

Micronesia. The Ruins on Ponape, or Ascension Island

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#### PROCEEDINGS.

NINTH MEETING, April 14th, 1859. In the absence of the President, Frederick Prime, Esq., in the Chair.

On motion, the ordinary business of the Society, except the admission of new members, was suspended.

Marcus J. Boorman, Walter Underhill, Robert Ray, Jr., A. P. Robinson, Augustus F. Dow, Manton Marble, Edward Dickenson, John T. Doyle, Hon. James I. Roosevelt, Alfred W. Craven, C. E., John B. Holmes, Rev. J. W. Cumming, D. D., Charles M. Leupp, George T. Strong, F. H. Gerdes, Isaac Bernheimer, Benjamin M. Stilwell, and Francis W. Worth, were elected as Resident Members.

Hon. James Dixon, U. S. Senator, (Conn.); Edward D. Mansfield, Commissioner of Statistics, for the State of Ohio; and Washington A. Bartlett, late of the U. S. Coast Survey, were elected Corresponding Members.

John McLeod Murphy, Esq., read a paper on the "*Isthmus of Tehuantepec; its Inhabitants and Resources.*" The thanks of the Society were tendered to Mr. Murphy for his Address, and a copy requested for the Archives of the Society.

Before adjournment, Mr. Murphy took occasion to present to the Society, on behalf of His Excellency, Porfirio Diaz, Jefe Politico of Tehuantepec, a map of the State of Oaxaca, for which the thanks of the Society were directed to be returned. *Adjourned.*

#### DEPARTMENT OF GEOGRAPHY

##### MICRONESIA.

###### THE RUINS ON PONAPE, OR ASCENSION ISLAND.\*

[Dr. Latham, in his "Man and His Migrations," makes the following supposition: "If the inhabited world were one large circular island; if its population were admitted to have been diffused over its surface from some single point, and if that single point were at the same time unascertained and requiring investigation, what would be the method of our inquiries? We should ask what point would give us the existing phenomena with the least amount of migration; and we should ask this upon the simple principle of not multiplying causes unnecessarily. The answer would be—the center. From the center we can people the parts about the circumference without making any line of migration longer than half a diameter; and without supposing any one of such numerous lines to be longer than the other."]

Taking the center as it is, Dr. Latham selects six extreme points as starting places, and from there traces back the lines of migration, by physical affinities, and affinities of language, toward a common center. These six points are Terra del Fuego, Van Dieman's Land, Easter Island, which is the farthest extremity of Polynesia, Cape of Good Hope, England, and Ireland.

Of course this is pure hypothesis, and I do not quote it as having any scientific value. But it is curious that the common center of these various lines would be "somewhere in intra-tropical Asia"—near the spot toward which history and tradition point as the seat of the common origin of the human race.

Dr. Latham's imaginary line from Easter Island, runs through the Caroline and Pelow groups, to the Philippines, and thence to the south-eastern portion of the Asiatic Continent, on the Indo-Chinese Peninsula; i. e., he supposes that the Caroline Islands were peopled from the Malayan Peninsula, by way of the Philippines.

Pickering makes a suggestion regarding waves of

\* An Address by L. H. Gulick, M. D., of Micronesia, read by Rev. Jos. P. Thompson, D. D., before the American Geographical and Statistical Society on the 18th December, 1856.

migration, which may help to elucidate the difference of social culture between the islands and the main land. He says, "If the human family has had a central origin, and has gradually and regularly diffused itself, followed by the principal inventions and discoveries, the history of man would then be inscribed on the globe itself; and each new revolution obliterating more or less of the preceding, his primitive condition should be found at the furthest remove from the geographic center; as, in the case of a pebble dropped into the water, the earliest wave keeps most distant from the point of origin." (p. 291.) Our own pioneer emigration illustrates this.

As yet our data are too imperfect to warrant us in forming a theory as to the origin of Micronesians. The missionaries at the Carolines are reducing the native dialects to a written form, and will soon present us a comparative grammar, with Polynesian and Asiatic affinities. Dr. Gulick is investigating physiological characteristics, traditions, and monumental remains. Thus, while imparting a Christian civilization, they will aid the civilized world in solving great problems of history.—*Editors.*]

Ascension Island, of the Pacific Ocean, called by the native inhabitants, Ponape, is situated in lat.  $6^{\circ} 55' N.$ , and long.  $158^{\circ} 25' E.$  It is peopled by a race that no doubt migrated from the west, and most probably from the Philippine Islands. Its language has many close relations to that spoken in the western part of the Caroline range, which has been distinctly traced to the Tagala of the Philippine Archipelago. The island consists of a coral reef about eighty miles in circumference, enclosing several basaltic islands, one of which is perhaps sixty miles in circumference, and gives name to the whole group.

A thorough description and discussion of the ruins on Ascension Island, will throw much light on those similar structures that have been slightly noticed on various Micronesian Islands, and that will no doubt yet be found more widely diffused on all the high islands, and more interesting than has yet been imagined.

#### A DESCRIPTION OF THE RUINS.

The whole main island, and even the lesser ones of the slightest moment, may be said to be covered with curious stone structures, that are conveniently termed ruins, though it should not be inferred that they are necessarily in a ruinous condition. It is difficult to walk a mile, or even half that distance, in any direction, without encountering these remains of

ancient labor. They are to be found in all possible locations—along the ocean shore, and miles inland—on hills of commanding height, and in secluded vallies—on level plats, and on steep hill slopes. They are of various ages, as may be inferred from their being found in every degree of preservation, and from the varying growths of vegetation in and upon them.

A few of these ancient wonders are of earth, and these are to be found in two or three of the open spaces in the forests, where nothing grows but a short grass and a few stunted Pandanus shrubs. They consist of long, narrow mounds, from eight to ten feet in height, and about fifteen feet wide at the base.

By far the greater number, however, of these structures, are of stone; and these are of several kinds.

1. A heterogeneous class, which it is difficult to designate. Sometimes they are mere lines of stones, with no definite commencement or termination; formed often, perhaps usually, of the very largest kind of movable rocks; and of very varying heights. Sometimes, as at the mouth of the Ronkiti stream, they appear like an embankment for a road along the shore. In several of the excessively rocky parts, as on the eastern slopes of the Jekoits Island, large bodies of stone are piled up in every imaginable arrangement, forming long walks, embankments, solid squares, and irregular enclosures.

2. Scattered over every portion of the island, with the possible exception of only the mountainous central peaks, are walls arranged in squares or parallelograms, sometimes a wall within a wall, and often enclosing a pile of well laid stone, in which a small vault may generally be found.

These squares are of every size, from two or three yards, to ten or fifteen rods. The walls are of all heights, sometimes scarcely more than a continuous line of stones, and sometimes five or six feet high; and in one noted case, (that shall be particularly described in connection, with the next class of structures,) they are more than twenty feet in height. The thickness of the walls varies proportionably

with the height, from two or three, to ten feet. The materials are principally irregular basaltic rocks, occasionally basaltic prisms intermixed, and oft times coral stones fill up the interstices. In some few instances an outer wall encloses an inner. If the walls be of considerable height, an entrance four or five feet in width is almost always to be found very near the center of one of the sides. And when there is a double wall, a passage in the enclosed wall exactly corresponds to that in the outer.

In many cases near the center of the enclosed space, rather to the side farthest from the entrance, and sometimes quite in one of the remote corners, an apparently solid square of stones will be found, from 3 to 6 feet high, and from 12 to 15 feet in length and breadth, in which is a rude vault about 6 feet long, 3 to 6 feet broad, and from 3 to 5 feet deep. Long broad stones form the roof of the vault; and often, immediately before the entrance through the outer wall, an obsolete opening into the vault will be seen, which has been carefully filled up in a way that shows it was done after the original walls of the vault were built. It is sometimes impossible to find a vault in this central square, yet not often. An entrance to the vault can usually be effected with comparative ease from the top, though that is most palpably not the original intent. Human bones, far advanced in decomposition, are not unfrequently to be found in these vaults, with ornaments such as were no doubt once used by the inhabitants, and that are much like those still valued by the natives, not only of Ponape, but of most Micronesian Islands both to the east and west.

3. In one locality on the eastern shore of Ponape, at the mouth of the Metalanin Harbor, on the coral flats between the encircling reef and land, a number of artificial islets are so arranged over the space of perhaps a square mile, that the appearance is such as the submerged foundations of a modern city, with no superstructures, might present.

These are the "Ruins" first described by a sailor named O'Connell, in a small volume en-

titled his "Adventures," and spoken of in Hiale's Report on Ethnography and Philology, connected with the U. S. Exploring Expedition. So much of the irreconcilably and egregiously incorrect is mingled with O'Connell's narrative, not only regarding the ruins, but concerning everything connected with the whole island, that I shall but slightly allude to it, though it has the considerable merit of having been the first published notice of these structures.

Where these peculiar ruins are found, the distance from the land to the encircling reef is not half a mile. Coral flats, slightly higher than low water mark, occupy the whole space. Some of the islets are regular parallelograms, 50 feet and upwards in length; others are very irregularly trilateral, quadrilateral, or poly-lateral, covering in some instances several acres. They are so arranged in relation to each other, that canal-like spaces intervene, on an average perhaps 12 feet wide, through which the tide ebbs and flows. At the junction of canals or streets from different directions, they often widen out to many yards.

The unvarying structure of these islets, is an outer edging or facing of basaltic rocks, chiefly prisms, while the whole enclosed area is filled up with closely packed coral stone, to the level of the top of the basaltic wall, which is one, two, or three feet above high-water-mark. In but very few cases is this skeleton of the islets crumbled. On several of the islets there are walls of the same structure as those before described, forming enclosures, both with and without central vaults.

This whole assemblage of islets is now overgrown with vegetation. Some of the larger islets are occupied by bread-fruit and cocoanut trees; the rest, together with large portions of the canals are enshrouded with the mangrove. Till within the memory of some living, (1852,) the whole of this locality was densely populated, with the exception of the most sacred spots, and no mangroves were allowed to intrude. A few inhabitants are still to be found there.

On one of the islets, named Pankalera,

where some of the most important religious ceremonies of the tribe are several times a year performed, a sort of paved way laid with broad stones, some of them having a peculiar central depression, leads to a spot peculiarly sacred, over which a small shed is erected. Near by are several low walls forming more or less decided squares, at different points of which religious ceremonies are at stated seasons performed. There are several other sacred islets where ceremonies are at times celebrated, and where low walls or pavements can be seen by those who dare venture in. In the canals at several different places, are stones of peculiar shapes, one of which is called a turtle, one an ear ornament, one a wooden trough, and one an instrument for pounding food, all which are connected with mythological tales.

I will not more particularly notice any of the islets save that one named *Nantooj*, the most singular and astonishing one of the whole number, from the structures erected upon it. It was the structures on this one islet alone that were briefly and accurately described by the Rev. Mr. Clark, and for the first time delineated by Mr. J. T. Gulick, in the "Friend," of Dec. 17, 1852, Honolulu, Sandwich Islands. I copy a description of them, written by Mr. J. T. Gulick, Oct. 1852, and ultimately laid before the American Geographical and Statistical Society.

"They present a front of 160 feet, and are over 250 feet in length from east to west, occupying a little islet about an acre in extent. The foundation platform, which consists of coral stones with a basaltic facing, rises about eight feet above low-water-mark. On the west side, the walls, which are about 20 feet high, are placed back from the edge of the foundation works, leaving a platform 15 feet wide; but on each of the other sides, the face of the wall corresponds with that of the buttress, presenting a perpendicular front 28 feet above the water.

"Except on the front, or western end, the walls are not only over-topped by large trees, but are even buried in the green foliage of ferns

and bushes, and long hanging vines. They appear quite perfect, except in one place on the north side, where, for the space of a rod or two, the wall has given way on the inside, though the outer face is perfect, and also on the north side western entrance. A broken place in the platform on the front side affords an easy ascent, and an entrance 15 feet in width opens through the walls to the structures within.

"At this place we entered and spent two hours or more in exploring the vaults, measuring the walls, and securing specimens of the prismatic formations, which are almost the only kind of stone found in the walls. Many of the prisms are over 10 feet in length, having five, six, and seven sides—the five sided ones being the most abundant. One that we measured was 18 feet in length, and about 2 in diameter, having six sides. In constructing the walls the stones of one tier have been laid parallel with the line of the wall, and those of the next transversely. The smallest prisms were 3 or 4 inches in diameter.

"Within the outer bulwarks is another enclosure, with 75 feet front and 95 feet depth. It has a foundation platform of its own, on which its walls and the main central vault was built. This platform is 8 feet above the main foundation on which the outer walls stand, and is 100 feet broad, by 127 feet long, which leaves a walk around the enclosure 20 feet wide on the eastern side, and 12 feet wide on the other sides. This wall rises 10 or 12 feet above the platform which leaves the top but a foot or two lower than that of the outer walls.

"The lower part of the outer wall is 18 feet thick on the west side, and 14 feet on the other sides; but at a height corresponding with that of the foundation of the inner enclosure, the wall is narrowed, leaving a walk 8 feet wide around the inner side. Above this, the walls are 10 feet thick in front, and 6 feet on the other sides. Besides the wide entrance on the west side, there is a little passage about 5 feet wide and 4 feet through the wall on the south, and a similar one on the north side.

"The inner walls are built on the same plan

as the outer ones—the lower part being ten feet thick, and the upper but five. They are, however, finished differently at the top, for the last two or three courses of stones jut beyond the face of the wall, forming a cornice about 2 feet wide on the outer side. The entrance is on the west side, directly in front of the first one, and of about the same width. In the center, is a pile of stone work 12 paces square at the bottom, and 8 or 9 feet in height. Two surrounding platforms, each a yard in width, divide the ascent to the top into three steps. The top is about 24 feet square. Within this structure is a vault; and in the west side, directly in front of the gateway, there seems to have once been a doorway leading into it, which is now strongly blocked up. A narrow entrance has, however, been opened at the top, through which we descended, and found ourselves in a dark cell 8 feet deep, and 11 by 10 feet in length and breadth. The only light that reached us entered through the cracks between the long prisms laid across overhead. The foreigners told us that coral stones once formed a pavement on the floor of the vault, but within 10 or 15 years they have been torn up by visitors searching for relics. They say that in 1838, Capt. Chas. Coffin, of the ship *Ohio*, Nantucket, and Capt. E. B. Sherman, of the *Marcus*, Fairhaven, visited the vaults together, and took from it several human bones of gigantic size.

“We entered two other vaults, which were outside of the inner walls in the foundation platform, and not marked by any building above—one on the north and the other on the south side. We were told that Mr. Dudoit, who is now in the Sandwich Islands, took two silver crucifixes from the vault on the south side. Besides the vaults we entered, there is one outside of the inner wall, on the east side. We were told of ten others, but their existence is very problematical.”

It is only necessary to add to the above description, that about the islet, on its seaward, north-eastern aspects, are several low enclosing walls, one without the others at varying distances, the outermost of which is distant from

the islet perhaps 600 feet, and runs so close to the edge of the flats that a vessel might almost ride alongside of it.

#### THE BUILDERS OF THESE STRUCTURES.

I unhesitatingly acquiesce in the opinion of the Rev. Mr. Clark, of the Sandwich Islands, and of Mr. Hale, of the U. S. Exploring Expedition, that none but an uncivilized race of people built these various structures on Ponape. The idea that buccaneers, or Spaniards of any character, erected any part of them, is the result of a pure exercise of an undisciplined imagination. It is palpable that the race who built any portion of these structures, built the whole;—if Spaniards built any, they built all. And more, if Spaniards built any of these Ponape wonders, they also built all those that are to be found on, probably, every “high” island of Micronesia,—those certainly on Kusaia, (*Ualan*, or *Strong’s Island*,) on *Yap*, and even on *Tinian*. Whatever may be reported in print by Capt. Fisher, (as found in the “*Annual of Scientific Discovery*” for 1853, quoted from the “*Vineyard Gazette*,”) and verbally by others, of a splendid modern “city” in ruins on *Tinian* of the *Ladrone Islands*, we must, till their reports are very much more fully confirmed, continue to deem those structures nearly allied in character and origin to all that have yet been discovered in Micronesia—evidently the handiwork of a numerous, active, architectural, but uncivilized race. Even *D’Urville*, in his description of the ruins on *Strong’s Island*, utters not a suspicion that civilized talents were demanded for their erection.

But it will be sufficient to confine our attention to the ruins on Ponape. We well know the general character of structures Spaniards would have erected during any portion of the centuries they have more or less actively navigated these seas. How different they would have been from anything we find on *Ascension Island*, need not more than be alluded to. The silver crucifixes, and the Spanish dollars found in one of the vaults at *Nantoaj*; with a pair of silver dividers, and a brass cannon, found long since on the south side of the island; together

with the tradition that a boat's crew once landed there with skins (probably coats of mail) so thick, the only mode of killing them was to pierce their eyes, only prove that Spaniards, or people like them, have been here. It is now three centuries since the Spaniards discovered Guam. It immediately became their "half-way house" between their South American colonies and East Indian Possessions. For more than two centuries they traversed these seas most actively, and Queroza probably discovered this very island in 1595. It would have been passing strange had none of them ever stranded on this island, and so brought the few relics found.

But again—it seems to me as certain that it was the ancestors of the present race, as that it was not Spaniards, who built these Ponapean structures.

The present race are fully competent to everything found, and are most intimately connected with them by traditions and religious customs. Why, then, multiply causes, when the one most palpable, and immediately before us, is more than sufficient?

But it is objected that the present race is not competent—that the inhabitants are too few, too indolent, and have no capacity or talent for such labors. That they are at present too few and feeble is undoubted. They now number on this island about 5,000. Yet, three years since, there were not far from 10,000, and twenty years since there were probably twenty or twenty-five thousand; and a century since, it is probable, from traditions, that their numbers were even still greater. They are now divided into five tribes, but it is certain, from well expressed tradition, that this is but a modern division.

That they are too indolent is equally true at the present time. But they were not always thus. The depressing and enervating influences of tobacco, and ruin, and foreign disease, take the life out of every people, and are most palpably doing so to this people year by year. There is the most positive evidence that in other departments of labor, the degeneracy of this people is even more marked than in that

of building with stone. Their canoes, and houses, and various utensils of past times, if now seen, would scarce be supposed to be formed by the present race.

That the present inhabitants have no talent or taste for laying stone, is quite a mistake. They lay stone quite admirably. The foundations of their houses to this day are of stone. They are of course laid by the eye, yet the angles are square, and the faces plumb where any care is exercised. They are, most emphatically, to this day, a stone-laying people; perhaps even as much so as the inhabitants of Strong's Island, who, till very recently, rebuild the walls about a chief's house on the death of any member of his family.

Two large buildings have been erected on this island within three years, that serve much to correct the notion that this people, when much more numerous, and when united under one head, could not have built even the most enormous of the structures now found of ancient dates. One was a building 60 feet long, by 40 feet wide, on a solid foundation 4 feet high, erected by the Nanakin of the Kiti tribe. The other was also a private residence built by the then King of the Metalanim tribe in the northern limits of his tribe. It has a double foundation; the first is a solid platform of stone, 100 feet by 30, and 8 feet high. The second foundation is a second solid platform, built on top of the first, 30 feet long, 20 feet wide, and 8 feet high.

The following extract from the Rev. Mr. Doane's Journal, while natives were engaged in laying a Ponape foundation of his house on Je-koits, is testimony exactly to the point:—"I was not a little interested with the earnestness with which they worked. Surely, if there were fifteen or twenty thousand natives on the island, they could accomplish any piece of work they undertook. The way in which especially the stones, very large ones, were laid hold of and brought to the place, suggested to my mind a sufficient explanation of the structure of the large ruins on this island. Supposing at some past time the population may have been 20,000,

and this large number controlled by religious zeal, and powerful, ambitious chiefs,—I think from the way natives to-day took hold of the large stones, requiring five or six men to carry one, the work on these ruins can readily be accounted for. All that is needed is some powerful will to command.”\*

It is also objected that this people have no knowledge of the builders of these structures—have no traditions concerning them; that they have nothing whatever to connect them with the ruins themselves. This objection is founded on as total misapprehension as the first.

They have many traditions concerning them. They unhesitatingly say the “ani” built them; and Hale most correctly conjectures that “when the natives say these structures were raised by ‘han’ or ‘animan,’ (spirits), they may be merely referring them to their ancestors, the actual builders.” They not only “may be” but most certainly are. It is true that some of their “ani,” or spirits, are self-existent, but the great mass, and those that receive the most immediate worship, are but deceased ancestors; and every person, of every age, and grade, immediately after death, and before burial, is termed an “ani.” I will reserve to another paper a detailed notice of some of the most interesting of these traditions.

There are not however only traditions connected with these ruins, but a large number, if not all, of the stated religious ceremonies are connected with them, and are performed in or by them. As has been already remarked, several points among the islets at Matalanim, including the celebrated *Nantaoj*, are places of worship at various different seasons of the year; and are so sacred that the mass of the common natives do not to this day enter their more

\* Says the Rev. Mr. Sturges, in *The Journal of Missions*, August, 1855:—“Some have supposed these walls were for defence, and that they were the work of a more civilized people than now live here. I see no necessity for either, as the whole would seem to be of use in the religious rites of the present natives; and there is nothing about them requiring any more skill than is found among this people. The only thing wonderful is, that so much labor should have been performed without machinery.”

*tabu* parts, unless in the convoy of a missionary, and even then but few of them, and with hesitancy. So also of many places in all parts of the island.

THE OBJECTS FOR WHICH THESE STRUCTURES WERE BUILT.

It might well be conjectured that such a stone laying people might employ stones for various different objects, on an island where this material so abounds; and the differing appearances of the ruins, confirm the idea.

1. The long, apparently aimless, lines of stones, may have been to form substantial paths, and perhaps to preserve the land on the declivities from being washed away; and a secondary purpose may have been to partially rid the cultivated land of the stones. This last seems to be the more palpable intent of the irregular stone piles in some of the more rocky parts. On a smaller scale, it is to this day performed by the inhabitants of those localities, so as to employ to advantage the little earth found between the rocks. Stone walls of this character are to be found in some of the rocky portions of the Sandwich Islands, and probably other South Sea Islands. In a few cases, the attempt at a rude wharf can be detected, alongside of which, at high tides, canoes do to this day lay with advantage.

2. The enclosed spaces, with vaults, were, without a doubt, places of sepulture, the vaults being tombs. The natives readily acknowledge this. Often human bones, not fully decayed, may be found in the vaults; from which it is evident bodies were deposited in them at no very remote period; for bodies laid comparatively exposed like these, could not many years remain in such a humid climate as this. The vaults on the *Nantaoj* islet were the places of sepulture for the highest chiefs of the tribe, till since the residence of foreigners on this island. They have only ceased to be tombs since the natives learned to fear the intrusive Yankee. It is by no means to be supposed that entombing was in ancient times the only mode of disposing of the dead; for it was probably the more noted chiefs and priests alone that were



thus honored. This mode of honoring the dead has been gradually less and less resorted to, till now it is discontinued.

The quadrangular walls without vaults, may possibly some of them have been the boundaries of special lots, gardens, or family inheritances; but some of them, we have good evidence, enclosed places of burial, which will incline us to view them all as marking burial places. Some such places are still most sacred, and religious services are performed in connection with some of them. Some of the structures on the islet Pankatera, where chiefs have undoubtedly been buried in graves or concealed vaults, are of this nature.

I have not, on this remote island, the requisite books for verifying any conjectures, but I am strongly impressed with the idea that structures of the general character mentioned under this head, are to be found on many of the Polynesian Islands. Ancient ruins, conjectured to be tombs, are found on the Tonga or Friendly Islands. (Latham's Nat. Hist. of the Varieties of Man.) Many of the sacred enclosures on the Society Islands were mere parallelograms enclosing sacred houses. (Ellis' Polynesian Researches, Vol. 1.) And the "*heiaus*" of the Sandwich Islands were certainly of this general character. The idea of sepulture may have become disconnected from such structures before the race reached those most eastern islands, while yet the style of building was retained.

3. The islets near the mouth of Metalanim Harbor are, I think, the result of a taste for residences in very close proximity to the sea, and probably the high chiefs of the whole island once resided near each other in this miniature Venice. The chiefs of Strago Island to this day tend to congregate on the small island in their weather harbor, where the structures are in some degree insular and submerged, as here. The common taste for such "marine" cities, will probably yet be traced to habits in the "fatherland," from which they diverged. It is palpable, also, that the labor of erecting such structures, are greatly less from being close to, or in, the ocean. The prisms of which these

ruins are built, must have been brought from the northern aspects of the island—distances of from eight to fifteen miles.

The quadrangular walls, with and without vaults, together with any other superstructures, were probably added to some of the islets on the decease of the prominent residents. If any prefer, however, it would not be an eccentric theory to suppose the islets employed as places of burial were specially built for that very purpose, and that the others grew around them as about central points.

The walls running along the N. E. aspect of this vicinity, and extending to the edge of deep water, seem very probably to have been a barrier against the heavy swell of the N. E. trade winds.

It is interesting to remark, that one of the most regular of the islets, standing quite by itself in a very central locality, is reported to have been the site of a large feast house, and that a few years since, the inhabitants of the Jekoits tribe took the measure of it, and built a feast-house on the Jekoits Island, of exactly the same size.

This submerged locality may, even to this day, be considered the head-quarters of the whole island. More important ceremonies are performed here than anywhere else, and many of the performances in other places have some reference to those here. The chiefs and priests of this tribe are to this day the most bigoted, and are the rallying points of the island's crumbling heathenism.

Mr. Hale's suggestion, that the island of Ponape has undergone "a slight depression" since these structures were erected, seems, on inspection, to be no ways probable. The foundations of these islets are laid on the coral reef that rises an inch or two above the very lowest stage of the tides. To those acquainted with the entire reliance of this people upon canoes, even to this day, as vehicles for moving for even the shortest distances, it seems not at all improbable, that in building anything extensive, a submerged locality should be selected.

I hazard no special remarks on the objects

of the long mound, as I have not had opportunities for sufficiently examining the two or three known to exist. From what I have seen, and from tradition, I judge them to be connected with the noble "dead"—the "ani."

#### CALIFORNIA, OREGON, WASHINGTON.\*

That province of Spain, known on the old maps as California Alta, was discovered in the year 1542, by Juan Rodriguez Cabrillo. In 1697 it was granted, in common with California Baja, by Charles II, of Spain, to the Jesuits, in the hope that the disciples of Loyola might subdue by the cross those hostile tribes the colonists had failed to subdue by the sword.

But these men, though nominally the possessors of the country, never entered upon their labors within its proper limits. True, they had several stations in California Baja, and there had in a great measure ingratiated themselves into the affections of the aboriginal races, and partially accomplished their mission of civilization. The edict for their banishment from America, however, was signed, and in 1769 they were totally banished from the soil which, by their energy, wisdom, and foresight, had been made habitable for a superior race.

In the same year, Spain took military possession; but, not unmindful of the religious welfare of the natives, sent with her armies into the new country many priest-missionaries of the Franciscan order, who settled at the military presidios, and established the first churches in the wilderness. In this way the missions of Monterey, San Diego, etc., were commenced. By 1798, eighteen of these missions were in full operation, confined almost entirely to the coast and the coast valleys—it being the policy of the fathers to withdraw the tribes from their hunting and fishing grounds, and collect them at such convenient centers as would best promote the objects in view.

These objects appear to have been to bring the native tribes under Christian instruction,

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and to train them to agricultural and other industrial pursuits. For this purpose the very best sites were selected, combining fertility of soil, facilities for irrigation, and access to some harbor or landing place for the exchange of such products as the good of the several missions might require. To carry out those objects, something like force is said to have been resorted to. When the prospect of gratuitous supplies from the teachers failed to bring in the tribes, forays are said to have been made upon their villages by the soldiery, (always kept by each mission for its protection,) by which hundreds of men, women, and children, were driven in like captives within the mission enclosures, where they were summarily baptized and indoctrinated into the mysteries of the Roman faith. This, however, was but going out into the highways and hedges, and compelling them to come in, and was in perfect keeping with the spirit of their church, and with their modes of proselyting savage and heathen tribes both on the Asiatic and American continents.

It must be said, however, that the fathers of those missions were apparently worthy and devoted men, pursuing their work with the good of the savage tribes in view. They have left behind them many monuments of their industry and piety, their forethought, and their good taste. The size and style of their cathedrals, most of which still survive; the number and arrangement of the houses for the Indians; the extent and excellence of their improvements in agriculture and horticulture; in orchards, vineyards, groves of olives, and shaded causeways—some of which are, to this day, the best in California—all sustain their reputation for intelligence, and private and social worth. While they had control, the missions they established seem to have been kept to their legitimate objects.

But a change came over them. This occurred in 1824, when California became a province of Mexico, and the missions passed from the superintendence of the Spanish to Mexican priests. Then, from spiritual, they gradually became purely secular. The padres became proprie-