

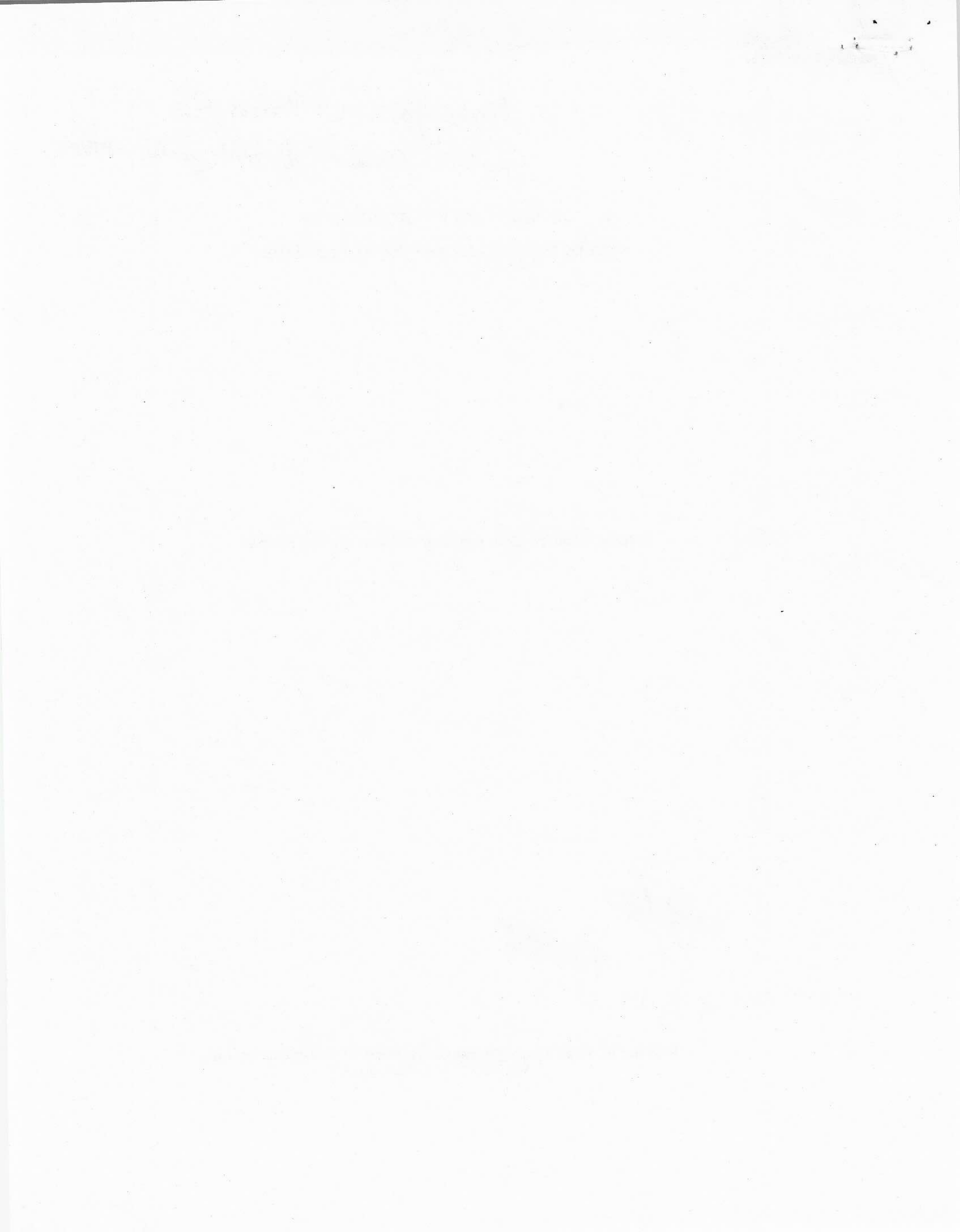
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MANOA VALLEY, HONOLULU:
A STUDY IN ECONOMIC AND SOCIAL GEOGRAPHY

JOHN WESLEY COULTER AND ALFRED GOMES SERRAO

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Vol. XXX, No. 2, April, 1932



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OF PHILADELPHIA, Vol. XXX, No. 2, April, 1932MANOA VALLEY, HONOLULU:
A STUDY IN ECONOMIC AND SOCIAL GEOGRAPHY*

JOHN WESLEY COULTER AND ALFRED GOMES SERRAO

University of Hawaii

Manoa Valley offers an opportunity to the geographer to study an area in a transitional phase of land utilization, namely, from an agricultural use to use as residential sites. This valley also affords a picture of wet-land farming carried on by Chinese near a large city in the tropics.¹ Finally, it includes within its confines a typical Japanese colony in the Hawaiian Islands, nearly all the members of which earn a living by market gardening or flower gardening. The Japanese have adjusted themselves in a characteristic way to a social environment remarkably different from that of the land of their origin.²

Manoa Valley, an area of about three square miles, has a population of about five thousand, estimated on the basis of approximately one thousand homes. About eight hundred of these are homes of Caucasians of North European origin and one hundred seventy-three are homes of Japanese.³ There are ten Chinese homes, ten Portuguese homes, six Hawaiian homes, five Porto Rican homes, two Filipino homes and one Spanish home. Approximately half of the occupied land of the valley is used for home sites. Nearly all of the remainder of the used land is devoted to agriculture.

There is a close correlation between the use of the land in the valley and the racial origin of the population. The Caucasians use their land almost exclusively for home sites. Except in a small residential district, nearly all the Japanese use their land for vegetables or for flower gardening; the Chinese use their land for wet-

* This study is based on field work done during the spring of 1930. The writers acknowledge help from Yukiso Yamamoto, a Japanese student at the University of Hawaii, who assisted in the field work.

¹ Manoa Valley lies within the city limits of Honolulu.

² This study gives a general picture of the life of typical Japanese in the Hawaiian Islands, excepting those who work on sugar cane and on pineapple plantations.

³ In the servants' quarters of some of the homes of wealthy Caucasians there are Japanese families. Including them, the total number of Japanese families in the valley may be estimated at approximately two hundred.

land farming. With the exception of a few banana planters and dairymen, nearly all the rest of the people use their land in one or other of the ways just mentioned.

Furthermore, a close relationship exists between the situation of homes in the valley and the network of roads. Nearly all the Caucasians live in the residential district which lies on the west side of the valley near its mouth where there is a network of streets on the floor and on the lower valley slope adjoining it. The Japanese homes are situated near the two main thoroughfares, one on each side of the valley, which lead from the densely populated residential district to the upper part. Very few people live on the floor in the upper half of the valley which is devoted almost entirely to wet land crops.

Manoa Valley from an airplane presents a panorama of beauty peculiar to the subtropical climate and valley topography of the Hawaiian Islands. The valley is a great U-shaped gash in the Koolau Mountains with a wide, flat floor. With one exception, tributary valleys consist essentially of wide grooves extending down the steep walls.

At the mouth lies the University of Hawaii with white, square buildings set in contrast to the green of the campus. Just east of the University lie the checkered fields of the University farm, in one of which a group of white dots indicates a grazing herd of Holsteins. North of the campus are the buildings of the Mid-Pacific Institute, a boarding school for boys and girls; the broad roofs of the dormitories with their dormer windows stand out conspicuously. North and west of the Mid-Pacific Institute is a great cluster of homes, set among shade trees, and green lawns and intersecting streets, through which a trolley car line winds towards its terminus.

Farther up the valley on the west side of the floor the homes are scattered, with intervening spaces of unused land.

On the east floor, opposite the scattered homes, are taro patches, light green, rectangular, symmetrical. North of the taro land is a large area of pasture land on the surface of which small, square patterns indicate its recent use for taro production.

The central part of the floor of the valley presents a view of hundreds of adjoining taro patches bordered at the sides of the valley by small farms. On higher land adjoining the floor on the east side, a group of tombstones mark a Chinese cemetery.

The sides of the valley for most of their length rise steeply from 1000 to 1500 feet above the floor. Adjoining the floor, however, on the west side and on the east side, from the center of the valley to the head, there are strips of less steep land. Manoa Stream has cut a deep channel close to the east side in the lower portion of the valley.

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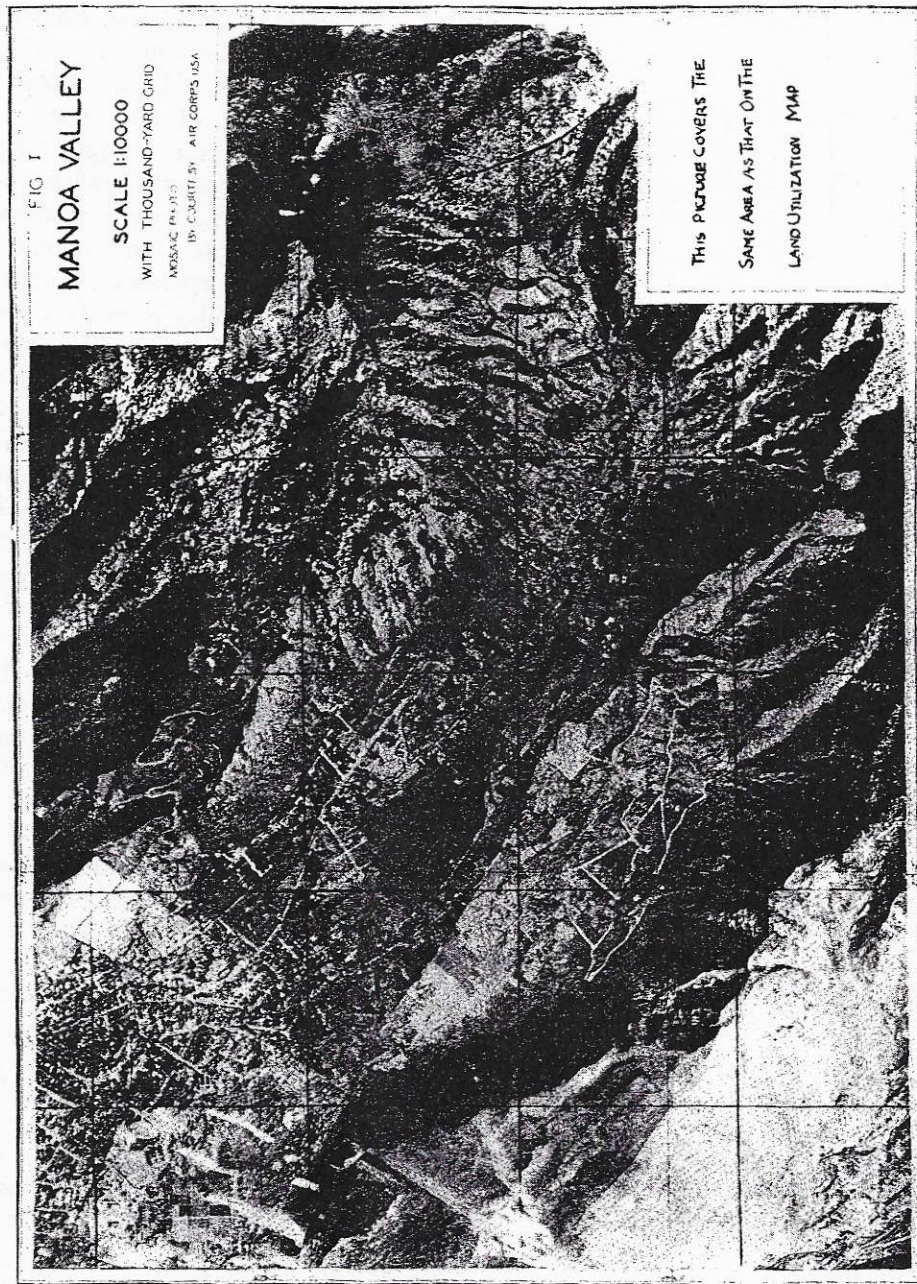


FIG. 1.

With few exceptions, the steep sides of the valley are uncultivated. In the lower part of the valley on the drier side, much of the natural vegetation is *pili* grass. In many places the slopes of upper Manoa have a dense growth of *Hilo* grass. On the more exposed, west side of the valley there is a larger number of tributary valleys than on the east. In the tributary valleys the light yellowish green of the *kukui* nut (candle nut) trees is contrasted with the darker green of surrounding vegetation. On the lower slopes the prevailing bush is guava, among which patches of lantana are scattered.

Upper Manoa Valley presents a somewhat different aspect from the central and lower parts. The land is rolling and dissected by tributary streams which fall in cataracts down the steep walls at the head of the valley. The head of the valley is cirque-shaped; to the "cirque," four small hanging valleys are tributary, their streams converging to form Manoa Stream. During rainy weather the summit of the "cirque" is enveloped in nimbus clouds. The natural vegetation consists for the most part of *lehua* trees, against the dark green of which stands out in patches on the slopes the vivid hue of *uluhi* ferns, and in the gulches the light green of the *kukui*. On the lower, rolling land, small farms dot the landscape; recently harvested patches are interspersed with areas of growing vegetables and flowers. Large, white lath houses stand out conspicuously in some flower gardens. In the northeast corner, banana patches are the outstanding feature of the landscape. In the northwest corner there are a few experimental plots of sugar cane. Between the two there is a small area of forested land.

Most of the homes of the Caucasian residential section of the valley are one- or two-story frame buildings built in a style of architecture in accordance with the standards of taste and expenditure of their owners. There are American bungalows, and other forms of architecture suggestive of New England Colonial and English types. Most of them have "lanais" or covered porches where families can enjoy the out-of-doors in the equable climate of the Hawaiian Islands and at the same time maintain the privacy of home life. Each home is set in a well-kept lawn or garden.

The land near the mouth of the valley has three outstanding advantages for residences, namely, a salubrious climate, the beauty of the surroundings and scenery, and proximity to the business district of Honolulu.

The climate at the mouth of the valley is somewhat similar to that in parts of the Mediterranean area. The annual precipitation is about thirty inches. There is a season of winter rain followed by a summer during which there is generally little precipitation. Farther

up the valley the precipitation increases rapidly until at the head the average rainfall amounts to about 167 inches, and is distributed throughout the year. In all parts of the valley the rainfall varies appreciably from year to year. Temperature records for several years are available only for one station in the valley. The average temperature of the warmest months is about seventy-five degrees. In the opinion of residents, the temperature at the head of the valley is a little lower than that at the mouth.

The beauty of the surroundings and scenery of the residential district is typical of that of the Hawaiian Islands. About many of the homes are hibiscus hedges, palm trees, flowering leguminous trees and other tropical plants. The houses higher up on the slope command a view of picturesque scenery; in the foreground lies a coastal plain dotted with houses and trees; in the distance lie Waikiki beach, Diamond Head and the placid waters of the Pacific.

Nearly all the heads of families in the Caucasian residential district are associated with business concerns in the city of Honolulu and the nearness of their homes to their offices is an advantage. The business district of the city can be reached from most of the homes in about fifteen minutes by automobile, or a little more by electric trolley.

The Japanese residential district is on the east side of Manoa Valley near the center. It consists of a score of neat, frame buildings with basements, situated on a main route of travel and on each side of short lanes leading from it. Most of the outbuildings are garages. A few ironwood shade trees are scattered between the houses.

Some of the residents of the Japanese residential district are tradesmen employed in Honolulu, others are "yardmen" who take care of the yards, lawns and flower gardens of Caucasian residents in the valley. Their wives work as maids or laundresses for the Caucasian families.

The sites for the educational institutions at the mouth of the valley were chosen for the beauty of the surroundings and because of the cheapness of the land at the time the institutions were built. In the case of the University of Hawaii, proximity to the city of Honolulu was also an important factor.

Wet-Land Farming

Approximately one third of the land in Manoa Valley devoted to agriculture is used by Chinese for the production of taro. This plant, indigenous to tropical Asia, is an important food crop of the

Polynesians. It is raised for its starchy, oblong, tuberous root which, at maturity, attains a length of from ten to eighteen inches and a diameter of from three to six inches.

The part of the valley used for taro is the flat land on the floor along both sides of Manoa Stream. This land is irrigated by diverting water from the upper reaches of the stream to taro patches which are set out in terraces from the lower land to the higher. The patches vary in size from a few hundred to a few thousand square yards and are so arranged that the water flows from one to an adjoining area. There are six terrace levels from the lower parts of the valley to the higher.

Much of the taro land has remained as such since the early history of Manoa Valley when the area was occupied exclusively by Hawaiians. In preparing the land to raise taro, a section of the valley was divided into small inclosures. Banks bordering the patches were built with excavated soil and made water-tight by pounding the earth firmly in place.

Taro is planted at any time of year, as the growing season near sea level in the Hawaiian Islands is twelve months long. Plants in adjoining patches are in various stages of growth from slips recently set in the moist earth to plants ripe for harvest. The period between planting and maturity is from eighteen to twenty months. The length of time for maturity depends in part on the condition of the soil and in part on the amount of water available. The richer the soil, and the more water the plant has, the shorter the time to maturity.

Planting is done by taking slips from mature roots and placing them in rows in soil which previously has been irrigated by permitting water to enter the patch, and ploughed by water buffaloes drawing small ploughs. The ploughs are of special types designed for use in paddy land. Furrows are made parallel and are immediately filled by soft mud flowing in from both sides. During the process of plowing, bone meal fertilizer is generally mixed with the soil.

When the slips have sprouted, which is some five or six weeks after planting, the patch is flooded. The water enters the patch at one end and the outlet leading to a slightly lower patch is closed. When the water reaches a level of seven to eight inches, the outlet is opened and the water is allowed to flow out at the same rate that it enters the patch. Thus a level of water in the patch is maintained, and the water is prevented from becoming stagnant. Weeds are removed at intervals during the period between planting and maturity.

When the plants have matured, a taro patch is drained. Harvesting is done by hand; the top is grasped firmly and the root pried loose

from the soil. The tops are then lopped off. The roots are placed in sacks, taken to "town" and sold to manufacturers of "poi." A small portion of the tops is gathered to feed hogs; much of the remainder is allowed to decay in the soil.

The business of raising taro in Manoa Valley is not a profitable

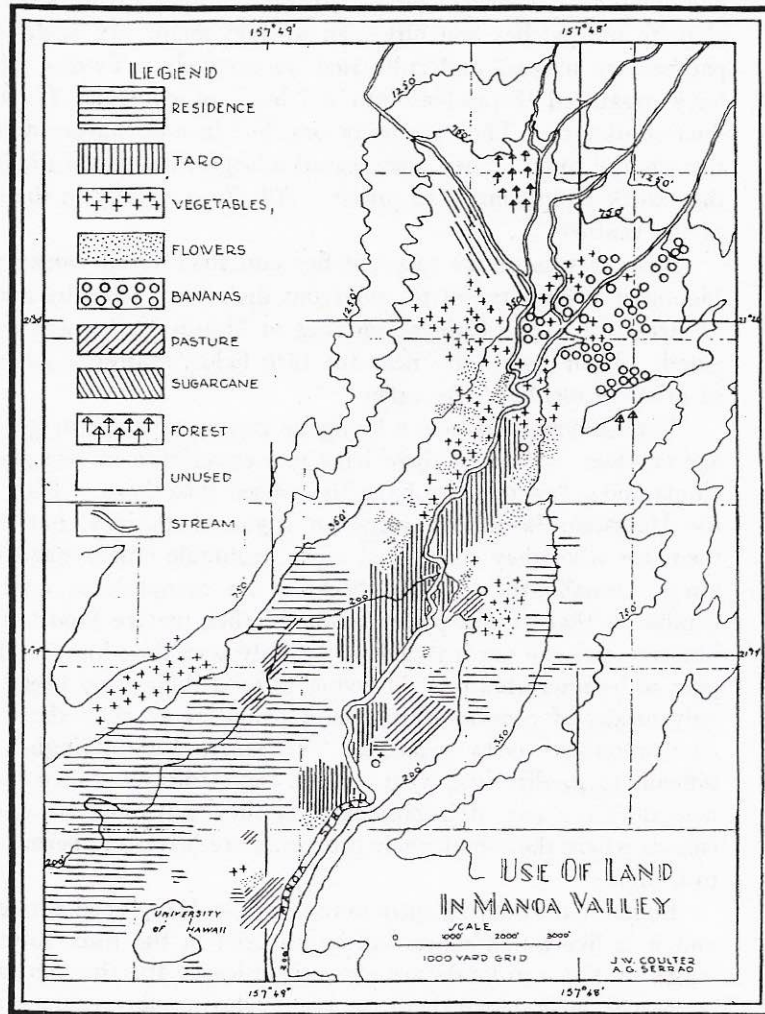


FIG. 2.

one at present. It has not been worth while to harvest the taro from many patches owing to the low market price in Honolulu. This condition has been brought about by overproducing of taro on the island of Oahu. Weeds in some patches conceal the plants.

In spite of overproduction and a glutted market, the Chinese farmers keep on planting taro, seemingly hoping that they will be able to sell the crop. It is a case of "blind production."⁴

Taro lands in Manoa Valley are owned by companies or individuals who lease them to Chinese growers. Some growers lease from eight to ten patches and hire men to help them. In such cases the patches are planted and cultivated successively. Twelve Chinamen have organized themselves into a "hui" or company for the production of taro. They are bachelors, live in a dormitory and one of them is the cook. They have leased a large tract of taro land where they work from sunrise to sunset. All share equally in the outcome of the venture.

Some lessees of the taro patches and their hired workers live in Honolulu. They travel to and from their taro fields by automobile or street car. The Chinese families in Manoa Valley are not segregated. Their homes are near the taro fields, scattered among those of other residents of the valley.

The Chinese who earn a living by raising taro are men of middle age or older. Most of them have had experience in rice planting in China and a few of them have also raised taro there. They came to the Hawaiian Islands to work on sugar plantations, but later left them for what they considered more profitable employment of other kinds. Finally they drifted back to an occupational environment similar to that of the paddy fields of their native land. They are illiterate and eke out a living in the only way they know. They appear to be interested only in trying to earn their daily bread. Their only means of communication with people other than those of their own nationality is by means of "Hawaiian Pidgin-English." It is difficult to predict just what will be their future. Since their business does not pay, it is possible that they will move away to other islands where they think their prospects are better or, perhaps, return to China.

Some of the land recently in taro is now being used for residences and it is likely that more will be so used in the near future. The leases on the taro lands are short-time leases for the owners of the lands may wish to sell them for home sites, a more remunerative use than that of raising taro.

✓ *Market Gardening*

A considerable proportion of the land of Manoa Valley is used for market gardening which is carried on almost exclusively by Japa-

⁴ Crawford, D. L., "Some Observations on the Agricultural Situation in Hawaii," University of Hawaii—Occasional Papers No. 8, April, 1930.

nese. The land so used is on the valley sides adjacent to the floor, though some of it extends part way up the steep slopes. Most of it adjoins the floor in the upper half of the valley on the west side. More soil, eroded from the slopes of this more exposed side, has been transported to the foot of the slope than on the protected east side where erosion and transportation of soil have proceeded more slowly. On the west side, therefore, the transition area between the floor and the foot of the steep slope is wider and less abrupt.

These market gardens are parcels of lands usually varying from one to four acres in area. They are situated near the main routes of



Photo by A. Serrao

FIG. 3.—A typical Japanese home and outbuildings in Manoa Valley.

travel. Most of the land is leased from the owners on short time leases running from one to seven years. A few acres are owned in fee simple.

The headquarters of a vegetable farm, the residence of the owner, is situated in, or adjacent to, the market garden. It is a small, one-story building, surrounded in part by pots of flowers, decorative climbing plants, or other greenery. The home generally consists of a small cookhouse or kitchen set off at one side, a reception room or parlor, two bedrooms, and a bath house. Close to the house are a garage, a tool and vegetable shed and a dog kennel. At a little distance is a cesspool to which the sewage is carried through an underground pipe. The garages and homes of many farmers adjoin each

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other under the same roof. About some of the homes are shade trees; near a few are papaia trees or banana plants. Those which are on the streams or on diversion canals have small clothes-washing platforms built on the banks.

The tool and vegetable shed contains hoes, spades and rakes, and a tank in the floor in which to wash vegetables. Hanging on the walls or shelves are other appurtenances used in farming; the most obvious of these are bunches of dried reeds used to tie the produce of the farm in bundles of convenient size for packing in the family automobile truck to be taken down town to market.

Vegetables raised in market gardens are restricted to those which are not likely to be injured by the high winds which occur frequently in the valley. The Hawaiian Islands lie in the path of the trade winds which blow at the rate of about ten to fourteen miles an hour most of the year. The configuration of Manoa Valley causes much of the wind to come in gusts which, in the middle section of the valley, frequently reach a velocity of thirty to forty miles an hour. Most of the time the wind blows from points between east and north. Many vegetable gardens are bordered on the windward side by wind breaks consisting of trees or stone fences. In some places, loose rock gathered from the surface of the gardens has been piled in heaps as windbreaks.

Nearly all the types of vegetables grown are root vegetables. Among the varieties are Japanese taro,⁵ burdock, radish, sweet potato and carrots. In gardens well protected from the wind, a few varieties are found which are not raised in exposed gardens. Soy beans, for example, are raised in some sheltered areas.

The growing season for most of the varieties is from three to four months, and a market gardener generally gets three or four crops a year from his garden. There is no set season for planting or harvesting. Just after the vegetables are harvested from one part of the garden, another crop is planted. Planting of beds is done at short intervals so that part of the produce may be harvested every few weeks throughout the year.

On smaller vegetable farms, the work is done by the gardener and his family. On the larger units two or three laborers are employed. Most of these are Filipinos who have drifted in from the sugar cane fields for the sake of less onerous work and a higher wage. They generally live as bachelors in frame shacks outside of which may often be seen laundered clothes hanging to dry. A small pile of fagots for cooking fuel is usually in evidence. Some of the Filipinos live in the tenement district of Honolulu.

⁵ Japanese taro is a dry land plant and is raised like other vegetables.

No figures are available regarding the yield of vegetables raised in market gardens. Gardeners state that it varies somewhat with the nature of the soil, but more especially according to the amount and distribution of moisture. The soil is derived from the decomposition of basaltic lava. Its color and texture vary from that of a red, highly porous nature on the higher slopes to one which is grayish-brown and clayey in character near the floor. In some places it is thin and bed rock lies near the surface. On the lower slopes of Mount Tantalus there are extensive deposits of black volcanic cinders. According to the gardeners, clayey soil is the most fertile and the cinder, or "black sand," the least fertile; the red porous soil is of intermediate fertility. In most places where market gardening is carried on, the soil is light, easily worked and drains readily. Artificial fertilizer is used in nearly all the gardens. It is generally in the form of bone meal which is scattered on the surface of the soil and left for the rains to carry downward to the roots of the plants. In gardens near unused land where much brush is growing, a little lime is sprinkled on the surface of the ground about the vegetables to keep away the insects which breed in such areas.

When vegetables are harvested they are washed in the tank in the vegetable shed. Most of them are tied in bundles and taken to the River Street market early in the morning. There they are sold to green grocers, their agents, or to street hawkers who peddle them from door to door. Some are peddled in Manoa Valley by the growers.

A market for Japanese taro is developing on the mainland of the United States, and some of the product of Manoa Valley is exported to San Francisco. The taro from several gardens is generally combined to form a shipment.

Apparently little account is taken of the market for vegetables in Honolulu. A gardener may take a load of vegetables down town to a market which is glutted. The only criterion of success or lack of it in this business is whether the gardener has a balance in his favor in one of the city banks. However, the general appearance of the garden and homestead is indicative of the financial circumstances of the operator. The homes and gardens of some are in good condition, others show evidences of neglect, and a few are dilapidated. Varying degrees of success seem related largely to individual initiative and ability. In general, farmers on larger units seem to be more successful than those on small units. It is maintained that two acres of land is the smallest unit that can support one family by market gardening. The gardeners who own their land in fee simply show more evidences of success than do most of the others. A few unsuccessful gardeners

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eke out a living by working at irregular intervals as stevedores at the Port of Honolulu or as laborers wherever they can get jobs.

In addition to the higher lands bordering the floor of the valley and those in its upper section where vegetable farming is carried on, a considerable area on the steep slope of the west side of the valley near its mouth is also used for market gardening. It is cultivated by Porto Ricans and a few Portuguese and Spanish who barely make a living. The vegetables raised are for the most part Irish potatoes, sweet potatoes, string beans, tomatoes, Portuguese cabbage and corn. These vegetables are raised in well-spaded beds, in contiguous plots of land varying in area from about one to three acres. Little provision has been made for drainage with the result that heavy rains cause considerable soil erosion.

The land used for vegetable farming in Manoa Valley is also being encroached upon for home sites, and much of it now used for producing vegetables will probably be used for homes in the near future. The transition from an agricultural district to a residential section is marked by a rise in land values. The rental of land, therefore tends to become higher, and the profit from vegetable production smaller.

Flower Gardening

The use of the land for flower gardening in Manoa Valley as well as in other districts in the Hawaiian Islands is in response to the large local demand for flowers. Native customs and the use of flowers for decorative purposes create a large demand. It has been the custom of the Polynesians to present friends on their arrival or departure with garlands of flowers in the form of "leis." This custom has been adopted by the Caucasian population and to a considerable degree by Orientals in the Hawaiian Islands. The demand is greatest in the city of Honolulu, the port of arrival and departure for visitors to and from all the Islands and the mainland.

Flower gardens in Manoa Valley vary in size from about one quarter of an acre to one acre. They are in scattered locations among the vegetable gardens. They present at nearly all times of year a pretty picture of neatly arranged beds in which are plants in various stages of development. Flower seeds which have just sprouted, blossoming plants and mature flowers are often found in adjoining beds in the same garden. The growing season for many varieties is from four to five months. Shortly after the flowers in a bed are cut, the area is again seeded. The gardens are cultivated almost entirely by the owners or lessees and their families.

Among the varieties of flowers commonly raised are asters, gardenias, marigolds, African daisies, Easter lilies and carnations. A

few gardeners specialize in the production of maiden hair ferns. As these plants are injured by direct sunshine and strong winds, large lath-houses have been built in which the ferns are raised.

Flowers are irrigated when the intervals between the natural rains are too long for the best development of the plants. In some gardens the beds are sprayed by water from perforated pipes; in others watering cans are used.

The flowers are generally sold to one of the many florists in the city of Honolulu, to whom they are taken in trucks belonging to the gardeners. There is a Japanese florists' association in Honolulu to which many of the Manoa Valley florists belong. In case the growers cannot sell their product, a circumstance which sometimes arises because of an over-supplied market, the flowers are sent to one of the flower stores belonging to the association where they are disposed of to the best advantage of the growers.

There are varying degrees of success among the flower gardeners. In general, it takes half an acre of flower-growing land to support a family. On areas smaller than this, therefore, families have difficulty in earning a living.

A few Japanese in Manoa Valley raise both vegetables and flowers. Their lands vary in area between those of the flower gardeners and those of the vegetable gardeners discussed above. They carry on their business in ways similar to those discussed and dispose of their products in a similar manner.

Flower gardening takes up but a small portion of the total area of the valley, and there is no sign as yet of the land so used being encroached upon for home sites. There are areas of unused land which could be used for the production of flowers without much expense for clearing.

Banana Planting

There are three banana plantations in Manoa Valley. They have areas of approximately seventy-five, forty, and thirty-five acres respectively. All three are operated by Japanese.

Banana plantations are situated in the northeast corner where the trees are protected somewhat from strong winds by the high side of the valley. The plant raised is of the Chinese variety which generally does not exceed six or seven feet in height and, therefore, is less likely to suffer from the effects of strong winds than are the taller varieties.

Each plant produces one bunch of fruit which matures in about twelve months. The plant then dies, but suckers spring from around the old root. The suckers are thinned, the best being left in place. After five or six years the clump is torn up and replaced by a sucker.

Plants mature in small areas in each plantation in rotation so that

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A total of 9,000 to 10,000 bunches of bananas are harvested annually from the three plantations, the part of this figure for each being roughly in proportion to its size. Bunches vary in weight from about twenty-five to fifty pounds. About two-thirds of the crop is marketed in Honolulu; the remainder is shipped to San Francisco through a local agent.

In response to an increasing demand for bananas, there is a tendency to enlarge the areas used for their production. Unused land on the lower slopes of the valley adjoining plantations has been cleared recently and suckers have been planted.

Dairy Farming

The area of Manoa Valley used for pasturage provides part of the feed for dairy cattle. There are three dairy farms in the valley, on land leased from the owners by Japanese. The sizes of the herds of cattle on the three farms are twenty-four, twenty-five and forty-four respectively; they are Holstein, Guernsey, cross breeds of these types, and "scrubs." The milk from two of the dairies is distributed to customers, most of whom live in the valley; that from the third is sold to a larger dairy in Honolulu.

Pasturage on the dairy farms is poor and no attempt is being made to improve it. It is insufficient for the number of cattle on the farms; additional feed is provided by cutting wild grass from the roadsides and from unused land in the valley and transporting it on trucks to the dairies. Some crushed grain and meal is purchased at stores in the city.

The amount of milk produced on a farm is about the same throughout the year, as the dry periods of various cows are spaced throughout the twelve months. One laborer is generally employed on each farm and occasionally two are hired according to the amount of work to be done. Most of the routine work, however, is carried on by the owners of the farms and their families.

An obvious method of improving the pasturage would be that of dividing each farm into paddocks and permitting the cattle to graze in some, while in others grass was being planted or allowed to grow. However, the use of the land for dairying is only a temporary one. The pasture land nearest the residential area of the valley will undoubtedly be used in the near future for home sites, and subsequently other portions will be transferred to a similar use. Its present use is merely a passing phase of land utilization.

Hog Farming

There are two hog ranches in Manoa Valley, one operated by a Japanese and the other by a Portuguese. The areas of land used for this purpose are too small for representation on the scale of the accompanying map of land utilization. They are located near the center of the valley and are surrounded for the most part by unused land.

The hogs are raised in pens; no free range of wood land or waste land is allowed them, as only a small area of land is leased by the operators. The pens are in frame buildings with corrugated iron roofs, cement floors, and feed troughs; they are separated from each other by wooden partitions. Near the pens are cookhouses where some of the feed for the animals is cooked. However, much of the feed for the hogs is obtained from table waste in the residential area of the valley and the availability of this waste is an important factor in carrying on hog farming in this area. The feed also includes cooked grass, taro leaves, corn, middlings and barley purchased in the city.

Experimental Agriculture

The land used for sugar cane shown on the map is in connection with an experimental substation under the direction of the Hawaiian Sugar Planters Association. Cane seedlings of various kinds are raised and distributed among the sugar planters on the different islands. Constant effort is being made to improve the sugar cane grown and to discover new varieties better adapted to the natural environment. The work is under the supervision of a manager who directs about a dozen Japanese laborers.

The rainfall of the sugar cane area is greater than that of any other part of Manoa Valley for which records have been kept. It ranges from 105 inches annually to 240 inches.

Nearly all of the forested land in the valley is in the arboretum of the Hawaiian Sugar Planters Association which adjoins the land used for sugar cane. It was planted as part of a programme in reforestation which is being carried out by the association. Species of trees introduced to the islands are raised there and transplanted to other areas of the Territory which have environments similar to that in the part of Manoa Valley where they are raised.

Unused Land

The land of a considerable portion of Manoa Valley is unused. The waste land near the floor of the valley is in irregularly shaped patches scattered among the used land. Part of it is rough and rocky

and much of it is covered with brush. Most of the waste land is on the sides of the valley where the steep slopes preclude the possibility of successful cultivation; this will probably remain unused for many years.

Where wind erosion is advancing on unused land, trees should be planted to conserve the soil. It would benefit the agriculturists of the valley if the brush were cut from the waste land adjoining market gardens, as it offers a breeding place for insects which damage the crops. However, it is doubtful if the expense of doing this would warrant its being undertaken.

Business District

As already indicated, Manoa Valley is used almost exclusively as a residential area or for carrying on in a small way the various agricultural enterprises discussed. The one small business district, however, is worthy of mention. Situated on a main route of travel, a short distance southwest of the Japanese residential district, it is composed of a few stores which supply the wants of the local Oriental population. There are three general merchandise stores, a laundry, a barber shop and two gasoline stations, all owned or operated by Japanese, and one general merchandise business carried on by a Chinaman. The general merchandise carried consists mainly of Japanese, Chinese and American canned goods, textiles, tobacco, candy and hardware, including cutlery and cooking utensils. The stores are frame buildings, parts of which are occupied by the owners and their families. They are to some extent social centers where customers linger to gossip and discuss news of current interest.

Social Adjustments

The social geography of Manoa Valley is in part a result of the use of the land, but largely of the background of the various racial groups which compose the population.

Where land is used in small units for residential sites or for intensive agriculture, the distance between homes is very short. People, therefore, can come in contact with each other more easily than, for example, in areas where the land is used for extensive agriculture or for grazing. In the latter case, farm units must be large for carrying on a successful business and the homes of the owners or operators are in some instances widely separated.⁶

⁶ A discussion by J. W. Coulter of the social geography of an area where cattle raising is the major adjustment to the natural environment appeared in the July, 1931, number of the *Bulletin* under the title of "Lucia."

The Caucasian population of the valley carry on social activities in much the same way as Anglo-Saxon Americans on the mainland of the United States. The genial climate of the islands, however, permits people to spend more time out-of-doors than on most of the mainland. Many social events are held in gardens, in the grounds of country homes in other parts of the islands or on ocean beaches.

Nearly all the heads of Japanese families in Manoa Valley are citizens of Japan. About sixty per cent of them are natives of the Island of Kyushu, about fifteen per cent come from Yamaguchi province, and most of the remainder from other provinces in southern Japan. Nearly all of them were engaged in cultivating small farms on hillsides in their homeland where they were recruited for work on sugar cane plantations in the Hawaiian Islands. After spending some years as laborers in the cane fields, they drifted away to take up more profitable work. Having acquired control of land in Hawaii, they have taken up again old and familiar methods of earning a living.

The fact that the Japanese work hard most of the day is largely responsible for the lack of a highly organized social life. Furthermore, the temporary character of the present use of much of the land in Manoa Valley is marked by an uneasiness among those who are earning a living from the soil. The greater number of those who have leased lands do not know whether or not the leases will be renewed when the present term has expired. They work from six or seven o'clock in the morning until five or six in the evening and seem bent on getting the largest return possible while the use of the land is under their control. Social activities are in large part associated with organizations formed in connection with their means of earning a living.

There are six organizations among the Japanese in Manoa Valley. The membership of some of these groups is composed entirely of people of the same business or trade. The Farmers' Club has a membership of people who earn a living directly from the soil.¹ Most of the farmers cannot read English. When it is necessary to sign a lease or make an income tax return, a member of the group sufficiently proficient in the English language is hired to explain the terms of the document and make the necessary computations. Another organization is composed of "yardmen." Many of the members of a third group are flower gardeners.

The largest organization is a district unit of the Japanese Asso-

¹ This club may reflect similar organizations in Japan. See "Agrarian Problems of Modern Japan," by Dorothy J. Orchard, in *Journal of Political Economy*, Vol. 37, April and June, 1929.

ciation of Hawaii. Members of this organization exercise general supervision over social activities of a semi-public nature. When distinguished visitors from Japan arrive in the islands, officers of the association take charge of their reception and entertainment.

An outstanding feature of the Japanese colony in Manoa Valley as elsewhere in Hawaii is the establishment of Japanese language schools. There are two language schools, each of which plays an important part in the social life of Japanese residents. They are supported by Japanese parents who contribute funds for the salaries of teachers and for keeping the school buildings in repair. There were 176 families who sent children to these schools in 1929. School is held after the regular session of the Manoa Public School, usually from about 3:00 P.M. to 5:00 P.M. Reading and writing the Japanese language are the principal studies. The children have already learned to speak it at home. The grades correspond in a general way to those of the American Public School.

Japanese children are not enthusiastic about attendance at the language schools. They are Americans by virtue of birth on American soil and prefer to be educated as Americans. However, out of deference to their parents, most of them attend regularly.

An ability to speak, read and write the Japanese language gives the children a medium of communication with their parents without which social intercourse would be very difficult. A child in attendance at Manoa Public School became ill and was taken to Leahi Home, a sanatorium for tubercular patients, where he lived three years. When he returned to the public school, the principal suggested that he rest as much as possible, and advised that he should not attend the language school for a few months. His mother, speaking to the principal through an interpreter, insisted that he attend the Japanese language school, for, during his absence from home, he had forgotten most of the Japanese he knew and could not talk with his parents.

A knowledge of Japanese is especially important when children grow up and leave home. Otherwise, communication with their parents is very difficult and home ties are likely to cease. The children learn to speak English at the Manoa Public School or in one of the other public schools in Honolulu. Parents, however, have little time or opportunity to study this language. The opportunities of parents in Manoa Valley for acquiring a knowledge of English are more restricted than in many parts of the city where there are more occasions to mingle with English-speaking people.

As Japanese children grow older, a breach develops between them and their parents. The children incline strongly to American ways

of living and doing things. They try to live up to American standards and traditions inculcated in the public schools. The parents are essentially Japanese in language, customs, and standards of living. Literate parents read the Japanese sections of the Japanese newspapers and their children read the English sections.

The Japanese parents have a strong attachment for their native land. They would like to save enough money to return to their homeland and spend their last days in Japan. The children, in contrast, are not especially interested in Japan. They have learned in American public schools that America is the land of opportunity where "all men were created equal," and they look forward to equality of opportunity when they graduate from school and get into the world of business and commerce. One of the reasons why some of the parents do not return to Japan is that the children express a strong preference for Hawaii, where they recognize better economic opportunities. Paternal and maternal affection is stronger than the "heimweh," or home-loving, and the parents are willing to sacrifice their own interests for those of their children. Indeed, the hard work which the parents do in the fields is done in a large measure on behalf of the children whom they wish to provide with the best opportunities possible.

There is a feeling among parents that they want their children to be "better than farmers." One of the banana planters came from a sugar cane plantation on another island so that the children might enjoy educational opportunities afforded by the city of Honolulu. The children look forward to "white collar" jobs in the city. There are at present only two American-born citizens of Japanese parentage who are operating farms in Manoa Valley. One of them is doing this with the help of a hired Filipino laborer while he himself is attending the University of Hawaii. The other one works on a farm because his father died before he had time to find a job in the city and he has carried on his father's business so that he could support his widowed mother.

Japanese parents instil in their children a desire to be what the parents would have liked to be but did not have the opportunity of becoming. A similar attitude is common among thousands of American parents on the mainland of the United States. America has been the land of opportunity for many generations of young Caucasian-Americans, and Oriental-Americans consider the Territory of Hawaii in the same light.

Another factor in the estrangement of parents and children is that of religion. The parents are Buddhists or Shintoists and brought their religion with them to the new country. Many of the children

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have been taught in the Christian Mission in Manoa Valley. There is also a Buddhist Mission supported by the Hongwanji Mission of Honolulu. Both of these have been established for children. The parents in general are indifferent and take little interest in the religious training of their children.

That "east is east and west is west and never the twain shall meet" is not true in Manoa Valley. They do meet in the Japanese homes there. The homes are small and there are from about four to seven children in a family. In homes where the children are young, the Japanese style of living is carried out. The living room is devoid of Occidental furniture and has mats on the floor; on the walls there are a few cabinet size pictures of members of the Japanese Imperial family. Outside the door is a place where wooden or straw sandals are left before the house is entered. Food is typical of that in Japan; fish, rice, vegetables and tea occupy the more important places in the diet.

As the children grow older, they demand Occidental food about which they have learned and for which they have developed a taste in nutrition classes and laboratory courses in domestic economy in the public schools. They also become accustomed to Occidental furniture at school and consequently like to have chairs and tables at home. In Manoa Valley there are homes which are patterned after Japanese homes, and there are also homes that are very similar to those of Americans.⁵ There are also many homes which represent different stages of transition between the two. In one home which the writers visited and from which the children had graduated from school and gone into business in Honolulu, the parents had resumed a purely Japanese style of living.

Superimposition of American culture on an Oriental old-world background is illustrated by the general use among the Japanese of automobiles, telephones and, in a few homes, of radios. On Sunday afternoons, families go for automobile rides in the family touring car, business transactions are carried on by telephone, boys and girls "tune in" on the local broadcasting stations, and sometimes get in touch with other stations in the Pacific Ocean and on the mainland.

Manoa Valley Public School is an important social institution in the valley for bringing members of various races together and imparting something of the duties and responsibilities of American

⁵ Statistics recently compiled by the Japanese Chamber of Commerce in Honolulu show a decline in imports to the Hawaiian Islands from Japan. The establishment of homes by Hawaiian-born Japanese who are gradually adopting Occidental methods of living is believed by business men to be a reason for the reduction of imports from Japan. *Honolulu Star-Bulletin*, Dec. 17, 1930.

citizenship. Table 1 shows the enrollment by racial origin at this school. There are 388 children of which 293 are Japanese. It is noteworthy that there are no Caucasian children. The latter attend Punahou or Hanahaoli private schools, or public schools outside the valley. At Manoa School, the first six grades are taught. After finishing the sixth grade, most of the students go to a junior high school. Among the subjects taught to boys is gardening and to girls "home-making." There is a "rest period" in the afternoon which is of special advantage to the children of Japanese origin who attend the Japanese language schools after the session at the public school is over. Pupils at Manoa School study American text books, sing American songs and play American games. There is a parent-teachers association, the meetings of which are attended regularly by the parents and at which problems of common interest are discussed. Most parents, however, converse with the principal through an interpreter.

TABLE 1
ENROLLMENT AT MANOA SCHOOL, JUNE, 1930

Nationality	
Hawaiian	8
Part-Hawaiian	22
Portuguese	16
Porto Rican	7
Spanish	2
Chinese	22
Japanese	293
Korean	3
Filipino	12
All Others	3
Total	388

The outstanding institution in the Valley for training for American leadership is the University of Hawaii which students from all parts of the Hawaiian Islands attend. Out of an enrollment of 1046 regular students, 395 are of Japanese origin. Several boys and girls from Manoa Valley are students at the University. That many young people of Japanese ancestry in the Hawaiian Islands are growing up to take leadership in American institutions is evidenced by the records of those who have graduated from the University. A county farm agent on the island of Hawaii is a leader in his field. Three teachers of vocational agriculture in the islands are doing commendable work. At commencement exercises of the University of Hawaii from 1924 to 1930, twenty-eight students of Japanese ancestry accepted commissions in the Reserve Corps of the United States Army.

Ambitious young women of Japanese ancestry who graduate from the University find the field of education an attractive objective. The recent institution of junior high schools in the Territory has given many opportunities in this branch of educational work. Their faculties include some outstanding women graduates of the University of Japanese racial origin.

There is little to be said regarding the social life of other nationalities of Manoa Valley, as with one exception their numbers are too few to have any organized social activities. Chinese, Portuguese and Porto Ricans associate with others of their own nationality in Honolulu.

The social and religious center of the Hawaiian group is a Hawaiian Christian church where a service is held each Sunday. It is a branch church of the Hawaiian Board of Missions in Honolulu. The Hawaiians represent the last of the Polynesian dwellers in Manoa Valley. Two Hawaiian families earn a living by flower gardening. The head of another family takes care of two small recreation centers in the valley; the head of a fourth is employed in Honolulu.

Future of Manoa Valley

With regard to the future of Manoa Valley, it is difficult to say what changes will take place except as regards the use of the land. As already indicated, the area used for residences will probably increase. The production of taro will probably decline in importance. Since the taro land is low-land, and therefore less desirable for residences than higher land in the valley, some of it may, for a time, remain unused, and thus increase the area of waste land in the valley.

Future social conditions in the valley are more difficult to predict than changes in land utilization. As the younger Japanese grow up, it seems that they will incline more and more to American modes of life and institutions. This is the general trend shown by this study.