring regular daily attendance at school, and the purchase of textbooks.

This review of the conditions known to exist in the schools of American Samoa is not a criticism of the Naval policy or of the work of any individuals. Those in charge of the schools were aware of these and other shortcomings. Education was still in a pioneer stage, and there was a great need for aid, both financial and professional, to reorganize the entire school system.

New life was given to the outlook for education in American Samoa in 1932 when a Foundation was established in the memory of Frederic Duclos Barstow for the purpose of aiding the Samoans through education. Young Barstow

THE
BARSTOW
FOUNDATION

spent some time in Samoa recuperating from shell shock and resulting illness and became sympathetic to the needs of the Samoan people. They affectionately called him "Feleti" and he recorded in his diary a wish to be of service to these people whom he had learned to love. After his death in Honolulu in May, 1931, Feleti's parents set aside an endowment, which at present totals some \$300,000., the income from which is to be spent towards the betterment of the people of American Samoa.

The Barstow Foundation is handled by a board of

Trustees consisting of the Presidents of Punahou and Kamehameha Schools, the President of the Bishop Trust Company, and two other members to be selected by these. The first named trustees selected Mr. Albert F. Judd as chairman and Dr. Peter Buck, ethnologist, as the fifth member.

During the summer of 1932 three of the trustees accompanied by others who were interested, went to Samoa to formulate the educational policies of the Barstow Foundation.

"The work of the trustees in laying the foundation for future activities in accordance with the deed of trust is thoroughly treated in the report of the visiting party as of August 1932. It is sufficient to note here that in the short space of 25 days Messrs. Judd, Frear and Midkiff, assisted by Mr. Embree of the Rosenwald Foundation, thoroughly covered the ground and accomplished the following necessary work: First, they obtained, at first-hand, an understanding of Samoan life and, of even greater significance, the respect and confidence of the Samoan people. Second, they established a friendly and cooperative relationship with the governing authorities. Third, they succeeded in getting at the vital weaknesses of the educational program with the result that, in cooperation with the educational authorities, a definite objective of education was established and certain definite projects undertaken. Fourth, in their survey of health conditions and other activities of government, they set in motion constructive activities other than those strictly educational per se."¹

At the close of its survey in American Samoa the Barstow Committee announced certain policies and accomplishments:

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1. Wist, Report of the Visiting Staff, 28.

"The Barstow Foundation is to work through the Samoan government officials who are responsible for all phases of Samoan society. ...The Foundation has adopted education as the chief field in which it is to serve the Samoan people. ...The Foundation made a survey of the schools and of the health situation, presenting these studies to the government. ...the Samoan government is proceeding immediately to revise its educational objectives and entire school system and program according to suggestions made by the Foundation. It is planned that the Foundation will continue to cooperate and counsel with the Samoan government in educational matters in general."¹

The Barstow Foundation has begun to carry out its plans by sponsoring the following major projects:

Three Honolulu educators were sent to Samoa in December, 1932, and remained until February, 1933, during which time they developed a program of public education suited to Samoa's needs, and conducted the annual Teachers Institute, which is the training school for all the Samoan teachers held during the three months school vacation. The program developed by this committee, Dean B. O. Wist, Professor William McCluskey, and Principal Robert Faulkner, will be discussed more fully under the topic, The Present Program of Education.

Two Samoan teachers were brought to Honolulu in February, 1933, and remained for three months, observing the methods used in the best schools of Honolulu and

1. Midkiff, "A Charitable Trust Makes Plans to Serve a Primitive People." The Mid-Pacific Magazine, 28, Jan. 1933.

rural Oahu, and improving their use of English and their knowledge of Western culture.

A Samoan nurse was brought to Honolulu where she spent several months early in 1933 studying hospitalization and public health nursing.

Two young men are now in training in the Central Medical School at Suva, Fiji, receiving the medical education needed to become Native Medical Practitioners.

The establishment of the Feleti School was one of the outstanding experiments of the Barstow Foundation. The object of the school is to give a selected group of young men special training in the knowledge and practices of both Samoan and American culture so that they may be trained as future leaders of the Samoan people. The curriculum consists of the common school subjects--English, arithmetic, science, social science, history and certain business practices. Emphasis is also placed on learning Samoan arts, crafts, and agriculture. The white and Samoan teachers help the students to adjust themselves socially to American and Samoan customs. After more than two years the Feleti School has passed the experimental stage and gives the promise of fulfilling the objectives which prompted its establishment.

The Barstow Foundation has continued to support the Teachers Institute by sending three educators from Hawaii

to Samoa each summer.

Many small services have been rendered the Samoan people which are too numerous to include in this summary. These accomplishments show that the Berstow Foundation has been responsible for a renaissance in Samoan education, benefits of which are already far reaching and will continue to influence favorably all phases of Samoan life.

The public schools in American Samoa are organized under the plans formulated by the Visiting Staff to the Samoan Teachers Institute in 1932-33 under the direction of

THE PRESENT
PROGRAM OF
EDUCATION

Dean B. O. Wist. The educational principles behind the present program of education carry out the objectives which prompted the reorganization of Samoa's schools. These basic principles recognize that every child is entitled to nine years of public education, under a program which will aid him in forming good habits, thinking attitudes and high ideals, which will prepare him to solve his own problems and make an intelligent adaptation to his changing environment. The Samoan people are to decide what elements are to be retained from their Samoan culture and what is worth introducing from Western civilization. An educational program based on thought-provoking experiences and problems should enable the Samoans to do this.

The course of study in the public schools is planned for nine school years. The term "grade" is not used but

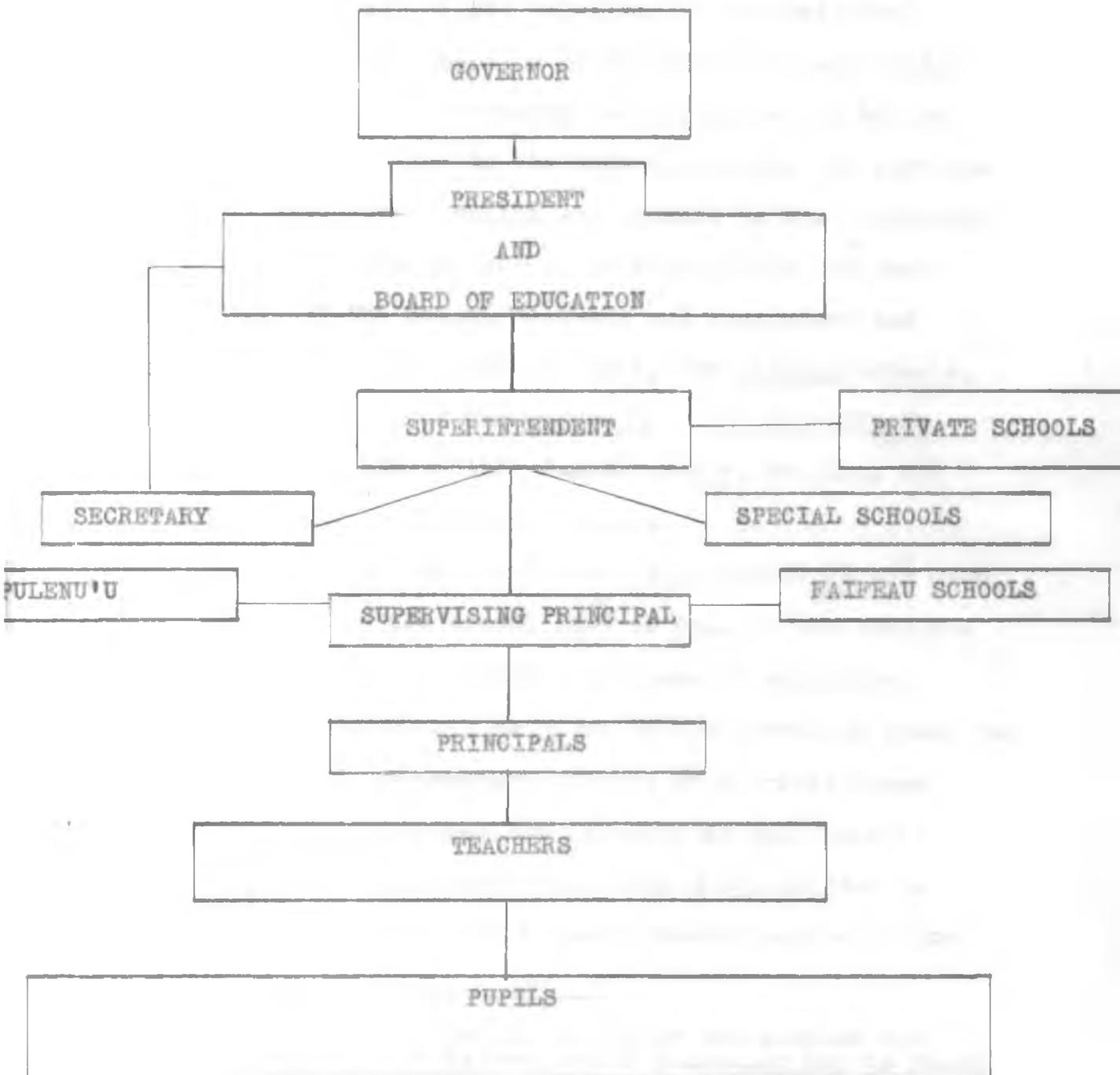
the First Year group is made up of children six and seven years old, the Second Year group of those seven and eight years of age and so on. Pupils progress to the next group each year so that they remain with children of their own age-level. The teaching is done in English in all the public school classes. Samoan arts and crafts are encouraged, and every school is required to have a plantation and to see that every pupil learns agriculture by actual work. Health and sanitation is emphasized, the school attempts to develop a health consciousness, as well as the knowledge of the principles of health and sanitation. Western culture is studied in the school social study courses. The tool subjects such as arithmetic, spelling and composition are taught as much as possible in connection with other content subjects. Text books are provided under a book rental plan.¹

The accompanying chart shows the administrative organization of the Department of Education.

The policies of the department of education are fixed by the board of education subject to the approval of the Governor of Samoa. The board of education consists of: the chaplain, who serves as its president; the chief medical officer; the attorney general; the chief public

1. While this plan is incorporated in the school code, it has not been possible to put it into serviceable practice.

Figure 2 ADMINISTRATIVE ORGANIZATION
 DEPARTMENT OF EDUCATION
 AMERICAN SAMOA¹



1. Wist, Report of the Visiting Staff, 324.

works officer; and three Samoans appointed by the Governor and representing the three districts of American Samoa.

The superintendent of education is the professional head and supervisor of the schools. He inspects the private schools and keeps in touch with their activities also. The secretary of education is responsible to the board of education and to the superintendent. He performs the usual secretarial duties and attends to the purchases.

The supervising principal is chosen from the most experienced of the Samoan teachers and supervises and reports on the work of the teachers, the faifeau schools, and the school work of the pulenu'us. The pulenu'u in each village is responsible for the school building and for housing and feeding the teachers.

The duties of the above named administrators are more fully outlined in the school law¹ as well as the complete administrative set-up of the department of education.

A brief sketch will be given of the course of study for the Elementary schools of American Samoa which shows how the work of each year is centered around a theme which subject is of particular interest and value to Samoan pupils of that

1. The Proposed Regulation which was adopted and became the law of the Department of Education may be found in, Wist, Report of the Visiting Staff. 333-345.

age level. A review of the health education activities outlined for each school year is given in Chapter IV of this study.

Pupils from six to nine years of age attend the Primary division of the school which is divided into the First Year, the Second Year, and the Third Year groups. The school day is from nine o'clock in the morning until three in the afternoon. The daily program for the Primary years begins with brief opening exercises, then twenty minutes or so devoted to health needs. The activities of the day are planned by the pupils under the guidance of the teacher at the morning planning period. A music period of twenty minutes and a morning recess follow the planning period. The hour following is devoted to handcraft or plantation work. In these activities the pupils "learn by doing." A rest period follows the activity and then the pupils have lunch. The recreational period of an hour has as its purpose the development of the ability to use leisure time in an enjoyable and profitable way. Some of the activities encouraged are story telling, dramatizing, and playing games. The primary pupils then have an hour during which they are left to their own resources and encouraged to develop independence in action and social tendencies. The closing period is devoted to summarizing the activities of the school day and possibly giving some consideration to the

pupils' doings for the rest of the day.

The First Year pupils study Homes and Home Life, the Second Year pupils consider the Child's Community Life, and the theme for the Third Year is Foods and How they are Secured.

The Intermediate Years include the Years Four, Five, and Six, with pupils from nine to twelve years of age. The daily program is similiar in plan to that of the Primary years except more time is given to the tool subjects, arithmetic, language, reading and spelling in the morning and the afternoon is devoted to social studies and appreciation studies.

The theme for the Fourth Year is Shelter and Clothing; for the Fifth Year, Transportation; and for the Sixth Year, Communication.

The last three years, Seventh, Eighth, and Ninth, are designated as the Upper Years in the Samoan plan of education and provide for the children from twelve to fifteen years of age. The daily program for the pupils in the Upper Years is similiar to that for the Intermediate program. More time is devoted to the tool subjects and to social studies. The arts, crafts, and plantation tasks are carried on every afternoon. English is emphasized in every possible situation during the Upper Years.

The Seventh Year program has as its theme The Polynesian Environment; the Eighth Year, Government; and

Nations as Neighbors is the Ninth Year theme.

The main objective of education, as stressed in the directions to the Samoan teacher in carrying out this program, is the development of intelligent, socially minded, thinking individuals who are healthy in mind and body.

"This course of study is based on the belief that the above objective cannot be met by the specific learnings of standardized fact; but that it can be met by providing the child on any year-level with real life problems to solve, problems on his level of understanding. The child who learns to solve the problems of child life and experience and who acquires thereby the desired habits and attitudes will be able to solve the problems of adult life when he reaches that stage of his development."¹

1. Wist, Report of the Visiting Staff, 306.

CHAPTER IV

HEALTH EDUCATION IN AMERICAN SAMOA

The Samoans were not unlike many other primitive people in other parts of the world in their beliefs concerning disease. Old Samoa was a land abounding in spirits. Malicious spirits visited a person, usually for a reason which could be determined, and the individual became ill. It was easy to believe, then, that the patient could be cured by driving the evil spirit from the patient's body. The Samoan doctor did this by magic, but he found by experience that something in addition to magic aided in bringing about a cure. So he concocted various herb medicines and administered them to repair the physical harm done by the invading spirit.

CHANGES IN MEDICAL BELIEFS AND PRACTICES

"As the Samoans supposed disease to be occasioned by wrath of some particular deity, their principal desire, in any difficult case, was not for medicine, but to ascertain the cause of the calamity. The friends of the sick went to the high priest of the village. He was sure to assign some cause; and, whatever that was, they were all anxiety to have it removed, as the means of restoration. If he said they were to give up a canoe to the god, it was given up. If a piece of land was asked, it was passed over at once. Or, if he did not wish anything particular from the party, he would probably tell them to assemble the family, 'confess, and throw out.' In this ceremony each member of the family confessed his crimes and any judgments which, in anger, he had invoked on the family or upon the particular member of it then ill; and, as a proof that he revoked all such imprecations,

he took a little water in his mouth, and spurted it out towards the person who was sick." ¹

"Sickness is believed by the Manuans to be the result of a ghost, the invocation of the family god (tupua) by a sister or a paternal aunt or other relative in the 'tama fafine' group possession by an angry ghost, the breaking of a tapu; or to some natural cause like eating rotten fish, long exposure in the sun or rain, or a disease like elephantiasis. Whether this conception of possible natural causes of illness and death has been introduced it is of course impossible to say. At the present time, natives who habitually employ native practitioners and will have nothing to do with the white doctors, or medicines, believe in natural causes of sicknesses." ²

"In case of sickness where the family could afford it, recourse was had to sorcery. The Taulaaitu, or Anchor of the God, was summoned that he might intercede with the particular diety he represented to help them in their calamity. Sometimes relief followed the incantation used or remedies applied, but in numbers of cases the sickness terminated fatally, when all sorts of excuses were made by the Taulaaitu to account for the failure." ³

Since an aitu or spirit caused most of the illness in old Samoa a variety of medicines called vai aitu were prepared. Ordinary medicine was usually referred to as vai. Vaiaitu was rubbed on a person possessed by the spirit. The presence of the aitu was noted by the patient's strange voice and actions, even if he were not ill or in bodily pain.

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1. G. Turner, Samoa, 140-141.
 2. Mead, Social Organization in Manua, 98.
 3. Stair, Old Samoa, 164.

The name for the Samoan doctor was foma'i, the word fo meaning "to doctor" or "to apply remedies." Mai refers to "illness."

The word fo also meant "to rub gently" which explains one of the methods used by the foma'i to treat his patients. Mili mili was rubbing gently with the tips of the fingers. This method was resorted to in massaging tired muscles or nerves. It was a favorite treatment for relieving headache. Oil was used on the skin during the mili mili. A similar treatment was the lomi lomi which was a more vigorous massage, the hands were used in kneading and applying pressure to relieve pain. This treatment increased the circulation and was probably the most effective of the Samoan attempts at doctoring.

The knowledge of the herbs and the incantations of magic were usually in the possession of certain families. When a foma'i became old he confided the secrets to a son or more rarely to a daughter. Some of the most precious secrets or herb formulas were not divulged until the foma'i was on his death bed.

"Of the native doctors, strictly speaking, the best obtainable were the Tongan doctors, many of whom were found in Samoa. These men had much better knowledge of the native herbs and plants than the Samoans themselves. Still, there were many Samoans who followed this particular employment. If compelled to yield the pride of place as herbalists to the Tongan doctors, the Samoans were fearless and even daring in the use of the

knife in disease; whilst in the treatment of broken limbs and wounds received in battle they were often most successful."¹

The surgical instruments used by the Samoan doctors were of bone, shark's teeth, bamboo, or shell. It is surprising that the surgeons could have been as successful as reports indicate since they had no knowledge of an anesthetic drug and no really effective antiseptics. In the attempt to relieve pain, deep lancements were sometimes made on various parts of the body, such as an elephantoid enlargement of one of the limbs.

"In surgery, they lanced ulcers with a shell or a shark's tooth, and, in a similar way, bled from the arm. For inflammatory swellings they sometimes tried local bleeding; but shampooing and rubbing with oil were the more common remedies in such cases.

"Cuts they washed in the sea, and bound up with a leaf. Into wounds of the scalp they blew the smoke of burnt chestnut wood. To take a barbed spear from the arm or leg they cut into the limb from the opposite side and pushed it right through. Amputation they never attempted."²

"Shampooing and anointing the affected parts of the body with scented oil by the native doctors was common; and to this charms were frequently added, consisting of some flowers from the bush done up in a piece of native cloth and put in a conspicuous place in the thatch over the patient."³

"The Samoans in their heathenism seldom had recourse to any internal remedy except an emetic, which they used after having eaten a poisonous fish.

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1. G. Turner, Samoa, 141.
 2. Ibid., 141.
 3. Ibid., 140.

Sometimes juices from the bush were tried; at other times the patient drank on at water until it was rejected; and, on some occasions, mud, and even the most unmentionable filth was mixed up and taken as an emetic draught. Latterly, as their intercourse with Tongans, Fijians, Tahitians and Sandwich Islanders increased, they made additions to their pharmacopœia of juices from the bush. Each disease had its particular physician."¹

"The treatment of the sick was invariably humane, and all that could be expected. They wanted for no kind of food which they might desire, night or day, if it was at all in the power of their friends to procure it.

"In event of the disease assuming a dangerous form, messengers were dispatched to friends at a distance that they might have an opportunity of being in time to see and say farewell to a departing relative. The greater the rank the greater the stir and muster about the sick of friends from the neighborhood and from a distance. Everyone who went to visit a sick friend supposed to be near death took him a present of a fine mat, or some other kind of valuable property, as a farewell expression of regard, to aid in paying native doctors or conjurors, and to help also in the cost of pigs, etc., with which to entertain the friends who were assembled."²

An attempt has been made to determine the names of the diseases which affected the Samoan people before the coming of the white man.

"Pulmonary affections, paralysis, diseases of the spine producing humpback, ophthalmia, skin diseases, scrofulous, and other ulcers, elephantiasis, and a species of leprosy, are among the principal diseases with which they were afflicted. Ophthalmia

INDIGENOUS AND
INTRODUCED DISEASES

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1. G. Turner, Samoa, 139-140.
 2. Ibid., 141-142.

and various diseases of the eye were very prevalent. There were few cases of total blindness; but many had one of the organs of vision destroyed."¹

Records show the year in which a number of communicable diseases were introduced into Samoa. A cholera epidemic raged in 1800, tuberculosis was introduced in 1840, whooping cough in 1849, mumps in 1851, and other serious diseases have been brought in since. These introduced diseases took a heavy toll of life as the Samoans had no natural immunity or resistance, and they had no remedies for the foreign diseases. Their habits and mode of life often favored the spread of epidemics.

Captain Wilkes reported that the population of what is now American Samoa was ten thousand person in 1839.²

No accurate figures are available for the rest of that century. During that period, however, there were frequent contacts with foreign peoples and the introduced diseases made heavy inroads on the native population. The census estimate for 1900 shows nearly a fifty per cent depopulation.

The census reports show a steady increase in population after the establishment of the United States Naval Station and the organization of its health work.

1. G. Turner, Samoa, 137.

2. Wilkes, Narrative of the United States Exploring Expedition, 3:130.

Population of American Samoa

1839	- (estimated by Wilkes).....	10,000
1900	- (estimated).....	5,679
1920	- (census).....	8,058
1927	- (counted locally).....	8,730
1928	- (" ").....	8,940
1929	- (" ").....	9,172
1930	- (census, exclusive of naval personnel).....	9,876 ₁
1934	- (estimate by public health officer).....	12,000 ₂

The Samoans were introduced to European medical practices first through the contacts with visiting ships and later by the missionaries.

"Every missionary had a dispensary and had a daily routine for giving advice and medicine to the sick. The natives eagerly sought European medicines."³

The U.S.S. Abarenda arrived in Samoa in August, 1899, and attached to the vessel was Asst. Surgeon E. M. Blackwell,

AMERICAN MEDICAL TREATMENT U.S.N., who gave nearly all of his time to the gratuitous treatment of sick natives. At that time there was not a single practicing physician or surgeon in Samoa.

Doctor Blackwell and the commandant in June, 1900, made requisitions for medical stores and a small dispensary at the naval station for the treatment of sick natives. This was disapproved because of lack of funds.

1. American Samoa, Hearings before the Commission, 468.
2. Public Health Report, Dec. 31, 1934, 111.
3. American Samoa, A General Report, 69.

In 1902 the quarantine station was built on Goat Island in Pago Pago bay using Island funds.

"The surgeon of the station ship was also the health officer of the port of Pago Pago, the medical officer of the station, and the sanitary inspector of the villages. In 1903 he was also sanitary inspector of the government jail and prisoners and public vaccinator."¹

"A native house was bought (1903) and paid for out of Island funds, and turned into an adjunct to the hospital (started August, 1900), as it was found that the natives thrive better in their own type of house. The hospital was a small unsanitary house, at one time a trader's store, with accommodations for only three patients."²

Vaccination was made compulsory September 17, 1903.

All medical services and medicines administered by the navy doctors were free to the Samoan people.

"On May 9, 1906, the Surgeon General of the Navy authorized the medical officer to continue to expend navy medical supplies for the natives of Tutuila and Manua."³

In November, 1909, the first case of hookworm was discovered in American Samoa. Investigation showed that about eighty-five per cent of the natives were victims of this parasite. This led to the establishment of the board of health, which was to give special attention to sanitation and

BOARD OF HEALTH

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1. American Samoa, A General Report, 70.
 2. Loc. cit.
 3. Ibid., 70.

dispersal of health information. The governor on December 31, 1909, appointed a board of health to consist of three members, one of them the senior medical officer of the naval station.

The board of health functioned for about five years, then the department of public health was organized January 10, 1914, to amplify the activities of the Naval medical department, especially in matters which concerned the health of the Samoans.

"The department of public health shall have supervision over and be directly responsible to the governor for all matters relating to the public health. The senior medical officer of the United States naval station, Tutuila, shall be the head of the department of public health, with the title of 'public health officer.' Such other persons attached to the medical department of the United States naval station, Tutuila, as may be found necessary may be assigned to duty under the department of public health, subject to the approval of the governor.

"The department of public health is empowered and directed to make and publish health orders, subject to the approval of the governor, to apply to any or every part of American Samoa that the said department of public health may direct."¹

The organization of the medical department in American Samoa shows that the Naval Government provided a staff of some one hundred and thirteen men and women in this department for the calendar year 1934. The senior

1. Codification of the Regulations and Orders for the Government of American Samoa, Section 3, paragraphs 35 and 36, 6-7.

medical officer estimated the population which they served at about twelve thousand.¹ The ratio, then, is about one health worker for each one hundred persons. The personnel of the health department were assigned to the following duties:

ORGANIZATION OF
THE MEDICAL
DEPARTMENT

The senior medical officer served as the public health officer and directed all health activities. Fifteen members of the staff were on duty at the United States Naval Dispensary. One of the junior medical officers headed this group and was assisted by the dental officer and ten or more pharmacists mates who did the laboratory, x-ray and clerical work. The group of fifty-seven workers at the Samoan Hospital was headed by a junior medical officer who served as hospital director and was assisted by six United States Navy nurses. The pharmacists mates handled the dispensary, the native clinic and did the clerical work. Five Samoan graduate nurses and thirty-nine student nurses were on duty at the Samoan Hospital.

The central public health district employed the following eight workers: a district health officer, a sanitary inspector, four native district nurses, and two native sanitary inspectors.

The work of the western public health district was done by: the district health officer, a sanitary inspector,

1. Public Health Report, Dec. 31, 1934, 111.

three native district nurses, and a medical fitafita.

The eastern public health district had the same number in its personnel as the western district.

The Tau public health district and the Ofu-Olosega district each were directed by a public health officer, a sanitary inspector, two native district nurses and a medical fitafita.

The cost of medical service in American Samoa is about \$7.91 per capita per year. For the calendar year 1934 the medical department expenditures were \$11,430.20 and the public health department expenditures were \$12,621.25. The salaries of the navy personnel of the medical and public health departments were figured at \$57,812.00.

The cost to the Island Government was \$1.09 per capita or 14 per cent of the total. The cost to the Navy was \$6.82 per capita or 86 per cent of the entire cost.¹

Approximately 225 persons make up the Navy personnel in American Samoa at any one time.² Their medical services cost the Navy \$1,534.50 or about two per cent of the total. The cost to the Navy for medical service for the Samoan

1. Public Health Report, Dec. 31, 1934, 13.

2. This number includes the Samoan personnel who serve as officers or workers in the various departments of the Naval Government, the enlisted men on the Station Ship, and the nurses.

and civilian population is approximately \$74,458.82 or about 98 per cent of the total cost.¹

The figures show that the Navy is financing the greater part of the health work in Samoa as well as planning and directing it.

There are no private physicians, surgeons or dentists in American Samoa, and no drug stores where medicines can be purchased. Except for a few patent medicines or household remedies which are sold in the general stores with the approval of the public health officer all medicines must be obtained from the public health department.

At the request of the Governor for a nurses training school for both young men and young women the Surgeon

NURSES
TRAINING
SCHOOL

General of the Navy issued an order on August 26, 1913, that:

"A school is hereby directed to be established in American Samoa for the purpose of training native Samoan women in the principles of nursing with a view to their making use of this teaching in their own country, and among their own people. For this purpose, two members of the Nurse Corps, United States Navy, will be ordered to Samoa, who together with the medical officer of the Navy attached to the station, will give the necessary instruction."²

The training school for Samoan nurses was opened February 14, 1914, with three Samoan girls as students.

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1. Public Health Report, Dec. 31, 1934, 13.
 2. American Samoa, A General Report, 75.

A two year training course was offered and the first class of three graduated in 1916. In 1924 the course was increased to include three years training, and in 1929 a four year course was inaugurated. Upon graduation the nurses alternated between the hospital and the districts. As district nurses they traveled from village to village, visiting and treating the sick, giving instructions to mothers in child care, and reporting the births and deaths.

The students for training are recruited from the schools of American Samoa. A knowledge of English is essential and the students must have reached the sixth or seventh grade in school and be of high moral character. During the period of training the nurses are given a daily course of lectures covering such fundamental subjects as anatomy, physiology, obstetrics, principles of nursing and some bacteriology and laboratory instruction.

When the school was established the students received no compensation. When the first class graduated the nurses were paid nine dollars a month for district health nursing and twelve dollars a month for hospital duty. The rate of pay which has been effective since November 1, 1933, gives the first and second year nurses three dollars a month; the third year nurses four dollars and fifty cents a month and the fourth year nurses six dollars a month. The chief Samoan nurse receives forty-eight dollars a month and there is a provision for an assistant Samoan chief

nurse when one becomes qualified for the position.

The figures for the year 1934 show that there were nineteen graduate Samoan nurses in the public health service and thirty-five student nurses under instruction in the Samoan Hospital Training School for Nurses.¹

The district nurses receive their orders from the district health officers and they make daily reports to the officers concerning their activities. The supplies are handed out to the nurses by the district health officers.

The public health nurses receive training which makes them much sought after as wives. They frequently marry faiifeaus (native pastors) or young men from the best families. Many nurses are lost to the system by this practice which is a drain on the funds of the Training School. It has been suggested that an effort be made to secure the services of these married graduates in voluntary public health work in their villages.

In Western Samoa the New Zealand authorities believe they are building a more permanent and effective health staff by training young men to be native medical practitioners. These young men receive thorough medical training at the Central Medical School, Suva, Fiji. The men have a higher social standing in the community than the girl-nurses. The men are not lost to the service through marriage.

1. Public Health Report, Dec. 31, 1934, 33.

The native medical practitioners are doing the same type of medical work that the pharmacists mates are doing in the villages of American Samoa. The native medical practitioners have the advantage of understanding the native language and customs, and are permanently located in the community.

"This system has been receiving a fair trial in Western Samoa, and I realise that like many similar systems, it has its shortcomings, especially during such a period of adjustment to local conditions. But as the result of my experience, I have come to the conclusion that this is the only system by which it is possible to carry Western medicine to Samoans in their own homes. One's experience teaches one that this is also the only method by which the Samoans can be taught modern principles of hygiene and health."¹

Should civil government replace naval rule in American Samoa some such service as the native practitioner gives would be necessary. At present the Barstow Foundation is sponsoring the training of two young men from American Samoa in the Central Medical School.

In some of the villages the chiefs have attempted to use the public health nurses to perform ceremonial or household duties or even menial tasks. The public health officers have forbidden this and as a result the chiefs have complained that the nurses are lacking in respect for their superiors. The place of a woman in Samoan society makes

1. Hunt, Annual Medical and Health Report, 1933, 10.

it more difficult for her to serve persons of rank than it would be for a young man.

"...by Samoan custom there are many matters in which the influence of a woman, however well trained, is negligible. She is always at a discount in dealing with the men of the communities in which she works, and particularly so in the case of those of age and rank."¹

Hospital care was given to the Samoan sick at the old Naval dispensary, and two Samoan houses and two tents connected to them until March 4, 1912, when the new Samoan Hospital was occupied.

THE SAMOAN HOSPITAL "The Navy Department, April 4, 1911, granted permission for the construction of a native hospital on United States government land, on the hillside between the Naval Station and Pago Pago, without expense to the United States.

"A Samoan Hospital fund was created May 25, 1911, for the support of the hospital. Its sources were small fees for medical services and operations at the Samoan Hospital, extra attendants, bed patients, and the sale of drugs purchased by the fund.

"The new Samoan Hospital, completed September 1, 1912, consisted of a wooden central administration building, paid for by the Island Government costing \$2,284.94, containing an examining room, dispensary and lavatory, baths, latrines, and storeroom. A windmill was erected near the beach to pump water to a ten thousand gallon tank located sixty feet above the level of the main building. This tank furnished water for flushing toilets and for shower baths. (Later, fresh water was brought to this tank from a small reservoir above and behind the hospital.)

1. Keessing, Modern Samoa, 392.

Fresh water was obtained from three 400-gallon tanks which collected the rain water from the roof of the main building. Buildings and roads were lighted by electricity from the station power plant, a telephone was installed in the main building. A small incinerator was built near the hospital grounds for burning refuse.

"The sick wards consisted of three very large oval Samoan houses, built by the three districts with free labor. The districts paid for such materials as had to be imported, amounting to \$1,800. The houses had cement floors, and were very handsomely built.

"An operating room, sixteen feet square, was built near the western end of the central building; the material and equipment were furnished from the Samoan Hospital fund; the labor, by the Island government."¹

Improvements and additions have been made to the Samoan Hospital as the needs have arisen or as the Hospital fund has allowed. In 1914-1915, a dining room with dormitory above, was added to the administration building. The water system was improved by the addition of one 10,000 gallon wooden tank and one 400 gallon iron tank.

In 1923 - 1924 new quarters were built for the Samoan nurses. The Samoan Hospital dairy was sold to private interests at this time and the building converted into a native cook house. A diet kitchen was established in 1926.

During the year 1933 a new pavilion was constructed with a contribution of \$1,500 from Mr. A. C. Elkinton of

1. American Samoa, A General Report, 73.

Honolulu, Hawaii. The new pavilion has facilities for the care of twelve patients in the ward and one patient in an isolation room. This well equipped building is used for Samoan patients and provides a modern ward for training the Samoan nurses.

No new buildings were constructed in 1934 and the old wooden buildings seem to be deteriorating rapidly.

"The day is not very distant when new buildings will be urgently required to replace the present structures. ...Plans for the eventual replacement of all present buildings should receive careful study. It is strongly recommended that buildings of reinforced concrete, of a two or more story type construction, of a bed capacity of not fewer than one hundred beds and capable of withstanding wind of hurricane force, be undertaken."¹

The delegates at the 1913 fono requested that the services at the Samoan Hospital be absolutely free. Since that time most of the medical service has been free to the Samoan people, the expenses being paid by customs revenue collected on goods shipped into Samoa, and the rest of the cost borne by the Navy.

The food for the patients is provided by the relatives and friends who visit the sick and who also frequently conduct the evening prayers in the wards and provide music and suitable entertainment. Psychologically the visitation by the relatives is splendid, but they do not

1. Public Health Report, Dec. 31, 1934, 17.

allotted for such expenditures the materials could be purchased wholesale and young Samoan men could be trained by a dental technician.

During the calendar year 1934 the Navy dentist treated 1,422 persons. The treatments given were as follows:

Restorations, all classes.....	962
Extractions.....	904
Other operations and treatments.....	1358
Dental abstracts.....	92 ₁

During the year 1934 the dental department inaugurated a policy which should be a vital forward step in this line of health education.

"To stimulate dental interest and to promote oral cleanliness among the Samoans of school age, four native teachers from outlying districts were given an intensive short course in oral hygiene and prophylaxis. Under the direction of the dental officer, all were given practical experience in instrumentation and the various 'Field' methods of sterilization.

"These teachers have now returned to their respective schools and are scaling and cleaning the teeth of all their pupils, at the same time lecturing to them and their parents on the proper care of the oral cavity.

"While this is a new departure from routine, and entirely experimental, the results obtained so far are highly gratifying. As a result of this encouragement, instruction to a much larger group will be undertaken during the year nineteen thirty-five, with the view of ultimately having each school district supplied with a teacher who is a skilled technician in oral prophylaxis."₂

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1. Public Health Report, Dec. 31, 1934, 30.
 2. Ibid., 31-32.

Since there was no allotment provided to furnish these teachers with dental equipment the senior medical officer appealed to several American dental firms who responded with instruments sent without charge to equip these teachers for their work. The same lead was followed in obtaining literature and charts on oral prophylaxis from manufacturers of tooth brushes and tooth pastes.

Carefully kept vital statistics are an essential to every well organized community for they provide a picture of the life history of the people. Vital statistics usually include such facts as the number of people, the births, the deaths, the occurrence of disease, and the conditions attending these events.

VITAL STATISTICS

These figures form an indispensable basis for public health work. They furnish a means of comparing the life history of one community with another, or comparing the present with the past. These figures inform the public health officers of the incidence of communicable diseases.

In American Samoa the district health officers with the aid of the public health nurses report all births, deaths, and cases of illness to the public health officer. The Samoan people are becoming educated to the importance of correct vital records and the table showing the population statistics (Appendix, Table I) may be considered quite accurate.

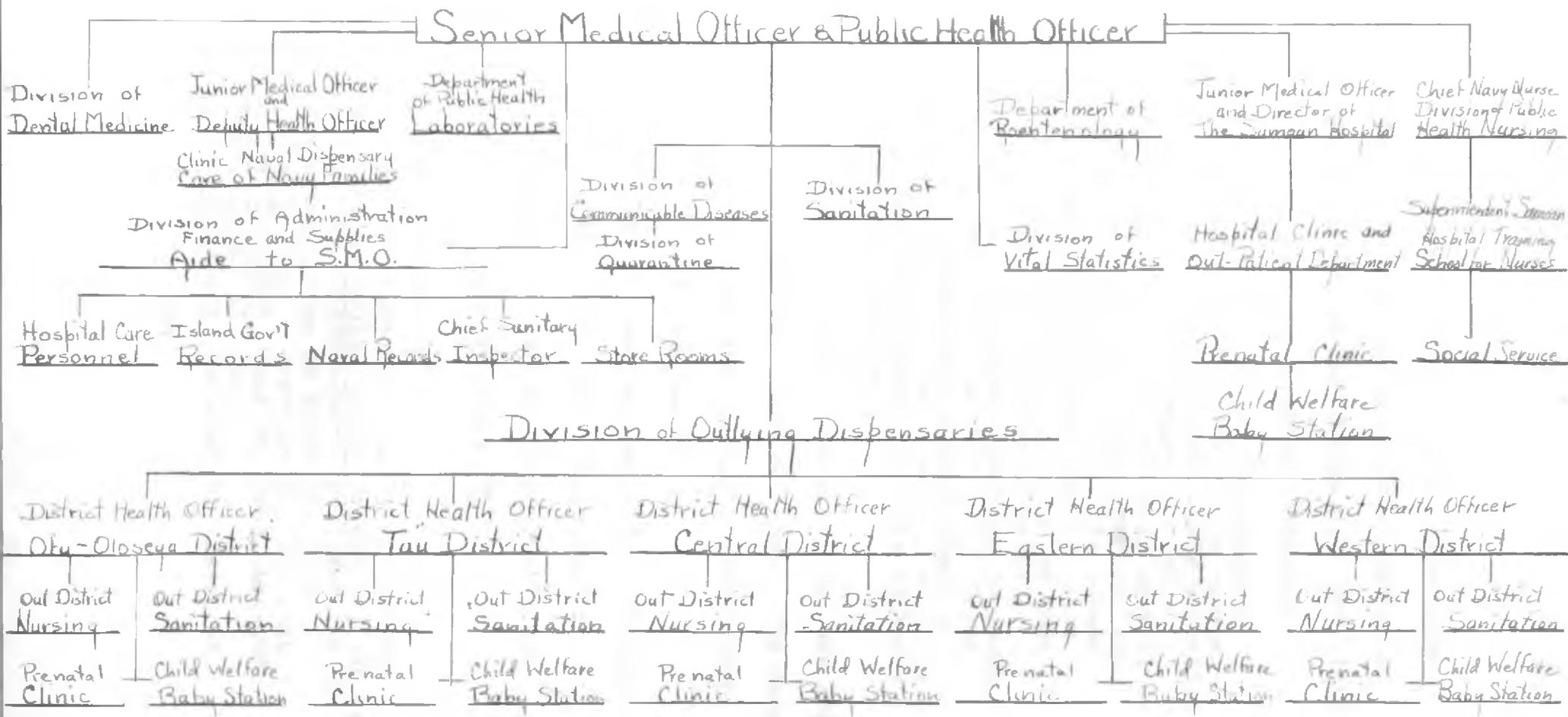


Figure 3. - Organization of the Public Health Department of American Samoa

A study of the population statistics table shows 468 living births in American Samoa in 1934¹ giving a birth rate of approximately 43 per thousand.² The birth rate for 1933 was 41.2 per one-thousand population.³

"Before the introduction of Christianity probably not less than two-thirds of the Samoan race died in infancy and childhood. This mortality arose principally from carelessness and mismanagement in nursing; evils which still prevail to a great extent. Even now (1884), perhaps one-half of them die before they reach their second year. . . . The Samoans were always fond of their children, and would have done anything for them when ill; but, with the exception of external applications for skin diseases, they had no proper remedies for the numerous disorders of children. Were their care in preventing disease equal to their anxiety to observe a cure when the child is really ill, there would probably be less sickness among them, and fewer deaths."⁴

The number of deaths from all causes in 1934 was 164, making the death rate 15.03 per 1,000 per year. The total number of deaths for 1933 was 146, giving a crude death rate of 13.82 per 1,000 for the year.⁵

The causes of death in American Samoa for 1934 are recorded in the Appendix, Table III. The number of deaths arranged according to sex and quinquennial age groups is given in the Appendix, Table IV.

1. The most recent statistics available for this study were those from the Public Health Report for the year ending December 31, 1934, which report was submitted to the Governor of American Samoa on March 15, 1935.

2. Public Health Report, December 31, 1934, 65.

3. Public Health Report, June 30, 1934, 101-102.

4. G. Turner, Samoa, 135-136.

5. Public Health Report, December 31, 1934, 49.

The records giving the number of communicable diseases and the resulting deaths are of vital importance to the subject of health education. Theoretically, the communicable diseases are preventable, and actually most of them can be prevented in an isolated island group like Samoa when the people understand the nature of the diseases and cooperate intelligently with the department of public health.

The Governor of American Samoa has issued laws in the form of station orders at the request of the department of public health in an attempt to govern the conduct and habits of the people so that certain communicable diseases may be eradicated. The ineffectiveness of this method can be seen by noting the prevalence of these diseases.

(Appendix, Table V.).

For the past twenty-five years medical men, especially those interested in public health work, have recognized that many diseases can be prevented only by intelligent personal behavior. Earlier health practices, at least

HEALTH EDUCATION since the time of the discoveries of Louis Pasteur in 1865, attempted to safeguard public health by sanitation and immunization.

Health education developed, then, to instruct people in health matters, presenting sound knowledge in the field of health practices, and leading them to develop

right attitudes and habits.

The real need for health education was first brought to the attention of the American people as they read the alarming reports of the defects disclosed by the physical examinations of the young men who volunteered or were drafted into service during the World War. One out of three men examined was unfit for military service.¹ This led to additional investigation which disclosed that nearly one-fourth of the total deaths in the United States are caused by communicable, therefore preventable, diseases. Also the many cases of sickness which do not result in death from these communicable diseases are a serious economic loss. Dr. Eugene Lyman Fisk estimated the annual losses from tuberculosis, typhoid fever, malaria, and hookworm at about one billion dollars. He considers these diseases theoretically preventable, and in practice at least seventy-five per cent preventable.²

The school children of America lose many school days from preventable diseases. Figures from New York City showed that the average child misses eleven days in the school year.³ Physical defects in school children are discovered in alarming numbers when careful physical

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1. Wood, Health Education, 17.
 2. Ibid., 14.
 3. Ibid., 16.

examinations are made. Doctors believe that the application of our present knowledge of healthful living would eliminate much of the illness and forestall many of the defects, if the parents, the teachers, and the children were given sufficient education in matters of health and hygiene, and these principles put into practice.

Mental health and social health, as well as physical fitness for all the people, are goals in health education, which program aims to dispel ignorance and to direct human desires and motives. Every study of health conditions in both urban and rural communities has revealed the crying need for health education.

The educators looked to the medical profession for advice. Much pioneering had to be done in building and introducing a program of health education. The National Education Association appointed a committee on health problems to meet with a similar committee from the American Medical Association to prepare a definite program of health education for the public schools and the teacher training institutions of the United States. This Joint Committee, made up of specialists in education and public health, presented its report to the schools in 1924 and has since made changes and improvements in its suggested health program.

The aims of health education as stated by the Joint Committee are:

"1. To instruct children and youth so that they may conserve and improve their own health.

"2. To establish in them the habits and principles of living which throughout their school life, and in later years, will assure that abundant vigor and vitality which provide the basis for the greatest possible happiness and service in personal, family and community life.

"3. To influence parents and other adults, through the health education for children, to better habits and attitudes, so that the school may become an effective agency for the promotion of the social aspects of health education in the family and community as well as in the school itself.

"4. To improve the individual and community life of the future; to insure a better second generation, and a still better third generation; a healthier and fitter nation and race."¹

Health education is concerned primarily with positive constructive health building. Diseases and various physical ailments are studied in a health program to emphasize the significance of neglect of health. Yet the aim held up before the student is to strive for radiant health and its attending happiness, and not the avoidance of disease, sickness, pain and death.

"The modern health education movement is a health training program which places primary emphasis upon health behavior, supplying from year to year the underlying health knowledge according to the age level and interest of the children. It has enlisted the great body of classroom teachers in the health training of children, and they are the only people in the school system who are in sufficiently continuous

1. Wood, Health Education, 7.

contact with the child to carry through the training program which is necessary for habit formation. It has replaced the learning of unrelated physiological facts by activities leading to habit formation."¹

The health education program must be constructed for each community based upon its actual needs. General theories and ideas about community health should never form a working basis; but the facts resulting from a health survey and careful study of all statistics, may provide the data for the construction of a suitable health education program.

The health education program must be organized and definite. The program must be clarified for each grade level, and the material presented should be increasingly varied and advanced in each succeeding grade.

A study of the available literature on health education shows that both educators and health officials are in agreement on the principles involved in working out a health education program to fit the school curriculum.

Every school subject which is in any way related to health education should play a definite part in contributing to the ideas and the formation of habits which build pupil health and community health. If health

HEALTH EDUCATION
AND THE SCHOOL
CURRICULUM

1. C. E. Turner, "Health Education as a World Movement." University of Hawaii Quarterly Bulletin, XII:3, 124.

education is incorporated into other school subjects and activities, the need for special periods devoted to health teaching will be minimized.

Elementary schools find that their health education program can be carried out much more successfully by making it a part of the other school subjects rather than devoting a certain period to health education. Frequent repetition is particularly valuable for younger children when the responses are repeated under varying situations. When health education is related to the activities of the pupil's life the knowledge and attitudes acquired are more apt to carry over into home and community activities. When pupils go to a particular teacher in a certain room for health training there is a danger of developing health consciousness in that definite environment which does not function outside of that situation. In the health room the pupils might adopt the correct sitting posture and see that the room was properly ventilated and lighted, yet they might not consider these and other health practices in an ordinary classroom situation. Nearly every elementary school subject presents opportunities for health education which any competent teacher can direct.

The subjects in the curriculum of the secondary schools offer still greater opportunities for health education. The studies in natural science and social science are not complete without emphasis on personal and community

health. The physical education program in the upper years should have as its major aim the development and care of sound bodies. Where household activities are taught to the girls and manual or vocational training given the boys many of the projects can be correlate with the health education program.

In addition to the health work which is coordinated with other school subjects it is usually necessary to have some time regularly and definitely assigned for certain health procedures. Among these are a definite time for the morning health inspection, regular periods for weighing, a time for milk drinking, rest periods when advisable, and such other features as the school's health program requires.

The Joint Committee on health problems in education suggests that the health education program "should provide for three kinds of closely related elements, namely:

- a. Activities and situations
- b. Subject matter to make activities intelligent.
- c. Outcomes in term of habits, attitudes, and knowledge."¹

The activities and situations include all the every-day occurrences in the school and community which call attention to health as a specific problem. Such school activities as games, sports, noon lunches, rest periods, and school sanitation as well as personal cleanliness are

1. Wood, Health Education, 73.

real life situations demanding health interpretations. Other situations might arise in the form of accidents and injuries, a community epidemic, or even the presence of all sorts of diseases and ailments. Some health situations are always present awaiting a solution. The normal school or community situation is always preferable to a created means of solving health needs.

The subject matter used to interpret these activities is the necessary information or knowledge which makes conscious and intelligent the means of meeting the health needs. To be understood the subject matter must be presented in relation to definite health activities.

"If subject matter is presented as a part of a total situation, including an understood and appreciated need, the probability that it will be recalled and used when the occasioning part of the situation recurs will be relatively greater than if the subject matter is presented in isolation from its use."¹

Some study of anatomy is necessary but there is a question as to the value of such procedure as memorizing the names of the bones of the body unless it answers some real problem with which the pupils are dealing. The children may learn to name the foods which promote health and body vigor but the real learning takes place when they eat these foods for the school lunch and in their own homes.

1. Wood, Health Education, 73.

Both health activities and health knowledge should be selected on the criterion that they help to meet an individual or a community health need. "Is it useful?", is a question that might well be asked concerning each practice in a health program. For instance, it would be useful for the Samoan pupils to know that rest and proper diet will arrest the ravages of tuberculosis, that mosquitoes carry the organism causing filariasis, and that flies may spread both jaws and typhoid.

A school health program must be graded to correspond to the needs of the pupils as well as to their varying levels of interest and understanding. Health habits may be developed in the youngest pupils before they are able to understand the related health principles. With the older children the health practices will be of greatest value when the pupil sees the reason for his activities.

"The curriculum in health education should be specific and detailed in presenting health subject matter and outcomes, as knowledge, habits and attitudes, but should allow for much freedom in making use of such variable conditions and situations as are found in different classes, schools and communities. While content and outcomes should be specific, activities and conditions through which these are to be realized should be suggestive."¹

Health education can be expected to change the immediate present environment of the pupils only to a

1. Wood, Health Education, 74

limited extent. But by establishing attitudes and ideals in the present generation of school children and supplying them with the necessary scientific backgrounds, the living conditions of the future will be improved by the support which will be given by these children when they have become the citizens and have a part in the public welfare work.

"Life insurance companies are very properly concerning themselves with health and longevity. They are leading their policy holders to secure skilled medical and nursing service. They are making a most valuable contribution to public health education by placing at the disposal of the general public an enormous amount of valuable educational material. Definitely beneficial results are being obtained. During a recent eleven-year period while the length of life of the average American citizen was prolonged five and one-half years, the life of the average policy holder of one company was prolonged eleven years."¹

Thus it is seen, in the brief history of health education in the United States, that this new and personal approach has been made to the children to improve their health conditions by intelligent individual action. Tentative health programs have been developed by the joint efforts of medical men and educators. These programs have been adapted to the needs of certain communities and they have proved highly satisfactory giving the promise of fulfilling the aims and ideals of the health education program.

1. C. E. Turner, Personal and Community Health, 351.

The health education work in the schools of Newton, Massachusetts, has been particularly successful in carrying out certain principles which have contributed to the health and happiness of the school pupils and to the entire community as well.

Some fundamental educational principles which have been made a part of the health education program of the schools in Newton, Massachusetts, are:

"1. Successful health teaching must be positive--pupils must be stimulated to live right rather than to think about disease and limitations.

"2. Successful health teaching is habit formation and must be continued through the child's school life--approached with sufficient motivations to avoid monotonous repetition.

"3. Desirable health habits can only be formed by actual daily practices.

"4. There must be a definite checking up and recognition of the health achievements of the child by the school. Health standards must be concrete so that the child can know when he has reached his goals.

"5. The psychology of the child's own classroom group is an effective factor for stimulating the individual child to higher health standards. It is necessary that the teachers should live and share the children's health experiences with them. Much of the success of health teaching depends on the attitude and understanding of the teachers in relation to the welfare of each child. The psychological approach to health teaching as in all other teaching must be varied with various age levels.

"6. Health needs of children in various school districts are different, and these differences must be met. In the less privileged districts it is

futile to attempt higher standards than the environmental conditions of the home will permit. School health activities must have as a first consideration the welfare and happiness of each child.

"7. Emphasis on health information as well as habit formation must be stressed in the grammar grades."¹

Health education as a school activity is comparatively new and as yet there are very few controlled, scientific tests for measuring the efficiency of the program.² There is also a lack of records which makes comparisons between schools and communities difficult. Such measurable factors as gain in height and weight, fewer absences because of illness, correction of faulty vision by glasses, removal of diseased tonsils and correction of dental defects are definite indications of the success of a health education program.

In answering a questionnaire sent to all the elementary teachers in the schools of Newton, Massachusetts, ninety-seven per cent believed that the school health teaching was carried over into the homes. The special nutrition worker reported, "I have visited no home which, in some degree has not been affected by the school health activities."³

A three year program in health education was conducted in two schools in Malden, Massachusetts by the Department

1. Latimer, A School Health Study of Newton, Massachusetts, 29-30.

2. See: Dr. Raymond Franzen, Health Education Tests, 1-70.

3. Latimer, A School Health Study of Newton, Mass., 83.

of Biology and Public Health of the Massachusetts Institute of Technology. The objectives of this project were to determine if health could be taught, what teaching methods were best, and if health education was practicable as a school activity.

"Given a fair but experimental and critical trial, without any initial investment of funds from outside sources, health education commended itself to the school authorities, teachers and parents as a sound procedure, contributing to general education and worthy of adoption as a part of the public-school program. In the judgment of physicians and nurses, health education was a benefit to medical and nursing services. The program resulted in an improvement of habits, attitudes, and knowledge.

"Health education was given a critical trial in Malden and was compelled to prove its own worth. The people who were concerned with the activity and who saw the reaction of the children exposed to the training program believe that it is a sound and practicable procedure. Many school systems have similiarly convinced themselves of the practicability of an organized and supervised program of health education."¹

The public school system of Binghamton, N.Y., has been extending and improving its school health program since 1914 and it now serves as a model to other schools.²

A national crisis like the World War was necessary to awaken the American people to the dire need of health education in continental United States. Both the medical and school authorities in Samoa have long been conscious

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1. C. E. Turner, Principles of Health Education, 65-66.
 2. Kelly, A Practicable School Health Program, 1-31.

of the need for health education, not only in the schools

NEED OF HEALTH
EDUCATION IN
AMERICAN SAMOA

but to reach the adults as well. The

seriousness of this need was most force-

fully brought out by Dean B. O. Wist who

concluded after an intensive study of the needs of the children of American Samoa:

"With the increase in health problems, in the wake of contact with outside civilization, the Samoan race will perish unless attention through education is given the Samoan child. With this already established Western contact, the survival of the fittest can no longer serve to keep the race alive."¹

Here rings a challenge to the people of American Samoa, to the educators, and to the health authorities. The factors which are confronting the health of the Samoan people have contributed to the depopulation of many of the islands in the Pacific.

Captain Cook estimated that there were 100,000 Marquesans in 1773, the most physically perfect men and the most beautiful women in the Pacific. A century and a half of contact with the white man and his diseases so reduced their numbers that Dr. E. S. C. Handy of the Bishop Museum found 1,200 in 1924.

"There is not a sound physical specimen of humanity in the Marquesas today, and it is almost

1. Wist, "Ethnology as the Basis for Education." Social Science, Vol. 10, No. 4, 341, October, 1935.

certain that, before the next decade has run its course, not a solitary Marquesan will survive."¹

The Hawaiians, Maoris, Tahitians and other Polynesians suffered great population losses from introduced diseases. Population estimates show that the Samoan people were reduced nearly fifty per cent during the first century after their contact with European diseases.

"The customs of the people and the lack of medical facilities afforded a clear path to the disease, and the group became a charnel-house of despairing natives."²

S. H. Roberts, in his study of population problems in the Pacific, offers more hope for the recuperation of the Samoans than for any other important Polynesian group. This should be encouraging to the health officials who are working with the native Samoans.

"Since 1918, however, notwithstanding the enfeeblement of the native stock, a marked recovery has been evident. This facility for recuperation has always distinguished Samoa from the other groups, and there is no doubt that the race, a fine one in all ways, is flourishing.

"The reasons for this prosperity are not hard to find. 'The people are the most chaste and one of the most temperate of island peoples;' their traditional customs have been maintained to a degree unusual in the Pacific; their system of village councils and rule by chiefs is a model for the Polynesian groups; they have largely resisted the introduction of European tinned foods; they take a delight in exercise; although no desire to perform

1. Roberts, Population Problems in the Pacific, 93.
2. Ibid., 105.

steady work on plantations; they have stood out against the destruction of their ancient system of land-holding; and European clothes have, in the main, not had the appeal which the lavalava has for the men and a tabard for the women. They know nothing of poverty, and life for them is still varied, and not, as with the islanders elsewhere, a phantasm of gloom. ...The Samoans, merry as of old, orderly under the rule of their own leaders, chaste under the ancient systems of morality, survive and flourish--a model to Pacific peoples."¹

Granting that the maintaining of Samoan customs has kept alive a certain tenacity of spirit which has contributed to their rehabilitation, it is essential that administrators, health officials and educators recognize this fact in their dealings with the Samoans. In addition to a sympathetic recognition of the value of maintaining native customs the administrators are confronted with the problem of improving the general health conditions which looms as a governmental task in almost every case.

"Ninety-five percent of the causes of social decay among the islanders are preventable by proper public health administration. As preventive medical measures have been put into vogue the death rates have dropped in dramatic proportion, especially in the age groups from birth until five years.

"Civil administrators have been sympathetic and have facilitated the proper expansion of medical knowledge and supplies and have encouraged a more thorough study of matters of sanitation and diet.

"The emphasis has been largely upon the public health aspects of medicine."²

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1. Roberts, Population Problems in the Pacific, 105-106.
 2. Lambert, "The Reappearing Polynesians," Honolulu Star-Bulletin, July 9, 1935.

The health problems of Samoa were approached from the standpoint of sanitation. The principles of sanitation were sound and developed to correct certain unhealthful native practices. But the personal habits of a people could not be changed by issuing a law in the form of a Station order which ruled that long established customs must give way to new health practices.

An attempt has been made to combat a number of Samoa's serious health problems by immunization. This method would have proved more successful if the people had developed a health consciousness based on health knowledge which would have caused them to respond whole-heartedly to the requests of their medical authorities.

The leading causes of sickness and death in Samoa, tuberculosis, pneumonia, septicemia, and malnutrition, cannot be controlled by immunizing processes and only to a certain extent through sanitation. But all will respond to proper health habits and conduct which are taught to the individual in a program of health education.

Judge Walter F. Frear, in his "Report on Health in American Samoa" submitted to the trustees of the Barstow Foundation at the close of the Committee's visit to Samoa in the summer of 1932, considered the subject of health a major objective essential to the lives of the Samoan people whom this foundation serves. He reported:

"This subject, important even under most advanced conditions elsewhere, is relatively more important in a country like Samoa, because of still-obtaining native customs and concepts that have to be overcome, and because of danger from foreign diseases from which there has not been time to acquire any appreciable degree of immunity, and as to how to deal with which there is necessarily much lack of understanding, not to mention the prevalence of certain serious aboriginal diseases." 1

"The naval station medical service is splendid and within its limited means doing everything possible to correct the situation. The public works service is constantly laboring to establish better sanitation. But excellent as are these services, they cannot reach to the source which is that of health consciousness and understanding by the Samoans themselves. Public education must somehow be the answer to this." 2

Major General G. S. Richardson, in his pronouncement of policy in 1924 considered Samoa's most urgent need:

"The education of the people in the laws of health and sanitation, so that the race may become healthy and multiply." 3

"Samoa is thus in terms of health a battleground where old diseases with their attendant ideas and methods of treating the sick, added to by introduced diseases and unhygienic conditions of the transition period, are opposed by the new medical science. The first enthusiastic assaults of the latter have made some headway, but the traditional forces, strong enough in Western society, have been little or very impermanently shaken. For the time being, therefore, there has been at many points a compromise. Nowadays the authorities of both areas

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1. Frear, Studies in Samoa by a Commission of the Barstow Foundation, "Report on Health in American Samoa," 1.
 2. Wist, "Ethnology as the Basis for Education," Social Science, Vol. 10, No. 4, 341, Oct. 1935.
 3. Roberts, Population Problems in the Pacific, 207.

are trying a new weapon--education. How effective this will be depends perhaps less on the health department directly than upon those whose task it is to reshape Samoan mentality, the missions on the one hand, the school teachers on the other."¹

The course of study for the schools of American Samoa was developed by the Visiting Staff to the Samoan Teachers Institute in 1932 and 1933 under the direction of Dean B. O. Wist, of the Teachers College of the University of Hawaii.

This program of education for American Samoa establishes a definite objective, that of conserving the best of the Samoan culture, and acquainting the pupils with the culture of the West in order that the Samoan people may be prepared to meet the conditions of the changing world.

Definite criteria are established to serve as a basis to the course of study. Health education is established as one of the criteria in the educational policy for the public schools.

THE PROGRAM OF HEALTH
EDUCATION IN THE
SCHOOLS OF AMERICAN SAMOA

"It is recognized that health is fundamental to education and that no educational program is complete without adequate attention to health and sanitation. Modification in ways of living will unquestionably be followed by the introduction of new disease problems. To cope with these the elementary school program must be such as to bring about health consciousness, knowledge of the basic principles of health and sanitation, good health

1. Keesing, Modern Samoa, 394-395.

habits and desirable attitudes of cooperation in maintaining the public health."¹

A survey of the course of study, which was proposed by the Visiting Staff and is now in effect in the public school in Samoa, will show that health was emphasized in every possible phase of the school program.

An objective set up for the primary teachers is: "The development of pupil health consciousness and initiative in caring for and promoting health."²

The general theme for the First Year program is "Homes and Home Life." The first activity of the school day after the opening exercises is a twenty minute period devoted to health needs. The program analysis, to guide the teacher in this health period informs him:

"Aim at having pupils develop habits of cleanliness of body, of dress, and of surroundings. Avoid the formal inspection by teacher or pupil, but rather have pupils learn to inspect themselves before coming to school. The teacher, of course, keeps a watchful eye upon each and all. English expression should be taught in connection with the health work, but make sure that meaning is expressed, not just empty forms. General conversational forms are best.

"'I washed my face, and hands, and feet this morning.'

"'I use soap when I wash.'

"'My mother washed my ears.'

"'I have scabs on my legs.'

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1. Wist, Report of the Visiting Staff, 258.
 2. Ibid., 263.

"What shall I do for the scabs?"

"There is no limit to the conversation that may be developed in connection with health. The great need of both children and adults in present day Samoa is a balancing of diet with more fruit and vegetables. Teachers should attack this need. They can stimulate an interest in producing more and consuming more of this wholesome element in the diet. Vegetables may be grown in the school garden for the school lunch. Language must be taught along this line. Pupils suffering from scabs on the limbs or body should be taken to the dispensary for treatment, arrangements first being made with the nurse in charge. Flies and mosquitoes are great enemies of health. They breed only in stagnant water and filth. The life history of each of these pests should be shown and simply expressed. They may be exterminated by removing the breeding places. Pupils should have several regular periods for drinking fresh water."¹

The first year program provides for a rest period at lunch time. The teacher is advised in carrying out this period:

"Pupils require a short period or two each day for complete relaxation. At school this is best taken before lunch. Pupils stretch out on their backs and go to sleep if possible. At least fifteen or twenty minutes should be allowed for this period. After rest pupils need a good lunch at noon. The teacher uses his skill in devising ways and means of procuring this. Food from home will be brought. This may be supplemented by products of the school garden to provide a balanced diet. The meal should be a social one at a table and in an attractive location. All should remain until the meal has been finished."¹

The general theme of the Second Year program is "The Child's Community Life." A health period is conducted as

1. Wist, Report of the Visiting Staff, 266-267.
2. Ibid., 270.

as in the First Year but extended.

"...the aim being to have established in all pupils habits of healthful living that will become fixed for life. Children should acquire the attitude of dissatisfaction with anything that is wrong in their life, and also acquire the habit of going after the wrong things so as to have them removed. For example, children must learn to be repulsed by dirt on body or clothing, by sores on the body, by sickness of any kind. Then they must learn to take the initiative in removing all such offending matter or ills. Teachers can do much to set a good example in their own living. They should cultivate the acquaintance of the nurses and doctors of their districts. Those will be very happy to cooperate. Pupils must be cleaned up, freed from all dirt and skin diseases. It takes only a short time to have this done. The school surroundings must be made sanitary. There must be nothing to attract flies. Pupils will be encouraged to keep their home surroundings sanitary. The teacher's responsibility in his community is a great one."¹

Health emphasis is given during the Second Year in the rest and lunch period, and in the recreation period where the pupils develop English expression. Examples taken from the Second Year program analysis in which health knowledge is given in an English exercise are:

"A mosquito bites us	Flies grow in dirt
It makes us sick	They are not our friends
It grows in standing water	They make us sick
	We must keep our places clean.
	Then we shall not have flies." ²

The general theme for the Third Year program is "Foods and How They are Secured." In the morning health period:

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1. Wist, Report of the Visiting Staff, 272-273.
 2. Ibid., 277.

"The same program should be continued for Third Year pupils. There must not be any let-up on attention to health welfare. Sanitation of the community will be considered more extensively than in the preceeding years."¹

"Visits to see what foods are sold should be made. A visit to the commissary of the Naval Station and to the cold storage plant will provoke much discussion and inquiry. Where does Samoa get its flour? How is it made? Where is wheat grown? Would it grow on our plantation? Try it. This inquiry followed up, develops an understanding of one phase of American life. Similiar questions will arise concerning our meats. These will lead to New Zealand. Importations of salmon lead to Alaska and the North West of the United States. The study of oranges takes us to California. China and Japan will be studied through the use of rice. Through sugar and canned pineapples the pupils will be introduced to the different peoples on the great plantations of Hawaii. Butter is brought from Fiji. Find out how the Fijians make it. How are cows kept? The study of coffee will take us to Brazil."²

This program emphasizes health education as well as geography and English. If the teacher is familiar with the foods that make up a balanced diet he can point out the dangers of adding some of the introduced foods to the Samoan menu. And he can strongly recommend the use of other imported foods. The dangers and benefits of imported foods as dietitians see them will be explained later in this chapter.

In the course of study for the Intermediate years one of the specific objectives is: "Desirable health habits

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1. Wist, Report of the Visiting Staff, 278.
 2. Ibid., 280.

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1. Wist, Report of the Visiting Staff, 278.
 2. Ibid., 280.

and attitudes should be taught."¹

The general theme for the Fourth Year program is "Shelter and Clothing." The forty minute period devoted to health and physical education comes immediately after the noon recess.

"This period should be devoted to the building of better health habits and attitudes. It is more important that children learn to appreciate the importance of good health, and desire to do the things that make people strong and healthy, than that they memorize a lot of facts about the human body or about health and sanitation. The teacher, with his children should discover those problems of keeping well which are within the comprehension of the particular group of children with whom he is working. What can a child do to get rid of painful sores, headache, sore eyes and like troubles? What can the class do to rid the village of flies and mosquitoes? A survey might be made to places where these breed and ways and means of disposing of these places discussed.

"Children should be given an opportunity during this period for finding out better ways of solving their health problems. This can be done by reading for certain needed health information. There are many interesting and valuable health books available for children of this level in school. Letters may occasionally be written to health officers, doctors and nurses for information of a specific nature not found in books.

"The health period work can readily be tied up to the theme for the year. Thus, shelter and clothing as they affect health should be major items of interest in the fourth year of school. The ways in which shelter and clothing are used to protect health in other lands should be studied.

1. Wist, Report of the Visiting Staff, 284.

"A part of the health period should be taken for physical education. That is supervised play. The teacher should teach the children to play many games. There are many interesting books available which contain complete descriptions of games which need little or no equipment. The Samoan sivas should not be neglected. Many of these are most worthwhile.

"Finally, the teacher must be constantly on the look-out for symptoms of illness and refer cases to the doctor or district nurse for treatment. In fact the teacher should look upon himself as an assistant to these and report cases of illness in the village, not among his pupils, where he is aware of such. In this period the teacher should make a daily, but informal, health inspection to detect skin disease, sore eyes, uncleanliness and the like. This inspection need not be made embarrassing to the child. The teacher locates individual health needs and is stimulated to work harder to get particular children to practice doing with success those things which will help them to get well and keep well."¹

The general theme of the Fifth Year program is "Transportation." As in the themes for the previous years, this subject offers material for health education and the teachers are given these suggestions:

"Transportation facilities are responsible for many of the Samoan health problems, such as tuberculosis. On the other hand, it is by means of transportation that we have doctors and papalagi methods of caring for health problems in a better way than was known to the Samoans before their coming."²

"In Year Five the children will be expected to extend their interest in sanitation problems of

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1. Wist, Report of the Visiting Staff, 292-293.
 2. Ibid., 296.

Samoa in general and their own community in particular. Under proper direction and by permission of proper authority, they may even assist the community in eradicating places of common nuisance. The health and sanitation problems of other countries will be reached through the general theme of transportation. The child by this time has a better reading comprehension and should be able to get much more from the reading of health books and the like. In this year as in others, however, the teacher must bear in mind that information about health and sanitation has little value unless it forms the basis for correct habits and attitudes.

"The program of physical education can well be included with that of Year Four. However here again transportation leads the child abroad. The games of children of other lands are interesting and some of them can be played. For instance, the game of Hop Scotch is played in Samoa. But is also played in practically every land on the face of the globe and is one of the oldest games in point of history. A study of this game and the playing of many variations of it should be interesting and educative as well. The teacher should guard against making the physical education period one of formal gymnastics. It should be regarded as supervised play, organized by the children and played by them, the teacher taking the role of umpire and helper."¹

The theme for the Sixth Year centers around

"Communication."

"By this time the child, because of increased reading comprehension will be able to get much more from his reading. He should be encouraged to read wider afield in the subject of health and sanitation. As far as possible, the health program should be integrated with the yearly theme. But the teacher must ever keep in mind that the big thing in this period is not knowledge for knowledge sake, but knowledge as a means to the necessary health consciousness, health habits and attitudes.

1. Wist, Report of the Visiting Staff, 298-299.

"For physical education, the teacher should direct children into games and sports appropriate to the interests of children of this age. Many valuable books are available for help in this direction. One problem faced at about this level of the child's development is that of sex consciousness. Sixth Year boys and girls should be encouraged to play together. Many values can come from this. Among these are courtesy and gentleness on part of boys towards the girls, forgetting of sex differences and the like. The teacher should be on the alert for valuable concomitants."¹

One of the objectives which the teacher is to strive for in instructing the pupils in the upper years, that is pupils from twelve to fifteen years of age, is given as follows:

"Continue the development of health consciousness. While a health period is specifically provided, health and sanitation must be stressed in all of the child's activities to the end that he regards these fundamental concerns of his life and not as a number of things to learn about and discuss in his health period."²

The Seventh Year program is centered around the theme "The Polynesian Environment." The discussion in the program analysis informs the teacher that:

"In the upper years it is possible to stress more the factual knowledge basis for health and sanitation. The health period should also be used for games and sports of various kinds. Samoan children are lacking in good games and there are many books available to help the teacher with this problem. Sanitation should be given very serious consideration at this level. The subject of health and sanitation should be, and can be, tied into the yearly theme. For instance, health problems of Samoa and the Pacific Islands could be emphasized

1. Wist, Report of the Visiting Staff, 303.
2. Ibid., 306-307.

in the seventh year."¹

The Eighth Year program has as its theme "Government." In this subject the teacher may make definite references to health education.

"For the children of the Eighth Year level the program of study should be amplified in accordance with the general theme for the year. Thus the study of health problems of the Pacific, pursued in year seven, would extend to a study of these same problems from the standpoint of the United States. They should also be very definitely integrated with the central theme for the eighth year. Thus, the relationship of government to health and sanitation should be the basis of study. What U.S. government health agencies are there and what are they doing? What is the health service of the Naval Station in American Samoa doing? These and similar questions suggest the scope."²

The general theme of the Ninth Year program is "Nations as Neighbors."

"In the ninth year, however, the study of health should emphasize the problems of world-wide significance. For example the health education program of the League of Nations can be made the basis for much of the work of the health period of the ninth year group."³

The program of health education presented in the course of study suggests to the teacher many general health factors for consideration. A study of the communicable diseases which are responsible for many cases of illness

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1. Wist, Report of the Visiting Staff, 316-317.
 2. Ibid., 321.
 3. Ibid., 323.

and death in Samoa each year will give a wealth of specific problems to be solved by health education.

CONTROL OF
COMMUNICABLE
DISEASES BY
HEALTH EDUCATION

Each of the important communicable diseases will be considered from the standpoint of health education, and suggestions made for presenting this information to the Samoan pupils. Since most of the Samoan teachers have had very little training in health matters it would be desirable to include this as part of their training at the Teachers Institute each summer.

In this study these diseases will be listed alphabetically for convenience in referring to statistics and information. In presenting them in a health education program it would be logical to study them in such natural groupings as (1) Intestinal parasites, (2) Respiratory diseases, (3) Diseases spread through discharges of the nose and throat, (4) Insect borne diseases, and (5) Skin diseases.

For the calendar year 1934 there were 2787 cases of ascariasis and one death reported for all of American Samoa. This was an increase of 776 cases over the preceding year.¹

1. Public Health Report, Dec. 31, 1934, 66.

ASCARIASIS AND
OTHER INTESTINAL
PARASITES

The control of intestinal parasites is of vital importance in improving health conditions in American Samoa. Health education will play an important part in this work as the control measures must be intelligently practiced by the people themselves. Medical treatment is effective in freeing the population of intestinal parasites but unless they observe sanitary practices reinfestation will soon occur.

The 1934 Health Report lists a number of other intestinal parasites which infest the people of American Samoa: Whipworm, pin worm, *Taenia saginata*, Diptera (asiochaeta) and *Strongyloides*. (Appendix, Table VI). The ascaris will be discussed here and the possibilities of health education as a factor in its control. The applications made to ascaris may be made, in general, to the other animal parasites, considering, of course, any differences in the life history of the parasites.

Ascaris is a large nematode or round worm which infests the intestinal tract of people living in tropical countries. A person may harbor from a few to several hundred of these worms which may reach a foot and a half in length and the diameter of a lead pencil. The ascaris eggs develop only after they have been passed from the human body, the incubation period being usually less than

a month. However, the eggs may live in the soil as long as five years and be a source of infection during this time. When the eggs are ingested after they have incubated in the soil, the larva hatch in the human digestive tract. Some of the larva penetrate the walls of the intestine and go to the liver, or may pass from the blood vessels into the air sacs and bronchial tubes of the lungs, and then through the trachea to the mouth where they are swallowed. "It is now known that ascaris larvae may produce bronchitis and pneumonia in man."¹ The ascaris does not pierce the skin as is true of the hookworm larva.

The spread of ascaris depends mainly on soil infected with human feces, although the ripened eggs may enter the body through polluted drinking water as well as from infested soil.²

The control of intestinal parasites will be possible where human sewage is disposed of in a sanitary manner. This subject is discussed at length under typhoid, later in this chapter.

"For some unaccountable reason the people in Samoa are reluctant to provide stools for examinations for the ova of intestinal parasites...Only 29 per cent of the stools examined have been found negative for ova of intestinal parasites. It is the abiding conviction of the writer that repeated

1. Rosenau, Preventive Medicine and Hygiene, 922.
2. Ibid., 1070.

examinations of stools would reveal the fact that scarcely a native Samoan would be found free of intestinal parasites. This is easily explained when the habits of disposal of human excreta are considered."¹

The health officer reported an amazing improvement in bronchial conditions when the patients were treated for intestinal parasites.²

The subject of intestinal parasites offers many projects for serious consideration in the health education program. The life history of the parasite should be studied, noting the means of spread and reinfestation by the organism. The phase of sanitation should be stressed observing that a campaign of "de-worming" is valueless unless it is accompanied by sanitary improvement. It should be pointed out that the health officer learns of the presence of parasites in the intestines by the occurrence of ova in the stool which he examines.

The 1934 health report gives 1095 cases of acute bronchitis, an increase of 71 over the preceding year. And 3209 cases of acute catarrhal fever, an increase of 1843 over the previous year.³ No deaths were reported from these diseases in either year.

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1. Public Health Report, Dec. 31, 1934, 91.
 2. Ibid., 94.
 3. Ibid., 66.

Bronchitis may be discussed from the viewpoint of health education as there is reported to be "a definite

BRONCHITIS AND
CATARRHAL FEVER correlation between the number of intestinal parasites and the incidence of bronchitis in young individuals living in tropical and sub-tropical climates."¹

The epidemic of catarrhal fever which occurred in mid-October, 1934, followed the arrival of a vessel from Western Samoa. This disease can be studied and attempts made to keep it out of Samoa by strict quarantine.

A total of 1,674 cases of acute, infectious conjunctivitis were reported for American Samoa for 1934, and increase of 492 over the preceding year.²

The health records in American Samoa have discussed the "so called Samoan conjunctivitis" since 1908. The disease is contagious, being spread through secretions from the conjunctiva, and from the secretions which pass from the conjunctiva through the lachrymal passage into the nasal cavity and into the mouth, from where they may be spread by coughing or speaking. The
CONJUNCTIVITIS germ is known as the Koch-Weeks bacillus and so affects the tissues of the eye that the loss of vision of one or both eyes may result.³

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1. Public Health Report, Dec. 31, 1934, 94.
 2. Ibid., 67.
 3. Public Health Report, June 30, 1934, 160-161.

Conjunctivitis is more prevalent during the breadfruit season which is the fly season in Samoa as the flies breed in great numbers in the rotting breadfruit. The health officer reported that he had observed flies feeding on the pus from the eyes of sleeping patients and watched these flies proceed to eyes of children who were not infected, thus spreading eye diseases.¹

Conjunctivitis "responds well to argyrol and routine treatment, and I think many of the complications of this disease are due to maltreatment by the Samoans; such as wiping the pus from the eye-lids with a dirty piece of cloth or a piece of palm leaf, and in so doing causing minor scarifications and lacerations of the cornea, and giving a site of invasion for the bacilli, with the usual resulting ulcer of the cornea of greater or lesser degree."²

The campaign against conjunctivitis carried on by the department of public health has greatly reduced the damage from the disease. The pulenu'u of every village was provided with a supply of argyrol and taught to use it in treating the people of his village. Some of the more responsible school teachers were given silver protein and instructed to use it on conjunctivitis patients.

In 1910 a record was filed reporting two cases of trachoma which were detained by the quarantine officer. No further mention is made of trachoma in the records for subsequent years. However there was a feeling that the

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1. Public Health Report, Dec. 31, 1934, 112.
 2. Public Health Report, June, 30, 1934, 161.

"so called Samoan conjunctivitis" might be more properly diagnosed as trachoma.

"During a health survey in 1933, two thousand and twenty school children were examined. ...Two hundred and two or ten per cent of the two thousand and twenty examined had a condition of the eyelids which would undoubtedly have been diagnosed as trachoma in the United States. It is unwise to make snap shot diagnosis in any condition, and the diagnosis of trachoma was not established because of the controversy in certain islands of the South Pacific over the question of the 'so called Samoan conjunctivitis.' or trachoma."¹

In July 1934 the medical officer of the U.S.S. Astoria joined the public health officer of American Samoa and they conclusively demonstrated that trachoma exists. A survey was made in which 2581 cases were tabulated from villages and schools on Tutuila and in Manua. Of this number 2117 or 81.94 per cent were positive, 426 or 17.28 per cent were negative and 40 or 1.79 per cent had been blind since 1933.²

The eradication of trachoma from American Samoa will be greatly facilitated by health education. The public health officials have instructed the native officials and the clergy in the proper medical treatment and have emphasized the need for clean personal habits. During the Teachers Institute in 1934 the teachers were shown the disease in its various stages and lectures and demonstrations

1. Public Health Report, Dec. 31, 1934, 109.
2. Ibid., iii.

were given concerning the method of treatment and prophylaxis. The teachers were given zinc sulphate solution and yellow oxide of mercury ointment and taught, not only to administer the treatment properly, but to give special attention to cleanliness to prevent the spread of the disease.

"The eventual control of trachoma will depend entirely upon the amount of interest that can be developed in the school system, the church and the native officials of each village."¹

This statement is a challenge to the above named groups to carry on a program of public education to inform the people of Samoa of the dangers of trachoma and insist upon continuous treatment and cleanly habits.

A factor which would prevent the spread of trachoma would be the use of individual towels by each member of the Samoan family. This would add an additional expense for an outlay of towels for a large family. Since the towel was introduced into the Samoan household by people whose custom it is to use individual towels it seems logical, considering trachoma and other infectious diseases, that towels not be used at all unless individual towels can be provided.

Another factor which should reduce the incidence of trachoma is the control of or screening against flies.

1. Public Health Report, Dec. 31, 1934, 112.

The Samoan fale is of such construction that screening would be difficult as well as very expensive. So many of the activities are carried on out-of-doors that a screened house would be but a partial protection against flies. The greatest benefits would be derived by ridding the village of flies. The government has passed laws making it mandatory for the people to keep the village free of filth in which flies breed.

"Pulennu'us are hereby directed to have all fallen breadfruit in and about the villages collected and destroyed during breadfruit season, to prevent the breeding of flies in the rotten breadfruit."¹

The law concerning the proper disposal of human excreta is discussed more fully under typhoid.

Despite these laws the villages in Samoa swarm with flies and many of the people are unconcerned about this menace to their welfare. The red ant (*Tridole megacephala*) is known to feed on the larva and pupa of flies and is given the credit for greatly reducing the number of flies in Hawaii. This ant is not found in Samoa and it has been suggested that this ant be introduced into Samoa to aid in the control of the flies. However, the ant might be as destructive to the Samoan food as it would be beneficial

1. Codification of the Regulations and Orders for the Government of American Samoa. Section 84, Sub-section 2. Breadfruit, 68.

in destroying flies. The Samoans keep their food stored in loosely woven baskets from meal to meal. This food would likely become infested with ants as the usual Samoan fale does not boast of an ant-proof food-safe. Biological control of insects is one of the most satisfactory methods known to science but serious thought should be given to this proposal to determine the damage that might be done by the ants, before they are introduced into American Samoa.

There were ten cases of dysentery reported for 1934, with one death, three cases were reported in 1933.¹ A health education unit may be developed similar to the

DYSENTERY unit on typhoid. Dysentery is spread in much the same manner as typhoid and the ideals set up for its prevention are: purity of water, milk and food; eradication of flies and rats; isolation of dysentery patients and carriers; and general personal and community sanitation.

In 1934 the cases of filariasis reported totaled 866, an increase of 606 over the preceding year.² Five deaths were attributed to this disease in 1934.

Filariasis is mentioned among the first diseases reported from Samoa. The filaria which causes the disease

1. Public Health Report, Dec. 31, 1934, 67.
2. Ibid., 67.

is a tiny slender threadworm which lives as an adult in
the lymphatics, connective tissue, and body
FILARIASIS cavities of man. The embryos or larvae are
found in the blood. The Samoan species is known as
Filaria bancrofti,¹ and its larvae is more common in the
blood stream at night. The only method known of trans-
mitting the filaria is by mosquitoes which have fed on the
blood of an individual who harbors the embryos.

Medical men are in agreement that filariasis can be
stamped out and that control resolves itself fundamentally
into a mosquito campaign.²

"The fact that it is not even under control
should be a challenge to both governments and
philanthropic organizations to get it that way--and
to continue until the disease is wiped out. The
expenditure of a very small fraction of the cost of
some 'noble experiment' would soon wipe out the
mosquito in Samoa and thus prevent reinfections."³

Mosquito larvae have been found in the water which
collects in the leaf axil of the taro and the banana plant,
and the foot-hold cuts in the coconut trees. Mosquito
control under these conditions presents a more serious
problem. These important food plants could not be
destroyed just to eradicate the mosquito larvae which
they harbor.

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1. Rosensau, Preventive Medicine and Hygiene, 298.
 2. Ibid., 298.
 3. Public Health Report, Dec. 31, 1934, 129.

The government has introduced the mosquito fish (*Gambusia affinis*) and stocked fresh water ponds which might be mosquito breeding places. The cannibal mosquito (*Megarhinus splendens*) which does not bite man has been introduced to feed upon the several other species which carry the filaria.

This problem offers a challenge to the schools in their health education program. A mosquito campaign would be an initial step which should be followed by diligent destruction of breeding places throughout the year. The domestic mosquitoes which breed in coconut shells, tin cans and the like around the villages carry filariasis.¹

The use of mosquito nets should be encouraged in the health education program. The nature of the medical treatment administered by the public health department should be explained so that the patients will submit to treatment with an understanding of its benefit to them. The school children should submit more cheerfully to having the blood specimens taken for making the microfilarial examination when they understand the nature of the test.

The children in the upper years should be interested in the prevalence of the disease and the economic loss

1. Public Health Report, Dec. 31, 1934, 136.

which results. Three hundred and eighty persons, or 3.59 per cent of the population show a deformity from filariasis.¹ Sixteen hundred and seven school children were examined and two hundred and seven or 14.75 per cent were positive.²

One thousand and eighty adults representing all the villages were examined and the results showed five hundred and fifty or 51 per cent carriers of filariasis.

"The youngest patient found showed embryos in the blood at eight months old. The oldest person found claimed to be over eighty years of age.

"From all the evidence before us it appears to be a reasonable inference that at least ninety per cent of the natives of American Samoa are harboring filarial worms."³

The loss of time by the persons visibly affected by filariasis deserves serious consideration from an economic standpoint. The persons suffering from filariasis were questioned and their accepted statements were averaged giving an aggregate of 19,220 sick days.⁴ The replies of two hundred persons who are known carriers show that they average six attacks of fever annually with an average of three days lost for each attack, or eighteen days per

1. Public Health Report, June 30, 1934, 131.

2. Ibid., 133.

3. Ibid., 134.

4. Ibid., 134.

year per person suffering from filariasis.

"Applying this figure to the whole population gives us 202,470 sick days from filariasis. Again this is probably an under-estimate. If that amount of time were devoted to civic and other improvements American Samoa would be an earthly Paradise."¹

The adult filarial worms and their eggs sometimes block the flow of lymph causing enlargements commonly known as elephantiasis. These enlargements may be in one or both arms, the groin glands, the scrotum, or one or both legs. The patient is inhibited or entirely unable to carry on his work depending upon the nature of the elephantiasis. There is a need for occupational therapy for these cripples, teaching them arts or crafts which would provide an income. This might be handled in connection with adult health education.

The first case of hookworm in American Samoa was discovered in November, 1909, and "investigation proved that 85 per cent of the natives were victims including every one of the 72 members of the native guard."²

A board of health was established in December, 1909, and gave special emphasis to sanitation, especially the building of latrines. The people were informed of the prevalence of hookworm through a special

HOOKWORM

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1. Public Health Report, June 30, 1934, 134.
 2. American Samoa. A General Report, 70.

feno held in January, 1910.

In 1934 the public health officer reported:

"Clinical hookworm is rarely seen. This is probably due to the original hookworm campaign and its continuance for years and the fact that the public health nurses are daily giving out treatment for worms. The standard worm treatment (oil of Chenopodium) and carbon tetrachloride in an acacia and water suspension is effective for this as well as other intestinal parasites. ...However, no permanent good will occur until sanitary privies or some other safe disposal of sewage for the villages is effected. Even then the customary soil pollution in the bush and plantations will continue for a long time. There is little likelihood that the Samoan people will be able to buy shoes for many years to come, and even less a probability that they would generally wear them on the plantations even if they were available."¹

An effort was made at the beginning of the school year in 1933 to get the children to provide stool specimens for examination. The effort was disappointing to the medical authorities as some refused to comply until forced to do so by the school teachers. Then when the stools were requested from the patients treated to determine the number of worms passed, many did not respond. Of the 537 stools examined 459 or about 85 per cent were positive,² as may be seen by Table VI. in the Appendix.

This problem readily lends itself to health education in a manner similar to that considered for ascariasis and for typhoid. When the nature of hookworm, as a human

1. Public Health Report, June 30, 1934, 126.
2. Ibid., 128.

parasite which affects the health and vitality, is explained to school children, and the need for stool specimens pointed out, the next campaign should be more successful than the one attempted in 1933.

"Education is one of the most important factors in eradicating hookworm disease, for the reason that its final control depends upon improvement in sanitary habits of the people, especially in the rural districts. To change the daily habits of half a nation is an uplift that requires time and patience. It is perhaps best to begin with the school children; even then it will take a generation for results. Very little can be accomplished by force, and, if the customs and prejudices of the people are ignored, the reformer and benefactor meet with rebuff and failure."¹

The collateral benefits of a program of hookworm education and control are as valuable as the reduction of the incidence of hookworm. Its suppression also diminishes tuberculosis, typhoid fever, dysentery, and other intestinal parasites and diseases. Marked improvement should be evident in personal hygiene and the sanitation of the community.

There were 313 cases of influenza reported in 1934 and three cases in 1933 with no deaths either year.

INFLUENZA Influenza is a highly communicable disease which is characterized by great epidemics, which are among the most serious affecting mankind because

1. Rosenau, Preventive Medicine and Hygiene, 154.

of the large numbers attacked in a short time. The mortality is high because of the great number of cases although death is nearly always due to some complication, often pneumonia. Influenza is particularly fatal in a virgin population. The first known epidemic of this disease in Samoa was in 1830, coincident with the arrival of John Williams and his missionaries. Records mention other unusually fatal attacks in 1837, 1846 and 1901.

Hygiene and sanitation have no effect in controlling influenza.¹ Rigid quarantine is the only known way of keeping this disease out of a community and it can be entirely effective on an isolation island group like Samoa.

The law requires that the officer in command of any vessel entering American Samoa shall present a bill of health listing all passengers. The health officer of American Samoa shall inspect the vessel, passengers, and crew and shall grant or refuse pratique.²

"During the year 1934 ninety-one ships, including the regular calls of the Matson Line, cruise ships, visiting yachts, visiting men-of-war and schooners in the inter-island trade, called at this port. It has been customary to maintain a most rigid quarantine. In cases where diagnosis was in the slightest doubt these individuals have not been allowed to land.

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1. Rosenau, Preventive Medicine and Hygiene, 242.
 2. Codification of the Regulations and Orders for the Government of American Samoa. Section 84. Preservation of Public Health. Subsection 3. Quarantine, 68.

"It is worthy of note that all ships' medical officers have keenly cooperated in assisting to exclude communicable diseases from this island. They have been most helpful, as rigid quarantine in ports south of us is equally as rigid as here, and some ship's medical officers have intimated that the quarantine officials are less tolerant of delay than is the case locally.

"It is particularly important that rigid maritime quarantine practice continue, due to the fact that several communicable diseases have their period of incubation within the time limit of sailing from ports of call to Pago Pago--this in particular reference to Suva. Health officials from New Zealand, Fiji, Australia, and Western Samoa have expressed their appreciation of the work done in this port."¹

Towards the end of the year 1918 Western Samoa was visited by the world-wide epidemic of pneumonic influenza, "from which more than a fifth of the native population died."² American Samoa, sixty miles away, escaped this epidemic entirely due to the maintenance of a strict quarantine which was lacking in Western Samoa.

Such examples of the benefits of strict quarantine and isolation can be applied, in a health education program, to local situations. Where ever there are communicable diseases the same quarantine should be exercised between villages, and between homes within a village.

In 1934 there were 271 cases of impetigo contagiosa reported, which is a decrease of 189 under the figure for

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1. Public Health Report, Dec. 31, 1934, 97.
 2. Rowe, Samoa Under the Sailing Gods, 92.

the preceding year.¹

This skin eruption should be considered in the health education program along with other skin diseases. The pupils and teachers should learn to recognize impetigo

IMPETIGO by the pustules which usually occur on the face, neck, and hands. The disease is contagious and may spread over the patient by scratching. It may be contracted by contact or by the use of common towels or garments. Pupils should not be allowed to attend school with open sores. Personal cleanliness and isolation should be stressed in discussing impetigo in the health education program.

There were thirty-two fatalities in the sixty-nine cases of pneumonia reported during 1934. In 1933 there were thirty-four fatalities in forty-eight cases.²

Pneumonia caused more deaths than any other disease in 1934. (Appendix, Table III)

Health education should familiarize the pupils of Samoa with the nature of pneumonia with the aim of reducing

PNEUMONIA the number of deaths from the disease as well as the number of cases. While pneumonia is not regarded as a highly contagious disease it is spread directly from man to man. The germs or pneumococci are

1. Public Health Report, Dec. 31, 1934, 68.

2. Ibid., 69.

spread by secretions from the respiratory tract, often times by carriers. The disease is particularly virulent when it attacks racial groups such as the Samoan in which the disease has not been long prevalent.

Pneumonia may attack the strong and robust but the usual victims are those whose vitality or resistance has been lowered. Health education can probably accomplish its best results in combating pneumonia by teaching the people to build up a resistance to the disease.

"It should be common knowledge that anything which tends to reduce vitality predisposes to pneumonia, such as dissipation, loss of sleep, overwork, worry, poor or insufficient food, lack of exercise, alcohol, colds, or excesses of all kinds."¹

Such factors may be considered in the health education program for pupils as : the proper food for vital health, clothing adapted to the weather and climate, care of the common cold, avoidance of crowded or poorly ventilated sleeping quarters, and such discussions as will give an understanding of maintaining a resistance to pneumonia.

The reported cases of ring worm in 1934 totaled 1270,
an increase of ten over the preceding year.²
RING WORM

Ring worm is a communicable skin infection

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1. Rosenau, Preventive Medicine and Hygiene, 240.
 2. Public Health Report, Dec. 31, 1934, 68.

which yields to medical treatment and may be controlled by a campaign emphasizing personal cleanliness. Health education may teach the pupils to use their own combs and towels and to avoid contact with persons infected with ring worm.

There were 301 cases of scabies reported for the year 1934 and 197 cases in 1933.¹

The itchmite causing scabies is usually contracted by direct contact. Sulphur ointment is usually efficacious

in ridding an infected individual of scabies.

SCABIES

This communicable skin infection may be considered in the health education program with ring worm and impetigo.

A total of 4233 cases were listed as skin infection in 1934, and increase of 1565 over the previous year.²

The discussion of the probable causes of the various types of skin infection would be a valuable project in a health education program. It is logical to suppose that something can be done to reduce this large number of skin infections. The pupils could approach the problem by studying such factors as: body cleanliness; the use of strong soap; a decrease in the use of coconut oil as a skin ointment; the transmission of

SKIN INFECTION

1. Public Health Report, Dec. 31, 1934, 69.

2. Ibid., 69.

and went to Samoa where he was assured the climate would be more healthful.

"The climate of these islands, situated in the trade winds, that invigorated me so much on the voyage, is said to be salubrious in a wonderful degree; several missionaries now there and well, went in a state almost hopeless, and I hear there is not an instance of consumptive subject having gone there without being restored. The numbers who have gone, however, are few."¹

Mr. Lundie neglected his health in his active missionary endeavors and died September 25, **TUBERCULOSIS** 1841. Many of his associates contracted tuberculosis from him and the disease ran a rapid and fatal course among the native Samoans.

The high death rate among the Polynesians is explained by the fact that they have no natural immunity or resistance to the tubercle bacillus while peoples of Europe and North America have reached an immunological adjustment in the course of centuries.

"The law of nature which determines the survival of the fittest is inexorable and in every generation the tendency is for the individuals who happen to be exposed to infection, to die unless they come of stock which has more or less successfully coped with tuberculosis for many previous generations. With the passing generations, little by little, families in which there is a lack of ability to develop immunity to the tubercle bacilli which have invaded their tissues, die off without reproducing, so that in the course of centuries the propagating stock becomes relatively fit, from the immunological standpoint.

1. Lundie, Missionary Life in Samoa, 55.

"The Samoans have not yet reached this point, and that, no doubt, is one of the reasons why we apparently have a greater proportion of acute rapidly fatal cases among Samoans than among Europeans and Americans." ¹

Dr. S. M. Lambert of the Rockefeller Foundation, in his capacity as Deputy Central Medical Authority, Western Pacific High Commission regards tuberculosis as the immediate cause of more deaths than any other disease in the Pacific.

There is no truly native name for tuberculosis in the islands of the Pacific which is additional proof that it is an introduced disease. The Samoans, however, call it mama pala meaning "rotting of the lungs," which name distinguishes the disease in its later stages.

Two customs in Samoa tend to spread tuberculosis, the habit of spitting, and the kava ceremony. The floor of the Samoan house is covered with small smooth stones and over these are placed a number of laufala mats each approximately two feet wide and seven feet long. The occupants sit on these mats and frequently lift the corner and spit on the gravel beneath. Children crawl over the mats, stones, and the whole family eats and sleeps on the mats which often harbor living tuberculosis germs.

1. Public Health Report, 1929, 33.

The other custom under consideration by health authorities is the kava ceremony, also discussed in this study under social customs.

The kava root is now prepared by grinding between stones, and not masticated and spit into a common bowl as was formerly done. A single coconut shell serves as the kava cup which is filled and served to each person in the kava circle. This custom must have a tremendous influence on the spread of tuberculosis.

In an attempt to correct this condition, health authorities¹ have suggested that each person provide his own kava cup. This suggestion is based on the belief that it was customary in former years for each person to provide his own cup. This custom does not prevail now and its revival might be difficult. But the results obtained should be worth even the probably difficult task of altering the conventional pattern of the ceremony to insure this health protection to those in the kava circle.

Most of the Samoan food is eaten with fingers from trays made of plaited coconut leaves covered each meal with fresh banana leaves. Therefore there is no real problem of the transfer of tuberculosis bacilli by dishes and silverware except among the few who have taken up

1. Public Health Report, June 30, 1934, 121.

European ways.

Samoa has an abundance of sunshine and people live out-of-doors throughout the year, conditions which should build up a resistance to tuberculosis or aid in combating the disease by those who have acquired it. But the health officers report a strange aversion to sunshine.

"Samoans as a rule avoid direct exposure to sun-light as much as possible. Whenever they are not feeling well they stay in the fales which are comparatively dark inside. Just what the basis of the rather general fear of sunshine is among the Samoans, by tradition or otherwise, is not altogether clear. Numbers of Samoans employed constantly in road work by the Department of Public Works, are forced to keep in the sun-light without covering for several hours daily. They seem to suffer no ill effects. White Americans play golf and other games in the open sunshine for hours daily with improvement in their physical condition. The rays of the sun do not seem to burn as quickly or as extensively as at Atlantic City, New Jersey. Individuals who have a certain amount of tan as a result of daily exposure to the sun on the island of Tutuila not infrequently develop an erythematous sunburn as a result of a few hours trip over water on board the station ship, going to and from one of the other islands. White people lose their tan quickly in American Samoa if for any reason they have to remain indoors for a few days. Not infrequently, white persons have to be advised to get out of doors because they are not getting enough sunshine here.

"Whatever the foundation of the Samoan fear of sunshine, it is perfectly clear that most Samoans who have tuberculosis do not get enough sunshine. In this connection, Lambert's views are of interest. He says, 'In the light of recent discovery of the medical value of sun-light in tuberculosis conditions, the question arises in my mind if the greatest aid in resisting tuberculosis by the natives has not been largely

removed by the forcing of clothes upon him. If I had my way I would strip every Pacific Islander down to a scanty covering and keep the bodies of all of them exposed to the healing rays of the sun until they acquired some resistance to tuberculosis. Possibly clothing is the worst curse of Western civilization to them."¹

In 1934 there were 74 cases of tuberculosis reported and 25 deaths recorded giving an annual death rate of 2.306 per 1000 population.² In 1933 there were 28 cases reported and 36 deaths from tuberculosis with a yearly death rate of 2.675 per 1000 population.³

During 1934 a survey was made to determine the prevalence of tuberculosis in American Samoa. This survey was financially possible as the tuberculin for the tests was furnished by Doctor Florence B. Seibert, of the Henry Phipps Institute. A total of 4675 examinations were made covering all of the health districts.

"The total positive for this group was 41.3 per cent. Of this number 2305 males were examined and 2370 females. All age groups are included. Total male positive is 40 per cent. Total female positive 42.5 per cent."⁴

There is a great need for a broader dissemination of knowledge concerning tuberculosis. The figures quoted above show that for 1933 the number of deaths exceeded the number

1. Public Health Report, 1929, 36.
2. Public Health Report, Dec. 31, 1934, 80.
3. Public Health Report, 1933, 124.
4. Public Health Report, Dec. 31, 1934, 79. See Table VII in the Appendix for complete figures for this survey.

of cases reported. The disease is not recognized by the Samoans until it reaches advanced stages when cure is difficult or impossible, and at which stages the patients are dangerous sources of infection to their families.

"A successful campaign against this disease cannot be financed by the Island Government at this time. Unless some philanthropic organization can be encouraged to lend assistance, the only other method of meeting this problem is to organize a Samoan anti-tuberculosis society. ...It is believed that this society could be organized and the members in the various villages encouraged to make contributions for the purpose of purchasing food products to augment the native ration which of course they will provide."¹

The 1934 health report shows that there are at least 74 persons suffering from tuberculosis in stages advanced enough to make them definite sources of infection to their families and friends. If these were isolated in a hospital there would be a reduction in the incidence of new cases as there would be fewer exposures. There is not room in the present Samoan hospital for these cases. Nor could the Island Government pay for the additional food which they would need, amounting to about forty cents a day or about \$9,000. a year.² The Samoans who have taken advantage of the Samoan Hospital tuberculosis ward

1. Public Health Report, Dec. 31, 1934, 80-81.
2. Ibid., 80.

have made marked improvement or complete recoveries. The tendency has been, however, for some of the patients to return to strenuous work before the disease was arrested and death resulted.

The final control of tuberculosis will probably be reached through health education. When a disease cannot be conquered by immunization, and only partially controlled by employing sanitary measures, the solution must be reached by educating the people in the proper methods of protecting themselves from the diseases. The public health officials have stressed the need of giving the Samoan people an understanding of tuberculosis.

"First, the Samoans must learn and be made to realize the cause and mode of dissemination and then be impressed with the fact that the disease may be controlled and its spread stopped by suitable treatment and isolation. This will take years. There is now available a small ward in the Samoan hospital for tuberculosis patients. It is practically impossible to prevail upon them to come to the hospital, especially in the incipient stage. An occasional case in the advanced stage will enter for a short time. As he is not well in a week, he will stay no longer. Funds are not available for supplying diets for the patients. Aigas (relatives) bring all their food. Many who do not understand the etiology, course and treatment of the disease do not wish to impress such hardships on their family and friends and will not stay until an arrest has been effected. Some advanced cases have died in the hospital, so some think--'Why go to the hospital to die,' as they would prefer to die in their own fales."¹

1. C. R. Riney, Public Health Officer, Naval Station, Pago Pago, Correspondence, February 6, 1936.

A number of topics might be taken up with reference to tuberculosis in Teachers Institute to be discussed by the teachers and then carried back to the schools. Among these would be: The Proper Clothing for Health in Samoa; Nourishing Food and Sufficient Rest in Combating Tuberculosis; Avoiding Infection in Tuberculosis; The Habit of Spitting and the Spread of Tuberculosis; The Isolation and Treatment of Tuberculosis Patients; Reporting Tuberculosis Suspects to the Health Officer; The Danger of the Common Kava Cup.

In 1934 there were nine cases of typhoid fever reported for American Samoa with two fatalities. In 1933 there were five cases with no deaths.¹

It is not known when typhoid was introduced into Samoa but it has been reported for many years. It has been endemic since 1928, with the lowest number of cases in 1932 when two were reported. Typhoid ranks high on the list of communicable diseases that can be controlled by

health education and the application of these
TYPHOID principles to home and community life. The control of typhoid fever is one of the notable achievements in preventive medicine. The cause, modes of transmission, likelihood of carriers, and prevention, are well understood in theory and readily attainable in practice.

1. Public Health Report, Dec. 31, 1934, 70.

A health education unit covering this disease may emphasize sanitation; may give useful lessons in hygiene; and may present, according to the age of the pupil, an interesting example of immunology.

A health education unit for the school year or years in which typhoid prevention is to be presented may be worked out by the members of the department of education with the cooperation of the department of public health, specifically to meet the needs of conditions in Samoa. Children in the lower years may be taught enough about the disease to make it clear to them how they may avoid it.

In the upper school years the pupils should become familiar with the nature of typhoid and learn the reasons for the preventive measures taught them. The facts concerning this disease are as interesting as they are important and can form the basis for school work in reading, written or oral expression, science, and even mathematics and geography. The following topics may be used as separate assignments, or to form a connected story of typhoid fever: The Typhoid Bacillus; Transmission of the Typhoid Bacillus; Symptoms and Diagnosis of the Disease; Typhoid as a Water Borne Disease; Typhoid Germs in Milk and Milk Products; Typhoid in Sea foods (such as are taken daily from Pago Pago harbor); Flies as Typhoid Carriers; Typhoid Control and the Sewage Problem; Preventive Typhoid

Inoculations; and Sanitary Precautions in Typhoid Control.

These topics suggest but a few of the possibilities that may be used to present the information concerning this disease to school children. This information in its local applications is well known to the members of the department of public health. This could be taught to the teachers during the Teachers Institute, and in this way carried to all the school children in Samoa.

The study of typhoid is important in health education, because it illustrates so many general principles in the prevention and control of a bacterial disease. Although the fatalities are not as numerous as in some other diseases there are reasons to believe that an epidemic might break out at any time unless precautionary measures are taken. The Samoan people have been less concerned about the seriousness of disease which have no external bodily manifestations than they have been concerning such diseases as elephantiasis which enlargements limit their physical activities as well as causing them pain. For this reason it has been easier to get the people to use mosquito nets against the carriers of filariasis and its accompanying elephantiasis than to get them to combat typhoid, tuberculosis or some of the "unseen" diseases.

The subject of typhoid control logically begins with the sewage problem. The Samoan has apparently seen no

real reason for instituting a satisfactory method of sewage disposal.

"When the campaign against hookworm started in 1909, there was not a single latrine in the islands. Three months later the sanitary inspector reported that every village had built latrines according to the health regulations. But they were too frail to withstand wind and sea, and were gradually destroyed. In 1922 every village was again reported as equipped with latrines."¹

When the village was located on a protected bay the type of latrine constructed was of lumber and raised on poles over the water several yards from the shore. A plank walk lead from the beach to the latrine. In the inland villages, and where the villages were located on the open sea, types of pit latrines were constructed.

A study of typhoid and other intestinal diseases by the school children offers the hope of pointing out the real necessity for developing a satisfactory system of sewage disposal in all the villages.

"With the exception of a recently completed septic tank for the Feleti School development, there is no sanitary disposal of sewage in American Samoa. Whenever the urge to evacuate occurs, immediate steps are taken to accomplish this function. Little regard for cleanliness is in evidence. One may find human excreta in any native village, and unfortunately too close to the houses for safety."²

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1. American Samoa, A General Report, 72-73.
 2. Public Health Report, Dec. 31, 1934, 91.

The health authorities instituted the "beach paddle" method of disposal of human excreta where the defecata was paddled into the sea immediately after defecation. Reports of the sanitary inspectors show that this method is moderately effective when they are particularly active in their enforcement measures. But, in this case, it is the health officials and not the people of Samoa who desire that the villages and beaches be free from human wastes.

The young people of Samoa must bear the responsibility of changing their life habits to fit themselves to the demands of new health factors. The older people do not readily accept changes in their culture pattern. However when foreign diseases have begun to make inroads on the health of a native people, these diseases can be conquered best by the foreign treatments that have proved successful elsewhere. The public health officer says in his 1934 report that the most intelligent members in each of the villages which he visits frequently discuss the need of proper sewage disposal and the urgent needs for a supply of potable water. The Samoans ask questions about living conditions in other countries and are aware of their deficiency along the line of sanitation.

Numerous other attempts have been made to solve Samoa's sewage problem. The public works officer and the public health officer developed a plan for a community

toilet constructed entirely of native material, with the exception of the cement needed for the construction of the septic tanks.¹ Responsible Samoan people have become interested in this project and have suggested that it be tried out.

Other Pacific Islands have solved their sewage disposal problem with a "bored hole" type of privy. The public health officer for American Samoa says of this type:

"It is likely that this will be found an expensive method of disposal, because of the probability of striking large stones before the holes have been sunk to the desired depth. If this method is employed it is obvious that it is only a matter of a short time until these privies will be filled and additional borings will be necessary."²

The health authorities feel that the pit type of privy would be unsatisfactory as the lumber for the buildings would be expensive, and would last but a short while due to termites and storms.

"Several people have visited the Feleti School and without exception they are enthusiastic over the septic tank method of disposal and are keenly aware of the fact that in the long run this would be far the most desirable and least expensive method of disposal for the community."³

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1. Public Health Report, Dec. 31, 1934, 93.
 2. Ibid., 93.
 3. Ibid., 93.

The law provides that every village shall be provided with latrines constructed from plans approved by the department of public health. Each matai is held responsible for the sanitary conditions within his family group, and a failure to comply will bring a fine or imprisonment.¹ Health education should aid in solving one of Samoa's vital sanitary problems which the law has failed to correct.

Yaws is a communicable infection caused by the organism Treponema pertenuis, which causes lesions or skin eruptions on the body, more frequently on children and young people. Yaws may be conveyed by direct contact, especially where there is a skin abrasion, or it may be borne by flies.

The Samoan name now used for yaws is tona and the disease is mentioned in the earliest records of YAWS American Samoa. It occurs in tropical countries the world over and is common in the Pacific Islands.

*Wilkes in 1839 describes an eruptive complaint called ilamea, which covers many of the children under the age of ten years and particularly attacks the face and head. ...Kraemer believes that the disease has long been endemic in Samoa, because the oldest word that the Samoans

1. Codification of the Regulations and Orders for the Government of American Samoa, Section 84. Preservation of Public Health. Subsection 1. Disposal of Human Excreta. 66-67.

have for the disease is patu, which is the word used in the Sunday Islands for yaws. This would indicate that the Samoans acquired the disease when they were in contact with this race, probably before the time of their migration to the Samoan Islands."¹

Little information is available on the treatment of yaws in American Samoa prior to 1927. In that year 1175 doses of neosalvarsan were given by the department of public health in treating the disease. The treatments continued each year and in 1933 a total of 14,146 doses were administered.²

Traveling clinics were organized in May, 1933, and sent from village to village administering treatments for yaws. During 1934 a total of 11,336 doses of neosalvarsan were given. The results of this extensive field work is shown by the public health officer's report:

"When the writer first arrived in American Samoa (May, 1933), it was difficult to refrain from concluding that almost every child seen was suffering from yaws. It is relatively rare now to see a child in any village with the large filthy lesions so common in 1933."³

Several years ago it was reported that two deaths resulted from the neosalvarsan treatment. The health records show that this was a false report yet the news

1. Armstrong, "The Treatment of Yaws in Western Samoa." Samoan Annual Medical Report, 1925, 1.
2. Public Health Report, Dec. 31, 1934, 104.
3. Ibid., 104.

spread rapidly and the health officer's work is still considerably handicapped by the native fears of the yaws treatment. Such fears can be eliminated in the health education program where facts, not idle gossip, form the basis for discussion. It may be pointed out to the school children that over 25,000 doses of neosalvarsan were given in 1933-1934 without a single fatality. The benefits from such treatments should already be common knowledge to the children.

There is also a belief that cases of paralysis have resulted from the administration of neosalvarsan. It has since been shown that the paralysis resulted from infantile paralysis and not the yaws treatment.

"Several prominent physicians, who are authorities on poliomyelitis have examined with the writer some of these cases of paralysis, and they concur in the opinion that they are residual of poliomyelitis. Since there was a small epidemic of infantile paralysis (poliomyelitis) present in 1932, there is every reason to believe that it was more extensive than was at first believed."¹

The health officials have reported that these false fears of the yaws treatment have caused parents to send their children into the "bush" on the days that the traveling clinics were to be in the village. Since the

1. Public Health Report, Dec. 31, 1934, 103.

law has not been able to control this practice it is logical to turn to health education and create in every Samoan child the desire for a clean healthful body, free from the filthy lesions of yaws.

The law requires all residents of American Samoa suffering from yaws to submit to treatment when directed by the department of public health and to no other treatment than that prescribed by this department. The practice of deliberately exposing a child to infection by yaws is forbidden. There is an old belief that the child develops an immunity to yaws so should be exposed to the disease early in life. Violators of the provisions of the law concerning yaws are subject to a heavy fine or imprisonment.¹ There have been many ways of evading the law for it was, to the Samoan mind, a foreign intervention on a condition long known to them. Such a law is doubtlessly necessary to put the yaws treatment and control into immediate effect. But the disease will be completely controlled only when the Samoans request neosalvarsan to rid them of the yaws and not as a submission to a treatment required by law.

Another factor in favor of the modern neosalvarsan treatment is that it is less severe than the Samoan

1. Codification of the Regulations and Orders for the Government of American Samoa. 1931. Section B4-- Preservation of Public Health. Subsection 7. Yaw (Tonas). 69.

attempts to cure yaws.

"One of the commonest methods is to scrape the yaws lesions with fibre of coconut husks until they bleed freely, then they are dressed with a mixture from fungus growths occurring on both coconut and breadfruit trees. These fungus growths are macerated in water, allowed to stand for a period of time in the leaves of the kava plant, and then applied to the open sores. Another method is to scrape the yaws lesions with a sharp clam shell until they bleed freely and then the sores are covered with lime made by burning various sea shells. This is an extremely painful method and the child who has had crab yaws treated by this painful method is a strong believer in the efficacy of the tui (shots of neosalvarsan)."¹

The treatment given for yaws by the department of public health at this time is the neosalvarsan which is proving effective. Other treatments using arsenic, mercury, bismuth, and the iodides are being considered. Misinformation was given out from some source that two doses of neosalvarsan were sufficient to cure yaws.

"Our experience indicates that the average patient will require six treatments before the open lesions are well."² The health officers have had to expend much effort in getting the patient to continue treatment until the lesions have healed.

"Rigid quarantine has been maintained against the introduction of yaws from other

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1. Public Health Report, June 30, 1934, 24-25.
 2. Public Health Report, Dec. 31, 1934, 103.

dependencies. When cases have arrived in port they have been promptly placed in the Samoan Hospital, and retained until they no longer have open lesions."¹

People suffering from yaws are denied passage between the islands in American Samoa on the station ship until their open lesions have been cured.

Yaws is not a venereal disease, but it closely resembles syphilis as the parasitic organisms causing each disease are closely related. Diagnosis of yaws is made by clinical symptoms and by the Kahn tests on blood specimens. In 1933 a study was made to determine the Kahn reaction in 1607 school children. Table VIII in the Appendix shows the per cent positive for the various age groups before and after the anti-yaws treatment.

In addition to the communicable diseases just discussed which are a serious menace to the life and health of the Samoan people a number of other diseases were represented by a few cases. In the so-called children's diseases there were three cases of chicken pox and one case of mumps. Eight cases of tonsillitis were reported as acute but not fatal. The one case of meningitis in 1934 resulted in a fatality. Under the heading of venereal diseases thirteen cases of gonorrhoea were reported but no syphilis. Doctors

1. Public Health Report, Dec. 31, 1934, 104.

disagree on the relationship between yaws and syphilis, but the general statement is usually made that the Samoans have acquired an immunity to syphilis through the similar organism which causes yaws. There are four lepers isolated in the Samoan Hospital and one maintained by the Samoan government in the leper colony at Makogai, Fiji. No new cases of leprosy have been reported for several years.

The Samoan Teachers Institute offers splendid possibilities for introducing a health education program which will eventually reach all of the people of Samoa. The native teachers meet at Poyer School during their vacation and attend this training school which has been conducted, since 1932, by educators sent from Hawaii. In addition to the instruction in teaching methods the Samoan teachers are given a great deal of factual material which they give back to their pupils during the following school year. The teacher has considerable contact and conversation with the adults in the village, and as he matures he may hold political positions of importance. The influence of the teacher in Samoa is probably greater than in an average American community. The Samoan teacher and the native pastor are often the only persons in the village who have had schooling above the first few grades.

A course in personal hygiene and principles of public health was given at the Teachers Institute during the

summer of 1935 by Mr. Theodore Rhea, director of health education for the department of public instruction for the Territory of Hawaii. The four main topics presented were (1) What is Health? (2) Health Education and its Effect upon Personal, Home and Community Health. (3) The History of Hygiene, Public Health and Medicine. (4) Communicable Disease Control.

The superintendent of education said, "Our difficulties are due to the fact that the teachers themselves must be taught something of the subject and to practice it before it will be an active daily affair. ...Health education should be stressed in all institutes if possible."¹

Since the advent of fast steamship service to Samoa, and the installation of a refrigeration plant making ice available in the "Bay region," it may be said that the food of the world is available to many of the people. A study of the food habits show that the Samoans are not likely to choose the introduced foods wisely unless they are instructed to do so. This does not mean that a mere mentioning of the proper foods is sufficient. Personal tastes and economy often cause individuals to ignore advice given casually. Foods should be studied carefully and definite reasons

CHANGES IN
FOOD HABITS

1. E. L. McTaggart, Superintendent of Education, American Samoa. Personal correspondence, March 10, 1936.

pointed out for certain choices. Every known educational aid may be used to impress these important facts upon the individual. Animal experiments, using proper and improper diets, give striking real life results. In nearly every community there are individuals who have eaten unwisely and also other young people or adults whose splendid physiques can be traced to their healthful living.

The early visitors to Samoa, as elsewhere in Polynesia, wrote glowingly of the fine statures, splendid physiques and beautiful teeth of the native people. This was attributed to their diet which was suited to their tropical environment, and to their habits of living in close proximity to the sea, sunshine, and fresh air.

Although the Samoans knew nothing of vitamins, calories, or balanced diets their fine physiques proved that the foods which Samoa produced would build healthy bodies.

The white man brought to Samoa a number of new foods. Many of these added a tempting variety to the plain native diet. Some of the foods were easier to obtain from the white man's source than from nature. However, the Samoans, as was true of other Polynesians suffered a physical decline as they accepted the white man's ways and the major cause, aside from actual disease, has been attributed to the change in diet.

Bread, rice, and grain foods were substituted for

taro, yams, breadfruit or bananas. Both groups are starch foods so there seemed to be no apparent danger in this. Canned salmon and corned beef were used in place of fresh fish, other sea foods and pork.

A recent study¹ shows that people living in the tropics cannot substitute the acid starches, such as the grains for the alkaline starches, such as taro, yams, bananas, sweet potatoes, and breadfruit.

Dr. Martha Jones says of the people of Hawaii, "Grain foods were introduced by visitors and during the past 50 years have gradually replaced taro and potato in the diet of the native people. Associated with this change is marked physical deterioration; high infant mortality; high susceptibility to disease of all kinds and teeth ravaged by decay."²

The substitution of grain foods for native foods is most common around the Naval Station in American Samoa but the desire for all sorts of imported foods is becoming common throughout the islands. Samoa can profit by the unfortunate example in Hawaii and prevent this change in diet which will not only benefit Samoa's health but encourage the use of home grown products.

"When doctors, nutrition teachers, cafeteria directors, and social workers and those who have to do with the feeding of others accept the fact that taro and potatoes have a very special value

1. Jones, Report of Dietary Observations carried on at Ewa Plantation.

2. Ibid., 19.

in the diet in the tropics and are not interchangeable with grain foods, much progress will be made."¹

The results of the Board of Health examinations of the children in the schools of Honolulu show that, "There is an average of three bad teeth in every child's mouth."² From the native districts of Samoa the average was less than one cavity for every ten pupils examined.

"...it may be noted that in general Samoan teeth are large, well proportioned and sound, and that dental troubles are due largely to changes from native to foreign diets."³

"In American Samoa, in most villages, barring disasters such as hurricanes, the native is probably quite safe as long as he adheres to Samoan food, providing chickens and pigs are raised in the usual numbers and fish are eaten from time to time. The vegetable foods available all the year round are taro, bananas, coconuts and papaya. Breadfruit is plentiful during two principal breadfruit seasons which last a few weeks each, and limited quantities are available at certain other times. The excellent physical condition of the majority of Samoan adults and children shows that these few articles supplemented frequently with chicken, pig meat and fish constitutes a good maintenance and growth promoting diet. To Americans such a restricted list of foods would be intolerable, and it is not surprising that Samoans are eager to procure tinned salmon, tinned corned beef, white flour and refined sugar when they can. The native diet is rich in carbohydrate. Very little injudicious substitution with imported preserved articles of food can be practiced without bringing about a deficiency of fat soluble vitamin and of calcium. The typical diet, which is almost over

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1. Jones, Report of Dietary Observations, 20.
 2. Lam, "School Health Program," Hawaii Educational Review, Jan. 1936, 136.
 3. Frear, "Report on Health in American Samoa." Studies in American Samoa by a Commission of the Barstow Foundation, 3.

balanced with carbohydrate to begin with, will not stand the addition of white flour, polished rice and refined sugar. Native Samoans do not drink milk and they do not eat eggs as a rule. Their protein intake is no doubt high enough in protein of good growth promoting value whether it be of animal or vegetable source."¹

"It is evident that the Samoan is remarkably free from dental caries if left in native environment and his susceptibility is markedly increased in the presence of altered diet and miscegenation. In the Poyer School there were only 13 children of mixed blood who contributed 8 cavities, so we may disregard this as unimportant as a causitive factor in the relative percentage of dental caries as compared to the "Jungle" schools. There is only one other important factor to be considered, namely: diet. It is a well known fact that the Samoan is fond of the white man's food. If finances permit he will buy large amounts of the staples of civilized diet... many of the pupils of Poyer School (where the percentage of caries was extremely high) are the children of members of the Fita Fita Guard and Naval (enlisted Samoan) personnel. These men receive the same pay as the corresponding ratings in the Navy and Marine Corps. ...This higher economic status enables them to buy large quantities of food, some families using as much as 100 pounds of rice per month."²

In the light of the dietary studies in Hawaii and Samoa the teachers of health education should feel a definite responsibility toward helping the children maintain good health through a proper diet. The use of foreign foods such as the acid starches should be discouraged and the pupils urged to retain their native foods which give an

1. Public Health Report, 1929, 37.

2. Public Health Report, June 30, 1934, 74-75.

alkaline diet. All imported foods need not be banned as undesirable. The benefits of such foods as fresh and canned milk, and fresh and canned fruits and vegetables have been demonstrated beyond a doubt. But the use of the grains, and an excess of prepared sweets are known to be detrimental to people living in the tropics.

The average home conditions in Samoa complicate and even interfere with the school's health education practices. The school occupies a smaller part of the child's time each day than the home, and the influence of Samoa's young men teachers carries less weight than that of the elders at home. Some of the home practices which conflict with good health procedures will be mentioned to provoke thinking toward their solution.

The principle of selecting and preparing wholesome food may be taught at school yet the home diet will very likely consist of cold food eaten at irregular hours. It is true that the economic factor influences the choice of food yet it is faa Samoa (like Samoa) to use the food that can be obtained with a minimum of effort without regard to its food value in balancing the family diet.

The school through its health program suggests a certain minimum as the required number of hours of sleep needed by the pupils of different ages. Conditions are

very lax in this respect in the Samoan home where even the pre-school children often stay up until midnight when there is entertainment in the village or when the moon is full.

The Samoan parents exert unfavorable influence over their children when they criticise or fail to cooperate with the health and medical services offered by the public health department. The use of Samoan medicines, especially those which are in the nature of charm cures, is confusing to the children who are being taught at school the value of scientific over superstitious practices.

Most of the Samoan parents of today have not had the advantage of health education and they violate many of the health practices which are taught at school. Unless the parents are sympathetic with the school health program they may discourage or at least fail to aid the children in carrying out their health practices. In many American communities it has been possible to enlist the cooperation of the parents through such organizations as the Parent-Teachers associations. In order to gain the whole-hearted cooperation between the home and the school it has been necessary in many cases to educate the parents in some of the health principles and in their duties toward helping their children develop proper health habits.

Greater cooperation may be expected in Samoa from the homes where the mother has graduated from the Samoan nurses

training school. So difficult is it for the older people to understand and sympathize with introduced health ideas that the schools may find that they will not receive full cooperation from the home until the present pupils become the parents and leaders in the community.

With the continuation of the effective work of the public health department and the results which can be expected from a program of health education the population of Samoa will continue to increase due to a higher birth rate, a decrease in infant mortality, fewer contagious diseases and a general improvement in personal and public health. The question naturally arises, How many inhabitants to the square mile can American Samoa support? In 1930 there was an average of 132.3 as compared to 106 inhabitants to the square mile in 1920.

"The following is a quotation from a letter which I recently received from Captain G. B. Landenberger, Governor of American Samoa:

"'You ask, "Does the question of surplus population loom ahead? If so, what about it?" The population here has doubled during the last 30 years and there is a prospect of its doubling again in the next 30 years. Considering the amount of cultivated land in American Samoa at present, a food shortage would result, and steps have already been made to take care of the possible food shortage by increasing the size and number of small plantations.'"¹

1. Lambert, The Depopulation of the Pacific Races, 15.

"Several experts in tropical agriculture have boldly stated that the land now in use would easily produce three times its present yield, if properly tilled."¹

In addition to the extension of the lands under cultivation there are a number of possibilities which could be developed to provide for an increasing population in American Samoa.

"The sea abounds in fish, but the Samoan is an inefficient fisherman. The introduction of a small crew of professional deep sea fishermen would probably be a paying venture. They would soon teach the people efficient methods. The surplus fish could be packed or dried for export. Thus the native ration and economic condition would be improved."²

Suitable forage crops could be introduced from other tropical regions, and a good breed of milk cows brought in to establish dairying on a scientific basis. This industry would supply fresh milk and milk products for the Samoan diet, provide occupations, and utilize land that would not be suitable for general agriculture. Many of the Maori of New Zealand have become successful dairy farmers under the direction of English agriculturists.

"The introduction of a herd of goats free from undulant fever would provide a satisfactory and badly needed supply of milk for infant feeding, and food from the goats."³

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1. Public Health Report, June 30, 1934, 168.
 2. Ibid., 169.
 3. Ibid., 168.

Samoa's lack of natural resources limits the possibilities of industrial development or a greater expansion of urban life. The solution to the problem of providing for an increasing population must be found in agricultural activities.

"At present the food supply is ample except when destroyed by hurricanes, but the available area of cultivable land is limited by the smallness of the total area and the mountainous nature of most of that. Hence the importance of improving crops and methods of cultivation to support the larger population, and therefore the importance of agriculture in the educational program. This may prove sufficient for a time but sooner or later birth control, as well as death control, must receive attention."¹

The subject of eugenics and birth control has been given little or no attention by any school or organization in Samoa up to the present time.

1. Frear, "Report on Health in American Samoa," Studies in Samoa by a Commission of The Barstow Foundation, 2.

Conclusion

Public education in American Samoa must seek to develop within the people a consciousness of their problems and an understanding that these problems must be solved by the Samoan people if the solution is to be of lasting value. The schools of American Samoa are confronted with the task of helping the Samoan people build a new social order in which the people themselves must choose what they will retain from their own culture and what they will adopt from others.

In acquainting the pupils with their own problems and the needs of their surroundings the schools must point out that the social and economic progress of American Samoa is impeded by many unhealthy conditions and practices. Education is the only means of developing within a people an awareness of their health requirements and the knowledge and health habits necessary to meet these needs.

The purpose of this study has been to point out the great need of improving the health conditions in American Samoa and to show that a program of health education is the most effective means of developing a consciousness of this problem. No attempt has been made in this study to develop plans, teaching units or to deal with the techniques of presenting a health education program for the schools

of American Samoa. The health activities outlined in the present school program form a satisfactory nucleus for a more intensive program of health education. The public school teachers must be trained in health matters before they can present such a subject effectively to their pupils.

The schools must accept the responsibility of establishing the ideal in American Samoa that positive health, which promotes achievement and secures physical, mental and moral strength is the greatest stimulus toward the economic and social progress of the people.

A program of health education which is founded upon the elements in the Samoan culture which have survival value (strengthened by introduced principles which have been tested for their worth, established to correct the unhealthful practices of the present, and provide for the welfare of a growing people in a changing culture) will develop within the inhabitants habits founded upon sound health knowledge, which will in turn result in greater happiness and progress among the Samoan people.

Uma

A P P E N D I X

TABLE I POPULATION STATISTICS

DISTRICT:	AVERAGE	:	BIRTH RATE:	DEATH RATE :	INFANT MORTALITY
:	POPULATION:	:	PER 1000:	PER 1000 :	RATE PER 1000
:	1934	:	POP. 1934:	POP. 1934 :	POPULATION 1934
EASTERN :	1525	:	46.62	19.01	5.9001
WESTERN :	3072	:	37.75	8.13	1.3346
CENTRAL :	3936	:	50.81	21.08	3.0841
OFU :	967	:	29.91	9.30	0.0000
TAU :	1337	:	36.64	12.71	3.7397
TOTAL :	10837	:	42.80	15.03	2.8605

DISTRICT:	POPULATION:	BIRTHS :	DEATHS :	INCREASE :	POPULATION
:	Jan.1,1934:	:	:	:	Jan.1,1935
EASTERN :	1506	71	29	42	1546
WESTERN :	3027	116	25	91	3118
CENTRAL :	3878	200	83	117	3995
OFU :	958	28	9	19	977
TAU :	1321	49	17	32	1353
TOTAL :	10690	464	163	301	10989

NOTE: In the above tables 4 white American births were not accounted for because naval personnel of the Naval Station does not figure in the population.

(Table I gives the population statistics of the native and civilian population only. Statistics according to the racial groups are given in part in Table II. This table does not explain the high infant mortality for the Eastern district, nor the high death rate in the Central district which includes the Naval Station with its health facilities. Statistics for a single year should not be interpreted as typical in any situation. For instance, if the infant mortality is figured per 1000 living births the rate for 1934 is 66.2. During the influenza years the rate was; 1927-131.7; 1928-107.2; 1929-119. The variation in the next five years is explained by influenza in 1932 and the effective yaws campaign during the next two years. The rates were; 1930-102.0; 1931-80.9; 1932-99.2; 1933-67.0; 1934-66.2)

1. Public Health Report, Dec. 31, 1934, 65.

TABLE II MORTALITY STATISTICS¹

The total number of deaths from all causes during the year 1934 was 164, making the death rate 15.03 per 1000 per annum. This rate is based on a population of 10,840, (average population for the year) which is exclusive of Swain's Island and the U.S. Naval Station personnel. The total number of deaths for the year 1933 was 146, making the crude death rate 13.82 per 1000 for that year.

DEATHS BY RACE

Full blooded Samoans.....	157
½ American-½ Samoan.....	1
½ French-½ Samoan.....	2
½ Hawaiian-½ Samoan.....	1
½ Savage Islander-½ Samoan.....	1
Fijian.....	1
White.....	1

DEATHS BY OCCUPATION

Planters.....	23
Housewife.....	35
xMatai.....	18
Students.....	5
Pastors.....	3
Yard Workmen.....	3
School teacher.....	1
Seaman.....	1
District Judge.....	1
Fita Fita Guard (retired).....	4
Children.....	65
No occupation.....	5

x Matai is spoken of in Samoa as head of family. He is more properly head of a clan, as the family actually includes all descendants from an old family relationship, both by blood and adoption.

GENERAL DEATH RATE BY DISTRICTS:

<u>DISTRICT</u>	<u>: Rate for 1934</u>	<u>: 1933 Rate</u>	<u>: 1932 Rate</u>
Central District :	20.83	: 14.40	: 19.53
Eastern District :	19.01	: 12.93	: 16.35
Western District :	8.13	: 14.03	: 16.56
Tutuila Island :	16.05	: 13.40	: 17.88
Tau District :	12.71	: 14.42	: 10.72
Ofu District :	9.30	: 11.67	: 17.19

1. Public Health Report, Dec. 31, 1934, 49.

TABLE III CAUSES OF DEATH IN AMERICAN SAMOA FOR THE YEAR 1934¹

DISEASE OR INJURY	NUMBER of Deaths	Death Rate per 1000 Population
Pleurisy	1	.09
Pulmonary edema	1	.09
Asthma	4	.36
Tuberculosis, pulmonary	23	2.11
Tuberculosis, miliary	1	.09
Tuberculosis, glands	1	.09
Pneumonia, lobar	15	1.38
Pneumonia, broncho	17	1.56
Septicemia	15	1.38
Wound, gunshot, abdomen	1	.09
Abscess, left groin	1	.09
Wound, punctured, explosion	1	.09
Senility	22	2.02
Undetermined	10	.09
Malnutrition	7	.64
Tetanus	2	.18
Poisoning, food	2	.18
Poisoning, matamalu, suicide	1	.09
Poisoning, Samoan Treatment	3	.27
Meningitis	1	.09
Ascariasis	1	.09
Filariasis	5	.46
Arthritis, acute	1	.09
Premature infant	2	.18
Hemorrhage	5	.46
Dysentery	1	.09
Enteritis-diarrhoea	1	.09
Nephritis, chronic	4	.36
Injury, head and neck	1	.09
Tumor, intra-abdominal	1	.09
Heart disease	3	.27
Carcinoma, pancreas (PO)	1	.09
Cirrhosis liver	1	.09
Intestinal obstruction and Volvulus of stomach	1	.09
Gastric ulcer	1	.09
Gastroenteritis, acute	4	.36
Typhoid fever	2	.18

1. Public Health Report, Dec. 31, 1934, 51.

TABLE IV DEATHS ACCORDING TO SEX AND QUINQUENNIAL AGE GROUPS¹

The following table shows all deaths which occurred in American Samoa during the calendar year 1934, arranged according to sex and quinquennial age groups.

Age groups	:Male	; Female	: Total	: Percent
Neonatal	: 3	: 2	: 5	: 3.04
1 mo. to 2 mo.	: 1	: 2	: 3	: 1.82
2 mo. to 3 mo.	: 0	: 0	: 0	: 0.00
3 mo. to 4 mo.	: 2	: 1	: 3	: 1.82
4 mo. to 5 mo.	: 2	: 2	: 4	: 2.44
5 mo. to 6 mo.	: 0	: 0	: 0	: 0.00
6 mo. to 7 mo.	: 2	: 2	: 4	: 2.44
7 mo. to 8 mo.	: 2	: 0	: 2	: 1.22
8 mo. to 9 mo.	: 4	: 1	: 5	: 3.04
9 mo. to 10 mo.	: 1	: 0	: 1	: 0.61
10 mo. to 11 mo.	: 2	: 2	: 4	: 2.44
11 mo. to 12 mo.	: 0	: 0	: 0	: 0.00
Total under 1 year	: 19	: 12	: 31	: 18.88
1 to 4 years	: 16	: 10	: 26	: 15.83
5 to 9 years	: 3	: 2	: 5	: 3.04
10 to 14 years	: 5	: 2	: 7	: 4.26
15 to 19 years	: 7	: 4	: 11	: 6.70
20 to 24 years	: 4	: 4	: 8	: 4.87
25 to 29 years	: 4	: 4	: 8	: 4.87
30 to 34 years	: 1	: 1	: 2	: 1.22
35 to 39 years	: 6	: 0	: 6	: 3.65
40 to 44 years	: 4	: 3	: 7	: 4.26
45 to 49 years	: 5	: 1	: 6	: 3.65
50 to 54 years	: 3	: 3	: 6	: 3.65
55 to 59 years	: 4	: 3	: 7	: 4.26
60 to 64 years	: 4	: 5	: 9	: 5.48
65 to 69 years	: 7	: 5	: 12	: 7.20
70 to 74 years	: 1	: 4	: 5	: 3.04
75 to 79 years	: 2	: 1	: 3	: 1.82
80 to 84 years	: 2	: 1	: 3	: 1.82
85 to 89 years	: 2	: 0	: 2	: 1.22
TOTAL	99	65	164	100.00

1. Public Health Report, Dec. 31, 1934, 50.

TABLE V RESULT OF NOTIFICATION OF COMMUNICABLE DISEASES¹

DISEASE	Total:Deaths : 1934	Total:Cases : 1934	Case rate:per 1000 :per annum	Fatality:rate per :1000 cases	Cases : per Fatal.	Total : Cases : 1933
Ascariasis	1	2787	261.17	.35	2787.00	2011
Bronchitis, acute	0	1095	101.01	0.00	-- -	1024
Catarrhal Fever	0	3209	296.03	0.00	-- -	1366
Cellulitis	0	9	.83	0.00	-- --	0
Chicken Pox	0	3	.27	0.00	-- -	4
Conjunctivitis	0	1674	154.42	0.00	-- -	1182
Dysentery	1	10	.92	100.00	10.00	3
Filariasis	5	866	76.64	5.77	173.20	260
Gonorrhoea	0	13	1.19	0.00	-- -	11
Impetigo Contag.	0	271	25.00	0.00	-- -	460
Influenza	0	313	28.04	0.00	-- -	3
Meningitis	1	1	.09	1000.00	1.00	3
Mumps	0	1	0.09	- 0.00	-- -	0
Pneumonia	32	69	6.36	463.76	2.15	48
Ringworm	0	1270	117.15	0.00	-- -	1260
Scabies	0	301	27.76	0.00	-- -	197
Skin Infection	0	4233	390.47	0.00	-- -	2668
Tonsillitis	0	8	.73	0.00	-- -	3
Tuberculosis	25	74	6.82	337.83	2.96	28
Typhoid Fever	2	9	.83	222.22	4.5	3
Yaws	0	720	66.32	0.00	-- -	1511

The above table shows the results of notification of communicable diseases which were reported during the calendar year 1934. The case rate is based on an average population of 10,840. It will be noted that the fatality rate is computed per 1000 cases instead of per 100 cases, obviously the fatality rate is not a percentage figure.

1. Public Health Report, Dec. 31, 1934, 71.

TABLE VI INTESTINAL PARASITES¹

The total number of stools examined-537

STOOLS SHOWING OVA OF SINGLE INFESTATIONS

<u>PARASITE</u>	<u>No. POSITIVE</u>	<u>% POSITIVE</u>
Ascaris	193	35.9
Whipworm	69	12.8
Hookworm	9	1.6
Pinworm	1	0.18
Strongyloides	1	0.18

STOOLS SHOWING OVA OF TWO OR MORE INFESTATIONS

<u>PARASITES</u>	<u>No. POSITIVE</u>	<u>% POSITIVE</u>
Ascaris and Whipworm	116	21.0
Ascaris and Hookworm	24	4.4
Ascaris and Pinworm	1	0.18
Ascaris and Flukes	1	0.18
Ascaris and Strongyloides	1	0.18
Whipworm and Flukes	1	0.18
Whipworm and Pinworm	1	0.18
Hookworm and Pinworm	2	0.37
Hookworm and Whipworm	14	2.6
Hookworm and Strongyloides	1	0.18
Ascaris, Hookworm and Whipworm	20	3.7
Ascaris, Whipworm, and Pinworm	1	0.18
Ascaris, Hookworm & Strongyloides	1	0.18
Hookworm, Whipworm, and Flukes	1	0.18
Ascaris, Hookworm, Whipworm and Flukes	1	0.18

Total Number Positive	459	85.47
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1. Public Health Report, June 30, 1934, 128.

TABLE VII RESULTS OF THE TUBERCULIN TESTS (Using Purified Protein Derivative) IN 4675 EXAMINATIONS IN ALL DISTRICTS OF AMERICAN SAMOA₁

District	Positive	Negative	Total	%Pos.
Central District	542	1060	1602	33.83
Western District	727	651	1378	52.70
Tau District	502	379	881	65.70
Ofu District	161	653	814	18.20
Tutuila	1269	1711	2980	42.50
Manua Group	663	1032	1695	39.10
Total of All Groups	1932	2743	4675	41.30
Total Males	924	1381	2305	40.00
Total Females	1008	1362	2370	42.50

The total positive for this group was 41.3%. Of this number 2305 males were examined and 2370 females. All age groups are included. Total male positive is 40%. Total female positive 42.5%. It will be noted that there were more females than males examined. It is unfortunate that the Samoans are early risers and go to their places of work before the traveling clinics ordinarily arrived. An effort was made to induce more of the younger people to accept examinations, but this was not productive of results.

1. Public Health Report, Dec. 31, 1934, 79.

TABLE VIII KAHN TESTS OF SAMOAN CHILDREN¹

In 1935 exhaustive study was undertaken to determine the Kahn reaction in 1607 school children. The following tabulation shows an alarming picture.

AGE	NUMBER TESTED	NUMBER POSITIVE	PERCENT POSITIVE	PERCENTAGE OF POSITIVES			
				1 PLUS	2 PLUS	3 PLUS	4 PLUS
5	32	19	59.38	15.79	31.58	5.26	47.37
6	88	43	48.86	32.56	16.28	6.97	44.19
7	134	68	50.76	36.77	14.71	14.71	33.81
8	158	77	48.73	49.75	12.99	6.49	30.77
9	176	92	52.28	40.22	25.00	9.78	25.00
10	173	85	49.13	44.71	15.29	15.29	24.71
11	105	44	41.91	29.55	20.45	6.82	43.18
12	171	73	42.69	28.37	20.55	12.33	38.35
13	153	79	51.64	29.11	15.19	18.99	36.71
14	173	74	51.75	28.37	14.86	21.87	35.50
15	101	34	33.67	35.28	26.46	8.82	29.44
16	73	27	36.99	40.70	11.10	3.70	44.50
17	35	14	40.00	42.80	28.56	14.28	14.28
18	34	16	47.06	25.00	12.50	31.25	31.25
19	18	9	50.00	44.45	22.22	0.00	33.33
20	13	3	23.08	00.00	00.00	33.33	66.67
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TOTALS	1607	757	47.11	35.67	17.98	12.55	33.80

KAHN TESTS OF CHILDREN AFTER ANTI-YAWS TREATMENT

NO. OF INJECTS	NUMBER TESTED	NUMBER POS.	%	PERCENTAGE OF POSITIVES			
				1 PLUS	2 PLUS	3 PLUS	4 PLUS
1:	49	34	69.80	17.64	14.70	41.20	26.46
2:	70	43	61.43	46.59	18.56	6.97	27.88
3:	129	70	54.27	48.57	22.86	7.14	21.43
4:	132	71	53.79	30.98	14.08	11.27	43.67
5:	66	46	69.70	43.48	17.39	13.04	26.09
6:	82	47	57.32	42.55	4.25	8.51	45.60
7:	18	14	77.78	14.29	28.57	28.57	28.57
8:	24	12	50.00	25.00	0.00	25.00	50.00
9:	10	8	80.00	37.50	12.50	12.50	37.50
10:	49	26	53.06	23.08	23.08	7.69	46.15
11:	4	1	25.00	0.00	100.00	0.00	0.00
12:	8	4	50.00	0.00	25.00	25.00	50.00
13:	4	3	75.00	66.67	0.00	0.00	33.33
Over 13:	32	22	68.75	27.27	22.73	22.73	36.36
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Totals	677	401	59.24	35.91	16.71	13.46	33.92

1. Public Health Report, Dec. 31, 1934, 106.

TABLE VIII KAHN TESTS OF SAMOAN CHILDREN¹

In 1933 exhaustive study was undertaken to determine the Kahn reaction in 1607 school children. The following tabulation shows an alarming picture.

AGE	NUMBER TESTED	NUMBER POSITIVE	PERCENT POSITIVE	PERCENTAGE OF POSITIVES			
				1 PLUS	2 PLUS	3 PLUS	4 PLUS
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6	88	43	48.86	32.56	16.28	6.97	44.19
7	134	68	50.76	36.77	14.71	14.71	33.81
8	158	77	48.73	49.75	12.99	6.49	30.77
9	176	92	52.28	40.22	25.00	9.78	25.00
10	173	85	49.13	44.71	15.29	15.29	24.71
11	105	44	41.91	29.55	20.45	6.82	43.18
12	171	73	42.69	28.37	20.55	12.33	38.35
13	153	79	51.64	29.11	15.19	18.99	36.71
14	173	74	51.75	28.37	14.86	21.87	35.50
15	101	34	33.67	35.28	26.46	8.82	29.44
16	73	27	36.99	40.70	11.10	3.70	44.50
17	35	14	40.00	42.80	28.56	14.28	14.28
18	34	16	47.06	25.00	12.50	31.25	31.25
19	18	9	50.00	44.45	22.22	0.00	33.33
20	13	3	23.08	00.00	00.00	33.33	66.67
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TOTALS	1607	757	47.11	35.67	17.98	12.55	33.80

KAHN TESTS OF CHILDREN AFTER ANTI-YAWS TREATMENT

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12:	8	4	50.00	0.00	25.00	25.00	50.00
13:	4	3	75.00	66.67	0.00	0.00	33.33
Over 13:	32	22	68.75	27.27	22.73	22.73	36.36
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Totals	677	401	59.24	35.91	16.71	13.46	33.92

1. Public Health Report, Dec. 31, 1934, 106.

BIBLIOGRAPHY

Government Publications on Samoa

- American Samoa, A General Report by the Governor. 137p.
Washington, United States Government Printing
Office, 1927.
- American Samoa, Joint Hearings before the Committee on
Territories and Insular Possessions, United States
Senate, and the Committee on Insular Affairs,
House of Representatives. 105p. Washington,
United States Government Printing Office, 1928.
- American Samoan Commission, Message from the President of
the United States. Document No.249, 27p.
Washington, United States Government Printing
Office, 1931.
- American Samoa, Codification of the Regulations and Orders
for the Government of American Samoa. 126p.
Washington, United States Government Printing
Office, 1931.
- American Samoa, Hearings before the Commission appointed by
the President of the United States in accordance
with Public Resolution No. 89, 70th Congress.
510p. Washington, United States Government
Printing Office, 1931.
- Moore, R.S. and Farrington, J.R. The American Samoan
Commission's Visit to Samoa, September-October,
1930. 65p. Washington, United States Government
Printing Office, 1931.
- O le Fa'atou, Monthly Newspaper. Printed in English and
Samoan since August, 1903 by the Government of
American Samoa, Pago Pago.
- The Pacific Islands (Eastern Groups). Vol.II, 1933. United
States Government Printing Office, 1933.
- Steinberger, A.B. Report upon Samoa, or the Navigator's
Islands. 8 v. Washington, United States Government
Printing Office, 1874.

Books on Samoa, Health, and Education

- Barradale, V.A. Pearls of the Pacific. 192p. London, London Missionary Society, 1907.
- Bennett, T.G. A Health Program for the Children of a County. 196p. Contribution to Education, No. 584. New York City, Teachers College, Columbia University, 1933.
- Churchward, William B. My Consulate in Samoa, 403p. London, Richard Bentley and Son, 1887.
- Dansdill, Theresa. Health Training in Schools. A Handbook for Teachers and Health Workers. 405p. New York National Tuberculosis Association, 1928.
- Franzen, Raymond. Health Education Tests. 70p. New York, American Child Health Association, 1929.
- Humphreys, Lincoln. Hygiene and Physiology for the People of American Samoa. 62p. Malua, Upolu, London Mission Press, 1923.
- Keesing, Felix M. Modern Samoa, Its Government and Changing Life. 506p. London, George Allen and Unwin Ltd. 1934.
- Lundie, G.A. Missionary Life in Samoa. 294p. Edinburgh, William Oliphant and Sons, 1846.
- Masterman, Sylvia. The Origins of International Rivalry in Samoa. 253p. London, George Allen and Unwin Ltd. 1934.
- Mead, Margaret. Coming of Age in Samoa. 297p. New York, W. Morrow and Company, 1928.
- Pratt, George. Samoa Dictionary: English and Samoan. 223p. Malua, Upolu, London Missionary Society Press, 1862.
- Reeves, E.R. Brown Men and Women. 294p. London, Swan Sonnenschein and Company, 1898.
- Roberts, S.H. Population Problems in the Pacific. 411p. London, George Routledge and Sons, Ltd., 1927.

- Rosenau, M.J. Preventive Medicine and Hygiene. 1458p. New York, D. Appleton and Company, 1927.
- Rowe, N.A. Samoa Under the Sailing Gods. 339p. New York, Putnam, 1930.
- Ryden, G.H. The Foreign Policy of the United States in Relation to Samoa. 634p. New Haven, Yale University Press, 1933.
- Stair, Reverend J.B. Old Samoa. 296p. London, The Religious Tract Society, 1897.
- Stevenson, R.L. A Footnote to History. 322p. New York, G. Scribner's Sons, 1892.
- Turner, C.E. Principles of Health Education. 317p. New York, D.C. Heath and Company, 1932.
- Personal and Community Health. 680p. St. Louis, Missouri, C.V. Mosby Company, 1935.
- Turner, George. Nineteen Years in Polynesia. 584p. London, John Snow, 1861.
- Samoa: A Hundred Years Ago and Long Before. 395p. London, Macmillan and Company, 1884.
- Wilkes, Charles. Narrative of the United States Exploring Expedition during the years 1838-1842. 5v. Philadelphia, Lea and Blanchard, 1845.
- Williams, John. A Narrative of the Missionary Enterprises in the South Seas Islands. 590p. London, John Snow, 1838.
- Williamson, R.W. Religious and Cosmic Beliefs of Central Polynesia. 2v. Cambridge, Cambridge University Press, 1933.
- The Social and Political Customs of Central Polynesia. 3v. Cambridge, Cambridge University Press, 1924.

Bulletins, Pamphlets, and Magazine Articles on Samoa

- Brigham, William T. An Index to the Islands of the Pacific Ocean. B.P. Bishop Museum Memoirs, Vol I, No.2. Honolulu, 1900.

- Buck, Peter H. Samoa Material Culture. Bulletin 75.
B.P. Bishop Museum, Honolulu. 1930.
- Handy, E.S.C. Samoa Housebuilding, Cooking and Tattooing.
Bulletin 15, B.P. Bishop Museum, Honolulu. 1924.
- Mead, Margaret. Social Organization in Manua. Bulletin 76.
B.P. Bishop Museum, Honolulu. 1930.
- Nelson, O.F. The Truth about Samoa, and Samoa at Geneva.
National Printing Company, Auckland, N.Z. 1928.
- New Zealand Samoa Guardian. Weekly Newspaper. Edited by
Percy Andrew, Auckland, N.Z.
- Wist, Benjamin O. "Ethnology as the Basis for Education."
Social Science, Vol. 10, No.4. October, 1935.

Studies, Reports, and Monographs on Health and
Education

- Annual Medical and Health Report for the Year 1933, Council
Paper. No.54. Government Printer, Suva, Fiji.
- Annual Reports of the Department of Public Health of
American Samoa. Typescript copies from the Public
Health Officer to the Governor of American Samoa.
- Annual Reports of the Department of Education of American
Samoa. Typescript copies from the Director of
Education to the Governor of American Samoa.
- Jones, Martha R. Report of Dietary Observations carried on
at Ewa Plantation, 1932-1933. H.S.P.A. Research
Project, Bulletin No. 1. Honolulu Star-Bulletin,
Honolulu, Hawaii.
- Kelley, D.J. and Knowlton, E.F. A Practicable School Health
Program. Monograph No.1, Revised 1930. School
Health Bureau, Metropolitan Life Insurance
Company, New York.
- Lam, Fred K. A Study of the Physical Defects Found Among
1819 Kindergarten and First Grade Elementary
School Children in Honolulu during the fall of
1931. Board of Health, Honolulu, Hawaii.
Child Health in Honolulu, Board of Health,
Honolulu, Hawaii. 1931.

- Lambert, S.M. The Depopulation of the Pacific Races. B.P. Bishop Museum, Special Publication 23, Honolulu, Hawaii. 1934.
- Latimer, J.V. A School Health Study of Newton Massachusetts. Monograph No. 5. 1927. School Health Bureau, Welfare Division, Metropolitan Life Insurance Company, New York.
- The Native Medical Practitioner. Journal of the Central Medical School, Suva, Fiji. Government Printing Office, Suva Fiji.
- Studies in Samoa by a Commission of the Barstow Foundation. Typescript. Barstow Library, Bishop Museum, Honolulu, 1932.
- Turner, C.E. "Health Education as a World Movement." Pacific Problems. University of Hawaii Quarterly Bulletin, Vol. XII . No. 3, 1933.
- Wist, Benjamin O. Report of the Visiting Staff to the Samoan Teachers Institute, 1932-1933. Typewritten Copy. Barstow Library, Bishop Museum, Honolulu, 1933.
- Wood, Thomas D. Health Education, A Program for Public Schools and Teacher Training Institutions. 525 West 120th Street, New York City, 1926.