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XIV.

Formosa.

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(Communicated.)

[P. 302] The aborigines of Formosa naturally fall under two divisions: First, the ancient inhabitants of the great plains to the west, who possessed some of the elements of civilization, and who, from their exposed situation, soon fell under the dominion of the Chinese, when they entered the island, over two hundred years ago. They are now found scattered nearly the whole length of the island, and generally driven back from the rich lands that were their ancient inheritance, to the sterile and hilly lands near the foot of the mountains, where they are subject to continual attacks from the savages. They have frequently migrated to rid themselves of unpleasant neighbors, both Chinese and savages, and there are known to be large colonies of them who have penetrated the mountains, and have settled in unknown valleys on the east coast. They are generally known by the name of Pepo-whan, which, literally translated from the Chinese, means barbarians of the plain, and demonstrates the fact that the Chinese found them inhabiting the plains on their arrival. A large division of the Pepo-whan, near the center of the island, who still speak their native language, are called Lek-whan -- ripe or cultivated barbarians. At the time of the Dutch occupation there were several tribes or nations of this people, each speaking its own language.

The second great division of the aborigines of Formosa is of those who are still wild and savage, and who inhabit the steep and rocky mountains running through the east part of the island. They occupy about half of the island, but their territory, where it has been visited, is steep and rocky. They are probably but little changed by [p. 303] their intercourse with the Chinese, and there may be tribes who have not yet heard of the Chinese. The gradual advance of the Chinese in their search after timber and cultivable lands has no doubt caused wars among the different tribes, by crowding the more exposed tribes back upon those behind. They are divided up into many small tribes and nations, but their languages, as well as the general customs of tattooing and of cutting off and preserving the heads of their enemies, point to their descent from a

common stock. They live much by hunting, but cultivate their steep hill-sides in millet, sweet potatoes, tobacco, etc. They are known by the general name of Che-whan -- raw or unripe barbarians. Of those visited, I have called those living east of the Lek-whan settlement of Polisia, by the common name of Che-whan, while the others are designated by their tribal names of Tsui-whan and Kale-whan.

The Pepo-whans of the south part of the island occupy a large tract of country to the east of Takow and Taiwanfu. They inhabit the villages of Kongana, Kamana, Alukang, Backsa, Lakuli, Baukimseng, etc., and they may number five thousand people, while there is a large colony formed from them on the east coast of the island. They no longer speak their aboriginal language, using Chinese instead, and the Fuh-kien dialect of this, though they are in contact with the Hak-kas on the south and south-east. I procured the two lists of words, Nos. 4 and 5, from very old women, No. 4 at Kongana and No. 5 at Baukimseng. They both said that their language was very little spoken, even in the time of their parents, Chinese having already become general. The two lists are not identical, and seem to show that there has been a coalescing of tribes, the supposition being strengthened by differences in dress, etc., still apparent among them. I found in existence among them a number of old manuscripts in Roman letter, most of them apparently business papers, such as deeds and contracts. The Pepo-whans still preserve these among their valuables, though no one can read them. Some of them have Chinese pawnshop marks upon them. They seem to be indubitable proofs and remains of the Dutch occupation, when many teachers and missionaries were employed among the aborigines, and many thousands of them are said to have become Christians. When the Dutch were driven out, and the teachers and missionaries murdered by the Chinese, the whole work was supposed to have gone out in darkness, but these manuscripts seem to show that for nearly a hundred and fifty years afterward, these poor people, oppressed and driven back to the hills by the Chinese, still kept enough of the knowledge taught them to read and write their [p. 304] own language, and almost necessarily books and a knowledge of the Christian religion also. The manuscripts are in the ancient Pepo-whan language, spelled out in Roman letters, the dates generally being in Chinese, spelled out in the same way. Of the manuscripts procured, a few of them are of the reign of Young Ching, who reigned from 1723 to 1736; the most of them are of the reign of Keen Lung, who reigned from 1736 to 1796; and there is one of the reign of Kaking, who began to reign in 1796. Curiously, the oldest of the documents are dated eighty years after the Dutch were driven out. There may yet be found books and manuscripts giving some account of the struggles of this people with the Chinese.

The Pepo-whans are a large and well formed race, showing little of Chinese features, except where it can easily be traced to intermarriage between the races, which seldom occurs. The men have no distinctive dress, unless the turban may be considered such, though the Chinese also use this to some extent. The women have a peculiar and very becoming dress, consisting of wide trowsers and a short and wide-sleeved jacket, meeting the trowsers at the waist and fastened with a sash. The head is wrapped in a blue turban, the ends of which are drawn out at the sides of the head like wings and

giving them a peculiarly jaunty and coquettish appearance. The Pepo-whans are very poor, having mortgaged the poor lands they now occupy to the Chinese, so that they live principally upon sweet potatoes, the one rice crop that the land produces going to pay rent or the interest on their debts. They burn charcoal and the women carry it in baskets upon their heads to the Chinese villages for sale. They were visited about three years ago by Dr. Maxwell, a Scotch missionary, and they received Christianity readily, the Chinese worship of idols and ancestors having but little root among them, while the traditions they still possess of their ancient teachers probably influenced them to some extent. There are now several hundred christians among them at Kamana, Backsa, etc., with a number of schools and chapels established. The Pepo-whans of Baukimseng, differ from their brethren farther north in their ancient language, and the women, instead of a turban, wear a broad conical hat, like the Hak-kas near them, and this is highly ornamented with tinsel and bits of glass. They are crowded back upon the poor stony lands near the mountains, and they go to their fields armed with lances and fire-locks to protect themselves from attack. The Pepo-whans have nearly lost their love for hunting and fishing, and support themselves almost entirely from the produce of their fields. There seems to be but little hope of their regaining a foot-hold on the [p. 305] western side of the island, and they will probably be compelled to migrate, like their brethren who have gone before them, to the east coast.

The Lek-whan, a large division of the Pepo-whan, living near the center of the island, seem to have originally come from near Chang-wha. A few miles to the north of this city there are still toward two thousand living in the towns of Loisia and Toasia, though, like the Pepo-whan near Taiwanfu, badly in debt to the Chinese. There is a large settlement of them in a mountain valley, two days' journey to the east of Changwha, called Posia or Polisia, to which, according to their own account, they began migrating forty or fifty years ago, and they are still going, there now being some four or five thousand there. This valley is entirely surrounded by mountains and forests inhabited by savages. They are nominally at peace with these, and pay them a yearly tribute of rice and cattle, but in spite of this they are continually losing their lives from attacks by the savages, some twelve or fourteen persons from the valley being killed annually, while at work in their fields or fishing or hunting. The only news of the manner or cause of the loss the friends and relatives receive, being often the headless trunk lying where it fell. The Lek-whan call themselves Paijek in their own tongue, which all speak in their families, though all, but the very old, speak Chinese also, and some of the younger ones can write it with some readiness. There seem to be no manuscripts or other proofs that they formerly had any connection with the Dutch, and their position at nearly equal distances from Taiwanfu and Tamsui, the two points occupied by the Dutch, would have made them among the last visited by them, and the least influenced. Their language shows them to be closely connected with the savage tribes of the island, and with the Pepo-whans of the south. They are large and strongly framed as compared with the Chinese, but their faces are coarse, and the teeth of the women protrude; but their countenances show much good nature and *kindly* feeling. Their dress is much that of the poorer classes of Chinese, though for weddings and

great ceremonies they use a national dress, consisting of two or three long sleeveless mantles, open in front, and the under one reaching to the heels, while those above are shorter. These are ornamented with a large amount of red embroidery about the bottom. They raise a species of nettle, from which they make a coarse but lasting cloth. They irrigate and cultivate the soil in the same way as the Chinese do, using buffaloes for plowing and for drawing rude carts, that are used in all parts of the island, and are said to be of Dutch origin. They live like the [p. 306] Chinese, gathered together in villages of huts made of adobes and covered with grass roofs. They are great lovers of hunting and fishing, and are very skillful in making snares for deer and other kinds of game. They generally hunt and fish in large bands, for the sake of protection from the savages, from whom they are always liable to attack. They frequently surround a space of country and drive the deer and other game through a ravine or some other place, when they are easily shot. They use fire-locks quite generally for defense and for hunting, though some of the poorer ones still carry bows and arrows, and many go to their fields or from one village to another armed with lances. They have a curious but very effectual way of fishing the shallow streams that flow through their country, this by damming them and turning the water to one side of the channel, leaving most of the bed of the stream dry, and the fish and shrimps in little pools and under rocks, where they are easily captured. The Lek-whan first learned something of Christianity a little over two years ago, when one of the tribe, an old hunter, strayed down to Taiwanfu, and into the missionary hospital there, where he was cured of an ulcer, and took back with him some idea of the Christian religion. This rapidly spread among the Lek-whans, and there are now four or five hundred church members among them, with many more who have thrown away their Chinese idols and their own idolatry, and have become regular attendants upon the Christian services. There are five or six chapels established among them, and the same number of schools, where the Romanized colloquial is taught them, and I saw many girls and boys who had learned to read and write it. This Romanized colloquial is Chinese of the Fuh Kien dialect, spelled out in Roman letters, with certain marks to show the Chinese accents. There is a lack of school-books, there being nothing but the new testament and a hymn book yet translated into this dialect, but if other books are furnished, there is no reason why these bright, intelligent children may not get good educations, that will be worth much more to them than the Chinese literary education, made up principally of the knowledge of so many thousand characters, and so many old adages of Confucius and Mencius. The ancient worship of the Lek-whan, like that of the Pepo-whan of the South, seems to have consisted of certain idolations, dances and songs, and the worshiping of a boar's or deer's skull. They differ materially from the Chinese in a natural love and taste for music. They have fitted several of their wild idolation tunes to Christian hymns, which they sing with great spirit. They learn European music readily, but seem to prefer their own. They are [p. 307] naturally honest and hospitable, and we had great trouble in getting them to take pay for the articles of food we bought of them. There are still some remains of their ancient tribal government among them, but the lineal chiefs or head men seem to have purchased small mandarinships, and

thus unite the Chinese authority with that inherited. Justice is generally administered as among the Chinese by the elders and head men of the village. They have a curious custom of naming their children after the different kinds of trees in the forests.

The savages that I visited east of the Lek-whan settlement of Posia, I have left with the general designation of Che-whan. The Chinese and Pepo-whans often call them Bon-whan. They occupy a part of the water shed of the island about the head-waters of the river that flows through the valley of Posia and into the Formosan channel near Changwha, and of other streams that flow into the Pacific. They are said to belong to a nation or confederacy, of over thirty villages, under one chief. They are very small and inferior looking, hardly averaging five feet in height, but very muscular from their life spent in climbing up and down their steep mountains. Their dress is made of a species of nettle, perhaps the ramil plant, which they cultivate, and which the women weave into narrow strips of very strong and durable, but somewhat coarse cloth, which is generally ornamented with red and blue stripes woven in. The only clothing of the men is a coarse sleeveless shirt of this cloth, which comes down to the middle of the thigh. I saw a couple of men among them wearing nothing but narrow (tapa rabos), not so wide as the hand, made apparently from the hair of some animal, woven, and colored red. They were said to belong to another, but friendly tribe. The women wear a sort of short tunic or kilt. Both sexes go barefooted, and from long usage, their feet get as hard as horn, so that spines and sharp rocks do not penetrate them. They appeared to be very flat-footed, the arch of the foot being almost entirely wanting, while the toes were much spread, the big toe turning round toward the heel, so that it almost made a right angle. The women are very fond of wearing ear-rings of white shell, and bands of beads of the same about the head. The men stretch their ears, generally by putting in pieces of bamboo, but upon occasions of display, those who are able, put in disks of white shell two inches or more in diameter. Both sexes wear the hair long, the men doing it up in a knot behind, while the women take more pains in braiding and decorating it. They have a practice of knocking out the eye teeth of the boys when they are about reaching man's estate. Both [p. 308] men and women tattoo, the men generally being content with a perpendicular bar upon the forehead and another upon the chin, while the women tattoo several horizontal bars upon the forehead, and a complex system of lines upon the lower part of the face, that gives it a decidedly blue look. They also tattoo several horizontal bars upon the forepart of the leg below the knee. The tattooing is done near the age of puberty, and the first part tattooed is the bands upon the forehead, the complicated work upon the lower face being left until later. The arms of these savages consist of a few fire-locks procured of the Chinese, and used principally in hunting, and lances and large knives used in hunting Chinese heads. They decorate these weapons with tresses of Chinese hair, and when upon the hunt for Chinese, carry highly ornamented red bags for carrying home the captured heads. They make regular expeditions every year down to the border land, where they lie in wait for the Chinese who come into the forest after rattan, bamboo shoots, etc. Human heads have a recognized value among them, and a man's importance depends upon the number of heads he has taken. The base of the skull is

cut off, and the brain extracted, and the head then thoroughly dried, the teeth being generally knocked out -- to make necklaces. We saw twenty-four of these skulls upon one small platform, and apparently the property of one man. I could find no proof that they are cannibals, though this charge is frequently laid to them. They may drink the blood of their enemies, as I saw the Lek-whan drinking warm deer's blood, but the bodies of the Chinese killed by them are generally left lying where they fell. They are good hunters, and I saw several bear's skulls among them, and many of deer and wild boar. They generally hunt in bands, and surround their game. Their houses are made by digging a little below the surface of the ground, and then building up heavy stone walls to a height of two or three feet, in which are planted upright posts, and limbs and trunks of trees are interwoven among these to the proper height, and then all is covered with grass. There are no windows, the low door serving for the entrance of light, and an outlet for smoke. One house generally serves for two families, a fire being built at each end, and a couple of low banks of bamboo that serve for seats and beds. They construct various little rat-proof granaries for storing their millet and rice. These are square, and are made of the bark of trees, and covered with grass, and raised upon four posts three or four feet above the ground. These posts are crowned with round wooden caps to keep the rats and other vermin from ascending. These little granaries are perched all about among the houses. There were in [p. 309] the village several little huts of wattled grass, and not more than four feet square, perched upon bamboo poles twenty-five or thirty feet above ground. I inquired the use of these, but could get no other answer than that the children were sometimes put to sleep in them, perhaps connected with some superstitious custom or rite. Their household utensils consist of a Chinese iron pot, and a few gourds and water-tight baskets of rattan for holding water. The light they furnished us was a pine torch. I saw no native pottery among these or other savages of the island. They seem to possess no cultivable valleys, so that they are compelled to cultivate hill sides so steep that we were compelled to use both hands and feet in climbing them. They cut down the timber and let it lie until dry, and then set fire to it, burning off the leaves and small limbs, leaving the trunks and stumps upon the ground. They then build low irregular terraces of the small pieces of slate with which the hills are covered, to keep the soil and crops from washing away. They plant sweet potatoes, and a kind of rice that needs no irrigation, but their principal food is millet. After a couple of years or more of use, they allow the lands to grow up again, the second growth generally being a species of alder. After a few years of rest, the land is again ready to be cleared and planted. Their implements are their knives and sharpened sticks, the very steepness of the land cultivated, rendering it more easily cultivated with such poor tools, A mis-step would often send a hundred pounds of stones and earth sliding down. They do not appear to have any settled religious system, but to be terribly troubled with superstitions and fears of supernatural beings and causes. They are said to bury their dead with terrible fear, hastily covering the body with earth, and then all running away, and no more visiting the spot.

When hunting birds with some boys of the tribe, I strayed into a thick dark grove of bamboos near the village, and when I came out, the people motioned me away with

their hands, and would not allow me to come near until the old Lek-whan guide who accompanied us, had baptized me upon the face, and hands, and breast, with water. I afterward understood that I had entered one of their burial places. When we got ready to return, they begged us not to drink of the springs on our way down the mountain, for fear that we should enchant them. They make curious little musical instruments by cutting a tongue in a piece of bamboo, which is put between the teeth, and the tongue made to vibrate by pulling a string tied to the end of the bamboo. The tone is modulated by the breath, as in a jews-harp, which it much resembles in sound.

[P. 310] The Tsui-whan -- Chinese Tsui, water, and whan, savage -- are so called from living about a small lake, which is situated about ten or fifteen miles to the south of Posia, from which they get a great part of their living by fishing. This lake, with the flat, cultivable lands about it, is entirely shut in by wooded mountains, those to the east rising to a great height. The lake is over two miles in length, and contains a number of species of fish and eels. There are three villages of Tsui-whan about the lake, containing perhaps in all a thousand people, under one chief, and apparently entirely separate and independent of any other tribes of savages. They are a small but well-formed race, with regular and rather pleasing features. The dress of the men is a hunting shirt made of deer or monkey skins, that does not protect the arms nor legs. The women wear a sort of tunic of Chinese cloth, and protect the fore-part of the leg with a sort of close-fitting gaiter from the thorns and spines with which the forest is filled. They do not tattoo, but have a custom of knocking out the eye-teeth of the boys, so that they reminded me of squirrels. They are not warlike, but use rude bows and arrows for hunting and protection when they are too poor to get firelocks. They are great hunters, and large strings of monkeys' and bears' skulls hung about their dwellings. I saw them fishing with small dip-nets among the pond-lily and leaves, and catching a species of cat-fish (Silurus). They also fish with rude spears. They use, in navigating the lake, huge hollowed trunks of camphor trees, that look as if they may have been in use a hundred years. They are very awkward and heavy, and appear to have been hollowed with fire. They are open at both ends, the water being kept out with earth and sods. Their houses are large, grass-covered barracks, made of bamboos and wattles, daubed with mud. The roof is supported by a large central post, and to this are hung the firelocks, bows and arrows, etc., that belong to the four or five families that occupy the house in common. The locality of each family is shown by the fire burning on the ground, and by the low bank of bamboo that serves for a seat and bed. The lands about the lake are rich and easily irrigated, and well fitted for rice; but the Tsui-whan have allowed the Chinese to enter, and these, taking advantage of the savage love for strong drink and feasting, are fast gaining possession of all the lands, and the poor Tsui-whan are becoming serfs of the crafty Chinese. The Tsui-whan raise their own tobacco, and all smoke, even little girls of six and eight years of age. They are great lovers of music, and those who were at work, harvesting and carrying home rice for their Chinese masters, were continually droning a musical but monotonous refrain. I was [p. 311] several times awakened, while stopping in their village, by their wild mountain songs, which they sang while at their feasts. They carry burdens upon a high wooden frame that is

strapped to the back, instead of by the universal Chinese method of a pole across the shoulder. I could find but little traces of religion, but plenty of superstitions. I was one day astonished by the band with which I was traveling suddenly all dropping to the ground and beginning to groan as if they expected to die. Inquiring the cause of this, I found that a certain bird, to which ominous powers are attributed, had cried out on the left side of the path we were traveling, and this was considered a bad omen for us. After a few minutes the party got up and moved on, though all were still groaning and beating their gunstocks with their knives; and they did not regain their composure until the same bird was heard to call out on the right side of the path, when they moved on as usual. They seem to have little or no connection with the other savages, but to live in mortal fear of them. If they ever were in the habit of taking the heads of their enemies, it must have been long ago, as the proofs have disappeared.

The Kale-whan are a tribe of Che-whan inhabiting the mountains east of Takou. The territory they occupy is not extensive, not reaching over the dividing line of mountains, but all lying toward the west. They live in two villages, which are called by the Chinese Toasia and Taosia -- large and small towns. The first and lowest contains perhaps two hundred inhabitants, while Taosia is properly a collection of villages, with toward a thousand inhabitants. They can look down from these villages, which must be at a height of four or five thousand feet, upon the great plain below, thickly dotted with Chinese villages and covered with rice fields, and they can even see the sea in the distance. The Kale-whan are very small in stature, averaging about five feet. The features of the younger ones are quite regular and pleasant, but among the old, want and vice have almost made them to look like brutes. They dress in Chinese cloth -- the men in the short coat or hunting shirt, that leaves the legs and arms exposed. The chief was dressed in the skin of a tiger cat, which seemed to be his badge of office. The women dress much as the Chinese and Pepo-whans in the plain below, but they sometimes spend much time in embroidering their sleeves and trowsers. The women were always, while we were among them, whether at work in the fields or in the villages, crowned with wreaths of vines and flowers. These were often nothing more than sweet potato vines, but in some cases beautiful wild plants and flowers. Many of the men were also decorated in this way, and it would almost seem to be [p. 312] a distinguishing mark of the tribe. The hair of the men was allowed to grow long on the back of the head, but was cut square across the forehead, above the eyes. The women do not tattoo the face, but tattoo three bands across the back of the hands, with crosses over the knuckles, and two lines down the back of the lower joint of the fingers. The men tattoo the inside of the arms in bands that run to the shoulders and cross the breast. Tattooing among the men did not appear to be general, and may be confined to the chiefs and head men. They are armed with bows and arrows, firelocks and lances, though the latter weapons were the most common, being in the hands of every one. I saw a very heavy, rude gun-barrel, said to have been forged by them, and there was a hut in the village that was evidently used as a blacksmith shop.

From the fact that they have become so dependent upon their trade with the Pepo-whans, the practice of head hunting seems to have nearly gone into disuse. There were several skulls in niches in their houses, and I was shown a grass hut, with seven or eight skulls heaped in a corner. There were a number of small seats upon the ground, and as nearly as I could ascertain, this hut was used as a dormitory for the small boys, that they might get accustomed to the sight of the skulls of their enemies, and learn to prize them. The villages are upon steep hill-sides. The houses are built solidly, but rudely, of slabs of slate stone. Places are excavated in the hill-side, and the walls built up and covered with slate, the roofs slanting in but one direction, and that with the direction of the hill, so that the houses are hardly seen at a little distance. The roofs are supported by heavy cross walls inside, and by timbers, some of which have been rudely ornamented with carving. The doors, which also serve for windows, are so low that we had to creep on our hands and knees to enter. They are secured by slabs of slate set upright. The interior of the houses was clean and paved with slate, with low stone banks running around the sides for beds and seats. These were covered with mats, and such of the family as were not in the fields were sitting upon them, the women engaged in weaving mats and an open sack that is much used by them for containing burdens to be carried on the back. Many swarms of honey bees entered through crevices in the walls to cells made for them beneath these banks, and the savages make quite an article of trade of the honey and wax. They keep a few pigs and chickens beside.

The mountains all about the villages of the Kale-whan are almost entirely free from timber, there being only a little in the deep ravines, where it is almost inaccessible. The timber has probably been [p. 313] cut off and sold by the savages to the Pepo-whans. Coarse grass and reeds have sprung up, and this, by giving food for annual fires during the dry season, keeps a new growth of timber from springing up. The only timber that we could see, of any extent, was upon a high ridge that showed a few miles to the east and which we supposed must be the water-shed of the island. This timber appeared to be pine, and probably the common Chinese pine which we saw growing farther north. The Kale-whan were cultivating the steep hill-sides, much as the Che-whan of the north, by drawing weeds and bits of slate stone together into little ridges to keep the soil and crops from going down hill with the first rain. Their principal crops were millet and sweet potatoes. They also raised a small species of taro that grows without irrigation, though the large plant cultivated by the Chinese must be continually covered with water. While we were among them, toward the end of February, they were planting their millet. Their agricultural implements are sharpened sticks, some of them two or three pronged, like pitch forks, and some of them shod with iron. Many mango trees just in blossom were scattered over the hills among their little plantations, and had apparently been planted or at least protected by the savages. Their villages were nearly hidden in trees, among them oranges and plantains and betel nut palms, for which latter the savages have a great liking. Like the Che-whan at the north they build granaries raised upon posts crowned with flat disks of slate stone to keep squirrels and rats from climbing up. These little grass-thatched structures, apparently perched upon stilts, formed the most conspicuous part of the villages. The Kale-whan

seem to do little hunting but make out to add a few small fish and shrimps to their stock of food from the stream that flows through the valley below. We saw some of the young men fishing with a curious little circular net with pockets in several places for the fish to enter. They would inclose one of the large boulders, with which the bed of the stream was filled, with the net and then pry up the stone with poles and let it drop back into its place, scaring the fish that sheltered under it out into the pockets of the net. This style of fishing did not appear to be very productive, as they had caught but two or three small fish and a few shrimps. The Kale-whan are in the habit of coming down every third day to trade with the Pepo-whans in the mouth of a large ravine that opens into the plain. The Pepo-whans have a well-beaten cart road leading to the market place, and some fifteen carts, each drawn by two buffaloes, wound creaking along the base of the mountains to the general rendezvous. The day we visited them I noticed [p. 314] that all the time the bartering was going on two or three of each party, savages and Pepo-whans, held upright long lances in the center of the market-place as if this was a signal of peaceful trade. The Kale-whan brought down back loads of wood and grass which they traded for a little cloth and salt and rum, this latter being an article as eagerly desired by these savages as by other savages the world over.

The Kale-whan, in times of scarcity, frequently sell their daughters to the Chinese and Pepo-whans, who take them as supplementary wives and make them useful as interpreters in thus bartering with the savages. While we were among the Kale-whan the chief offered to sell us three girls of the tribe at twenty dollars each, or its equivalent, in barter on fee simple. The poor girls were dressed up in all the finery the tribe possessed, one of them having a beautiful stem of wild red lilies in her hair, and were kept singing nearly all night before our door. They are a very musical people, and at night a large number collected in the house of the chief and the women would sing a monotonous but musical chant apparently as long as they could hold their breath, and then the men would answer in the same strain, winding up every time with a loud inspiration. We went among them during their seed time, and there seemed to be some taboo connected with it that forbade them entering their houses, and we found them all sitting around outside with closed doors, or at least with slabs of slate that served for doors in their places. About midnight the taboo passed off enough so that they entered their houses, but there was still something that forbade them trading with us or assisting us, they even refusing at first to give us fire. Whenever one of the tribe, led by the display of cloth, scissors, etc., that we had with us, was tempted to trade us a pipe or an ornamented knife-scabbard, some one would pronounce the fatal word parici, and the trade was immediately dropped. There were some rare plants and land shells in the ravines which I wished to collect, but the savages seemed to think that it would bring some great evil upon them if they allowed me to take away any thing, and they almost compelled me by force to desist, pulling me by the arms and shouting parici in my ears. We were told that this taboo would pass off within four or five days, but we had no time to wait and so did not see them in their usual state.

The numbers of the savages of Formosa are hard to estimate. They are certainly more numerous than would be expected from the rough and mountainous character of the country they inhabit. They are weak and cowardly and badly armed, and their only safety is in [p. 315] their woods and rocks, through and over which they make their way with almost the facility of wild beasts. Those who inhabit the sea coasts to the west are in the habit of plundering wrecked vessels and adding the heads of those of the crew who escape drowning to their treasures. They are said to be a fierce race and better armed than those of the mountains. The Chinese are slowly encroaching upon them where the soil and timber is worth possessing, but it will take centuries at the present rate for them to gain entire possession of the island, and it is probable that they never will conquer the whole island but will leave the most mountainous parts of the island in the hands of the savages, just as they have done in the interior of China itself, where there are many tribes of savages who do not recognize Chinese authority. There is probably no day of the year that passes without bloodshed along the savage border in Formosa. The savages are continually coming out and lying in wait for the Chinese, and the Chinese are in no way particular how they get the savages in their power and revenge themselves, but the Chinese government seems to have no concern in it. Those who live along the border understand that they do it at their peril, and that their death will not be noticed. The only means for defense or warning that we saw upon the border were undertaken by private individuals, and we saw one man, whose lands and property were exposed, who was offering ten dollars per head for savages.

The Island of Formosa lies about eighty miles from the main land [sic] of China, and is two hundred and fifty miles in length and eighty or ninety in breadth. Physically considered it is made up of a lofty range, or system of ranges, of mountains on the east side, with a rocky and precipitous coast on the Pacific, and rich level plains on the west, extending down to shallow seas in the Formosa channel, with immense sand flats, which are uncovered at low tide, and are apparently rapidly rising and adding to the cultivable lands. Several of the mountains are over twelve thousand feet in height, and the whole range from east of Takao for a hundred miles to the north must stand at near eleven thousand feet. In January, 1874, this whole extent was covered with snow, and it is probably so covered every winter. The highest mountains when visited were very steep, and were composed of slate rock with veins of quartz from an inch to several feet in thickness. The bases of the mountains and the foot hills are generally composed of coarse, friable sandstone, containing tertiary fossils. There are numerous plateaus among the foot hills and below them, evidently the remains of ancient plains that are now left far above the great plain below, the rivers having [p. 316] cut down through to a lower level. Many of these plateaus are tilted out of level apparently by the rising of the mountain chain behind them, and the foot hills are evidently thrown up in this way, especially those east of Taiwanfu that were like great furrows in the general direction of the mountain range, the strata of sandstone of which they are composed being tilted at an angle of 20˚, but growing greater toward the mountains.

The beds of coal which is found in great abundance at Kelung, at the north end of the island, are apparently in these superficial strata of sandstone. There has been considerable volcanic disturbances toward the north end of the island, and there are large boiling springs of mineral water and jets of steam bursting out in a valley a few miles east of Tamsui. Sulphur is deposited in great quantities, and the Chinese have manufactured it at some time. Petroleum is found flowing from the earth near Onlau toward the north end of the island, and we saw signs of coal on our way out from Posia to the east of Changwha. Gold is said to exist in the island, but this does not seem to be authenticated. There is a curious outcrop of limestone at Takao, near the south end of the island, comprising Ape's-hill, Whale's-back, and several smaller ridges connecting these and extending them. The dip of this outcrop is toward the southeast, almost opposite to the general dip of the strata in that part of the island. The rock is a porous limestone with many eaves and crevices in it. There is much fossil coral and a few shells that appear to be of the same age as those found in the sandstone. Whale's-back is thrown up at an angle of about 45˚ in a great level plain of alluvium, and appears like a great broken piece of ice that has been thrown up and frozen fast in its place.

The southern part of the island is in the tropics. There is much rain in the north part of the island, especially at Kelung. At Takao and Taiwanfu, it is dry from October to April, but it rains much sooner in the mountains to the east, the rains already beginning there in February. Rice is the principal crop cultivated upon the low level lands to the west, and there is much exported to China. The best lands produce three crops annually. Lands that are harder to irrigate are planted to sugar cane, and large quantities of sugar are exported in foreign vessels to Japan and Australia. Upon the first of March ten or twelve vessels were lying at the ports of Takao and Taiwanfu, all loading with sugar. The culture of tea has but just commenced, but has already reached considerable importance at Tamsui. The kind mostly cultivated is Oolong, which goes most of it to the United States. The cultivation can be carried to any [p. 317] extent in the north of the island, as there are great plains of high rolling lands lying from Changwha to Tamsui, of the rich red clay which is so favorable for tea. These high plains are the home of the camphor tree, many trunks and stumps of which still lie over the ground, and of the wild tea-tree, of which I saw one specimen, with the trunk a foot in diameter and thirty feet high. The inhabitants gather the wild tea, but it is of bad quality, either by nature or from being badly cured. These high plains are now lying desert, as they cannot be irrigated, while tea is one of the few plants that needs no irrigation. These lands lie near the sea where transportation is easy, while much, or most, of the Chinese tea country is almost inaccessible, the tea having to be carried many days on men's backs and then transported by boats down rapid and dangerous streams, before it can reach a market. Camphor is exported from the island, and most of the mountain land seems to have camphor upon it, but the drug is only procured by the destruction of the tree, and there is no replanting done. There is also quite a trade with China in camphor planks.

The Chinese population of Formosa is estimated generally at about three million, but this seems to be rather an under estimation of the real population. The most of them are from the province of Fuh-kien, which lies opposite, and many of them are descendants of the rebels, who took possession of the island with Koxinga. They are considered a turbulent race, and a rebellion happens as often as once in ten years, at least. They almost universally bind the feet of their female children, and child murder is not at all rare among them. At Tamsui, two little girls were picked up from the little jetty belonging to Dodd & Co., one of them still living, and it is not rare at all to find them wrapped in straw lying along the banks of the river, where they have been left by the tide. There are also quite a number of people called Hak-kas, who are supposed to come from the province of Canton. They speak a different language and live in separate villages, and they allow the feet of their females to grow to their normal size. The Hak-kas are especially numerous toward the north end of the island, though they are found nearly the whole length, occupying generally the lands near the mountains and most exposed to the savages. Formosa, though it has been settled by the Chinese within the last two hundred years, possesses some seven or eight walled cities, among them Taiwanfu, the nominal capital, Pitao, Kagee, and Changwha. Though of such modern date, they are built after the old Chinese model, which is probably very much that of the walls of ancient Troy, and they are intended to be defended by archers. There is no provision for attack or defense [p. 318] with cannon. The walls of Taiwanfu are said to be seven miles in circumference; they are from twenty to twenty-five feet in height, and the same in thickness. They are faced with brick and stone, but are probably earth in the interior. Taiwanfu is built upon the sight of the old Dutch colony, and there are still remains of a small fort called Zelandia, which was built to protect the harbor below. The present population of Taiwanfu, with the uncertainty that seems always to apply to Chinese cities, is estimated to contain all the way from thirty to sixty thousand people.

The Pescadores are a group of low flat islands between Formosa and the mainland. They seem to be composed almost entirely of basaltic rock, which is partly columnar in many of the cliffs. There is iron ore found upon Fisher's island. The rock of the island is barely covered with soil, but nearly their whole surface is cultivated during the south-west monsoon, in sweet potatoes, pea-nuts, and millet. The inhabitants are estimated at eighty thousand, and there are said to be thirty towns and villages. The town of Makang, which is the largest, probably has twelve or fifteen thousand inhabitants. Its harbor is good, but the entrance is intricate. The Chinese live generally in houses made of coral rock that is frequently cut into blocks. They are descendants of the Fuh-kienese, and are all fishermen. They have considerable trade with the mainland and with Formosa in dried fish and in hogs, which are fattened upon pea-nuts, and in pea-nut oil. The feet of all the women are small, though their hard and laborious life must make this custom troublesome enough. I saw one small-footed woman ploughing and driving the buffalo, though the wind was blowing a gale at the time, so that we could hardly stand before it. The islanders are a rough and uncivilized race, accustomed to hardships, and the charges of piracy and wrecking made against

them, are, without doubt, true. They are the boldest of fishermen, and during the warm monsoon, are almost amphibious. I was there in January, when the weather was cold and the wind and sea high, but when they found that I wished coral and shells, they procured me large quantities living. The islands make a good place for shelter for Chinese junks trading from Amoy and Fuchan to Formosa.

The map used in traveling was one made by General Legendre, who was formerly United States consul for Amoy and Formosa. The only means of telling distance was the Chinese report and our own fatigue, and the only method we had of telling the direction traveled was by a pocket compass.

[P. 319] General Legendre's map seems to be very correct when he had the opportunity of personal observation; outside of this, as might be expected, when dependence has to be placed on Chinese data, there is little reliance to be put upon it. The arrangement of the mountain ranges appears to be imaginary.

The first journey made was from Taiwanfu north following General Legendre's track to Kagee. From here we left his track on the left and turned toward the mountains. After one day's travel we entered the mountains by the bed of a stream, and then we traveled a day and a half through a mountainous country partly covered with timber, with here and there a Chinese village. This country seems to be a sort of neutral ground, and all were armed for the last six or eight miles before reaching the lake of Tsuisia. We passed through a wild country covered with timber, where there was said to be much danger from savages, and only large bands of armed men passed. We found a fresh water lake, surrounded by cultivated lands, and with three villages of Trin-whan. An old Chinaman, living upon a small island in the lake, owned most of the lands, and had begun the cultivation of tea. There was a very high and steep mountain at the distance of a few miles, directly to the east of the lake. The lake has several species of eels and of fish, the latter mostly of the Siluridal. From the lake, a day's march, most of the way through rough, mountainous country, brought us to the valley of Posia or Polisia. There were many beautiful tree ferns seen on this trip and camphor trees. The valley of Posia is six or seven miles in diameter, and is not all cultivated yet, as rice cannot be carried up such a distance to market, and the inhabitants only cultivate for their own use. There are several beautiful streams flowing through the valley, which, when they unite at the bottom, are well deserving the name of a river. The settlement of Posia seems to be very near the situation of a town on Legendre's map called Ou-gitang. We inquired in vain for this town, and came to the conclusion that it was imaginary. Posia is surrounded on all sides by mountains that are covered with timber. We saw several species of oak growing here with a pine and a wild apple, which the Lek-whan gather and boil for eating. There is also much camphor-wood, but distance to market makes it impossible to use it as yet. From Posia we went a day and a half's journey almost due east up a roaring stream that forms part of the river at Posia. For the first ten or twelve miles the rock was mostly sandstone, and on the north side of the stream the timber was composed of dwarf pine and oak, with no undergrowth but

coarse grass. On [p. 320] the south side, the mountain, though just as steep, was covered with almost tropical vegetation, among which were tree ferns, wild plantains, rattans, etc. As we went farther up, the vegetation became more scanty on both sides. We found the savages cultivating the steep hill sides, the rock now being slate and quartz. At last we reached the water-shed, having followed the stream we were upon to its heads, while we could see the country descending on the east toward the Pacific. Most of the country here seemed to have been under cultivation at some time, and had grown up to a second growth of timber, twenty and thirty feet in height, of a species of alder, closely resembling the one called tag alder in the United States.

Upon our return to Posia we started out toward the coast with a large band of Lek-whans as guides and guard. We followed the river for the first day through a rough, but rich and timbered region. At night we camped on the river, and near a fine valley, where there were still walls of houses and remains of ditches for irrigation, made by a body of Lek-whans, who settled there some twelve or fifteen years before. They were harassed so determinedly by the savages that they had to desert the settlement. Soon we broke out of the mountains, having left the river on the right. There were several guard-houses, with soldiers guarding the ravine we came down from inroads of savages. We hove here in sight of Changwha in the distance, and of the goat-plain, but we turned to the north and stopped at the Lek-whan town of Toasia. They have rich rice fields about here, and the country is very productive, but they are in debt to the Chinese. From Toasia, a day's journey took us to Laisia, part of the way being over a dry plain that had once been part of the great valley, but had been left high and dry by the streams cutting through to a lower level. Laisia lies in a beautiful valley among the hills and plateaus. There are two small villages, a few yards apart. On my journey toward Tamsui, I passed large quantities of camphor, most of it cut and lying on the ground, a short distance to the north of Laisia. The timber has been cut by the Chinese for the best part to be sawn into planks; the rest will lie until it is packed up and carried away to be distilled for the camphor. Between Laisia and Tamsui I passed many places fitted for the cultivation of tea. After reaching Tankiang, I followed General Legendre's track for the rest of the way.

Lists of words were procured of the native tribes. The first list belongs to the Tsui-whan. The second list belongs to the Lek-whans, [p. 321] who have their principal settlement at Posia and two neighboring villages.

The Che-whans, from whom the third list was procured, inhabit the adjoining district. The Pepo-whans, from whom the fourth and fifth lists were taken, occupy the large track of country to the east of Takao and Taiwanfu; while the Kale-whans are among the mountains further east. From these was procured the sixth list of words.

[See Linguistic Tables for Steere's lists of words.]