

**MAUKA/MAKAI**

MA·U·KA [MAH-OO-KUH]

**adverb** Hawaii  
toward the mountains; inland

**Origin:**  
Hawaiian, equivalent to ma—directional particle + uka inland, upland

MAUKA/MAKAI

On Hawai’i’s irregular islands, where shore and mountains rarely line up with any directional consistency, the native concept of “mauka to makai”—mountains to ocean—keeps things organized. The Hawaiians apportioned the land into pie-shaped slivers that begin mauka in high mountain valleys and generally follow streams and their widening chasms makai: toward the coast.

Through her collection of photographs, Hawaii born-and-raised photo enthusiast, Cassy Song, takes us along a contrasting journey through Mauka/Makai.



© 2013 Cassy Song

All rights reserved. No part of this publication may be reproduced, stored in a retrieval system, or transmitted in any form or by any means, electronic, mechanical, photocopying, recording, or otherwise, without prior consent.

Project editor: Cassy Song  
Image post-production: Cassy Song

Design by  
Cassy Song  
Kapiolani Community College  
New Media Arts, Interface Design  
Honolulu, HI

2011 2012 2013 /  
10 9 8 7

Printed in the US

LLN-13: 4-8-15-16-23-42

Control Number: 4815162342

06	INTRODUCTION
08	THE ISLAND
16	A MILLION PASSING YEARS
22	THE MASTER CYCLE
30	SLEEPING IN THE SUN
36	AN AUTHENTIC PARADISE

▲  
INTRODUCTION

---

Though similar in their geologic history, each of the Hawaiian Islands bears a unique fingerprint with special places of its own. From the northernmost point of the island of Kauai to the southern coast of the Big Island, nature's forces have created and shaped each island with marvelously stunning landscapes. Collectively, the islands in the chain offer some of the most magnificent ecosystems in the world, and a showcase of these "works of natural art" reveals the diverse natural paradise that exists from one island to the next.

Mountain rains, waterfalls and streams weave their way freely all the way to the sea, where in time the water evaporated and was released over the mountains to clouds, and so in cycle keep the mountains lush, the plants blossoming and people well fed. Nature is so abundant in its simplicity. ▲



# 01/ THE ISLAND

Before life could prosper on this island, soil was needed, and as yet none existed. When molten lava burst upon the air it generally exploded into ash, but sometimes it ran as a viscous fluid down the sides of mountains, constructing extensive sheets of flat rock. In either case, the action of wind and rain and cooling nights began to pulverize the newly born lava, decomposing it into soil. When enough had accumulated, the island was ready.

The first living forms to arrive were inconspicuous, indeed almost invisible, lichens and low types of moss. They were borne by the sea and by winds that howled back and forth across the oceans. With a tenacity equal to that of the island itself these fragments of life established themselves, and as they grew they broke down more rocks and built more soil. At this time there existed, on the distant continents visited by the ocean, a well-established plant and animal society composed of trees and lumbering animals and insects. Some of these forms were already well adapted for life on the new island, but were prevented from taking residence by two thousand miles of open ocean.

Consequently, there began an appalling struggle. Life, long before man's emergence, stood poised on distant shores, pressing to make new exploratory journeys like those that had already populated the existing earth with plants and animals. But against these urgent forms stood more than two thousand miles of turbulent ocean, storm-ridden, salty, and implacable.

The first sentient animals to reach the island were of course fish, for they permeated the ocean, coming and going as they wished. But they could not be said to be a part of the island. The first non-oceanic animal to visit was a bird. It came, probably, from the north on an exploratory mission in search of food. It landed on the still-warm rocks, found nothing edible, and flew on, perhaps to perish in the southern seas.

A thousand years passed, and no other birds arrived. One day a coconut was swept ashore by a violent storm. It had been kept afloat on the bosom of the sea by its buoyant husk, traveling more than three thousand miles from the southwest, a marvel of persistence. But when it landed, it found no soil along the shore and only salt water, so it perished, but its husk and shell helped form soil for those that would come later.





## “SHE WAS BORNE ALOFT TO THE HEIGHT OF TEN THOUSAND FEET...”

The years passed. The sun swept through its majestic cycles. The moon waxed and waned, and tides rushed back and forth across the surface of the world. Ice crept down from the north, and for ten thousand years covered the islands, its weight and power breaking down rocks and forming earth.

The years passed, the empty, endless, significant years. And then one day another bird arrived on the island; also seeking food. This time it found a few dead fish along the shore. As if in gratitude, it emptied its bowels on the waiting earth and evacuated a tiny seed, which it had eaten on some remote island. The seed germinated and grew. Thus, after the passage of eons of time, growing life had established itself on the rocky island.

Now the passage of time becomes incomprehensible. Between the arrival of the first, unproductive bird, and the second bearing in its bowels the vital seed, more than twenty thousand years had elapsed. In another twenty thousand years a second bit of life arrived, a female insect, fertilized on some distant island on the night before a tremendous storm. Caught up in the vast winds that howled from the south, she was borne aloft to the height of ten thousand feet and driven northward for more than two thousand miles to be dropped at last upon this new and remote island, where she gave birth. Insects had arrived.

The years passed. Other birds arrived, but they bore no seeds. Other insects were blown ashore, but they were not females, or if they were, not pregnant. But once every twenty or thirty thousand years—a period longer than that of historic man—some one bit of life would reach the island, by accident; and by accident it would establish itself. In this hit-or-miss way, over a period of time that the mind can barely digest, life populated the island.

One of the most significant days in the history of the island came when a bird staggered in from some land far to the southwest, bearing in its tangled feathers the seed of a tree. Perched upon a rock, the bird pecked at the seed until it fell away, and in the course of time a tree grew. Thirty thousand years passed, and by some accident equally absurd, another tree arrived, and after a million years of chances, after five million years of storms and birds and drifting sea-soaked logs bearing snails and borers, the island had a forest with flowers and birds and insects.



---

THE ISLAND HAD RISEN TO  
ITS BEAUTY LONG BEFORE  
THE AGE OF MAN...







Nothing, nothing that ever existed on this island reached it easily. The rocks themselves were forced up fiery chimneys through miles of ocean. They burst in horrible agony onto the surface of the earth. The lichens that arrived came borne by storms. The birds limped in on deadened wings. Insects came only when accompanied by hurricanes, and even trees arrived in the dark belly of some wandering bird, or precariously perched upon the feathers of a thigh.

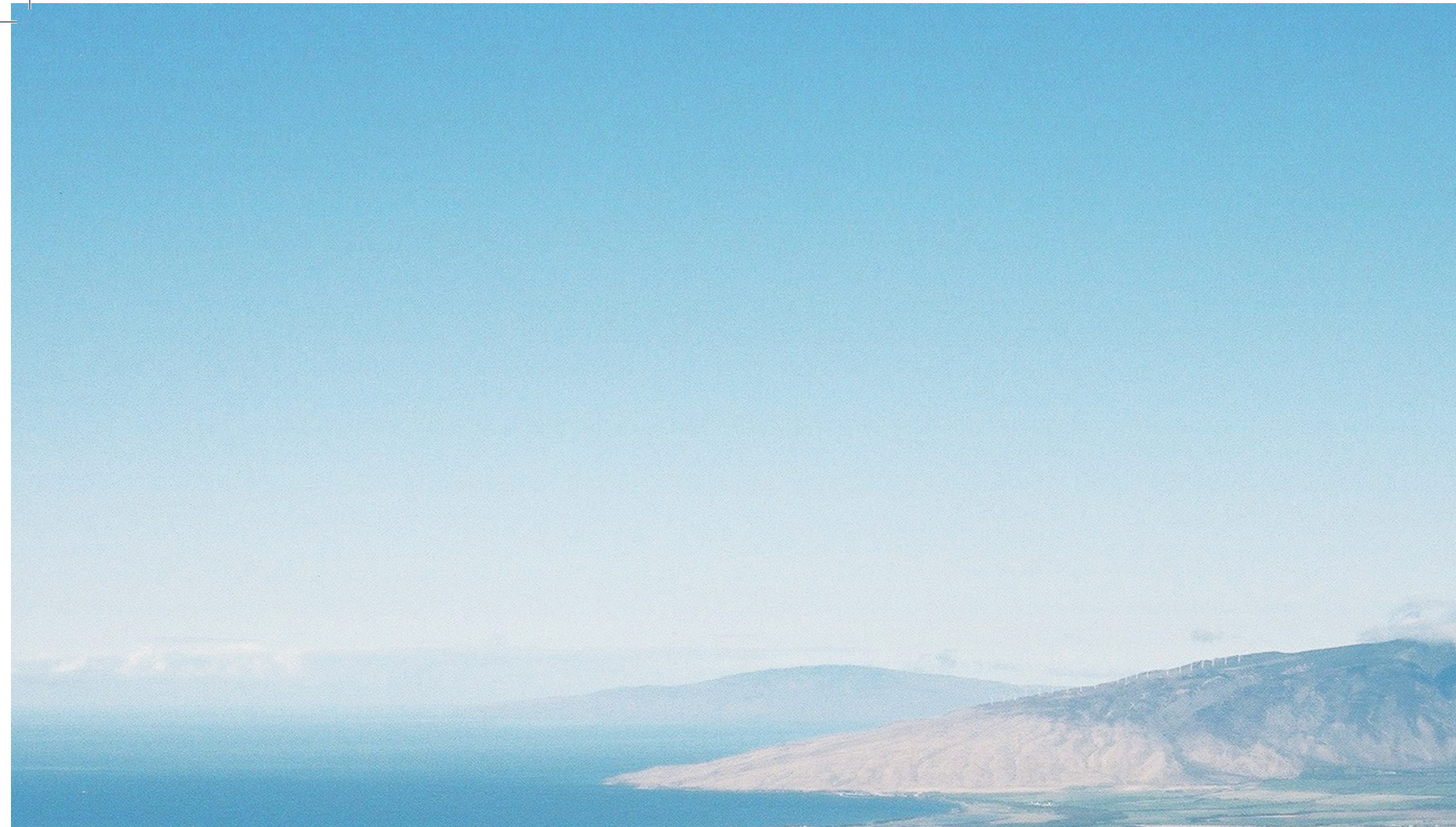
Timelessly, relentlessly, in storm and hunger and hurricane the island was given life, and this life was sustained only by constant new volcanic eruptions that spewed forth new lava that could be broken down into life-sustaining soil. In violence the island lived, and in violence a great beauty was born.

The shores of the island, weathered by the sea, were stupendous cliffs that caught the evening sun and glowed like serrated pillars of gold. The mountains were tall and jagged, their lower levels clothed in dark green trees, their upper pinnacles shod in ice, while the calm bays in which the grandeur of the mountains was reflected were deeply cut into the shore. Valleys and sweet plains, waterfalls and rivers, glades where lovers would have walked and confluences where towns could have been built, the lovely island had all these accouterments, these alluring invitations to civilization.

But no man ever saw them, and the tempting glades entertained no lovers, for the island had risen to its beauty long, long before the age of man; and at the moment of its greatest perfection it began to die. In violence it had been born; in violence it would die.

There was a sudden shudder of the earth, a slipping and a sliding, and when the readjustment was ended, covering a period of thousands of years, the island had sunk some twelve hundred feet lower into the ocean, and ice nevermore formed upon its crests. The volcanoes stopped, and no new lava poured forth to create new soil to replace that which had sunk into the sea. For a million years winds howled at the hills, the ocean gnawed away at the ramparts. Year by year the island withered and grew less. It began to shred away, to shatter and to fall back into the ocean from which it had sprung. ▲





## 02/ A MILLION PASSING YEARS

A million years passed, and then a million more, and the island which had grown so patiently at the northwest tip of the great crack in the ocean floor slowly, slowly vanished. The birds that had fed upon its hills went elsewhere, bearing in their bowels new seeds. From its shore fertilized insects were storm-blown to other islands, and life went on. Once every twenty or thirty thousand years some fragment of nature escaped from this island, and life went on.

But as the island subsided, a different form of life sprang into increased activity. In the warm, clear, nutritious waters that surrounded the shores, coral polyps began to flourish, and slowly they left behind them as they died their tiny calciferous skeletons, a few feet below the surface of the sea. In a thousand years they built a submerged ring around the island. In a thousand more they added to its form, and as the eons passed, these tiny coral animals built a reef.



Ice melted in the north, and the coral animals were drowned in vast weights of unexpected water. The seas changed temperature and the animals died. Torrents of rain poured down from island hills and silted up the shoreline, strangling the tiny coral. Or new ice caps formed far to the north and south, puffing water away from the dying island. Then the coral were exposed and died at once.

Always, like everything to do with this island, throughout its entire history, the coral lived precariously, poised between catastrophes. But in the breathing space available, the coral built. And so it was that this tiny animal, this child of cataclysm, built a new island to replace the old as it gradually wore itself away and sank into the sea.

How terrible this passage of life and death! How meaningless that an island that had been born of such force and violence, that had been so fair upon the bosom of the great ocean, so loved of birds, so rich in trees, so willing to entertain man, should he ever arrive... how wasteful it was that this island should have grown in agony and died in equal agony before ever a human eye had seen its majesty.

Across a million years, down more than ten million years it existed silently in the unknown sea and then died, leaving only a fringe of coral where sea birds rest and where gigantic seals of the changing ocean play. Ceaseless life and death, endless expenditure of beauty and capacity, tireless ebb

and flow and rising and subsidence of the ocean. Night comes and the burning day, and the island waits, and no man arrives. The days perish and the nights, and the aching beauty of lush valleys and waterfalls vanishes, and no man will ever see them. All that remains is a coral reef, a calcium wreath on the surface of the great sea that had given the island life, a memorial erected by the skeletons of a billion billion billion little animals.

While this first island was rising to prominence and dying back to nothingness, other would-be islands, stretching away to the southeast, were also struggling to attain brief existence followed by certain death. Some started their cycle within the same million years as did the first. Others lagged. The latest would not puncture the surface of the sea until the first was well into its death throes, so that at any moment from the time the first island began to die, man, had he then existed, could have witnessed in this two-thousand-mile chain of islands every sequential step in the process of life and death. Like an undulating wave of the sea itself, the rocky islands rose and fell; but whereas the cycle of an ocean wave is apt to be a few minutes at the most, the cycle of the rising and falling of these islands was of the nature of sixty million years.



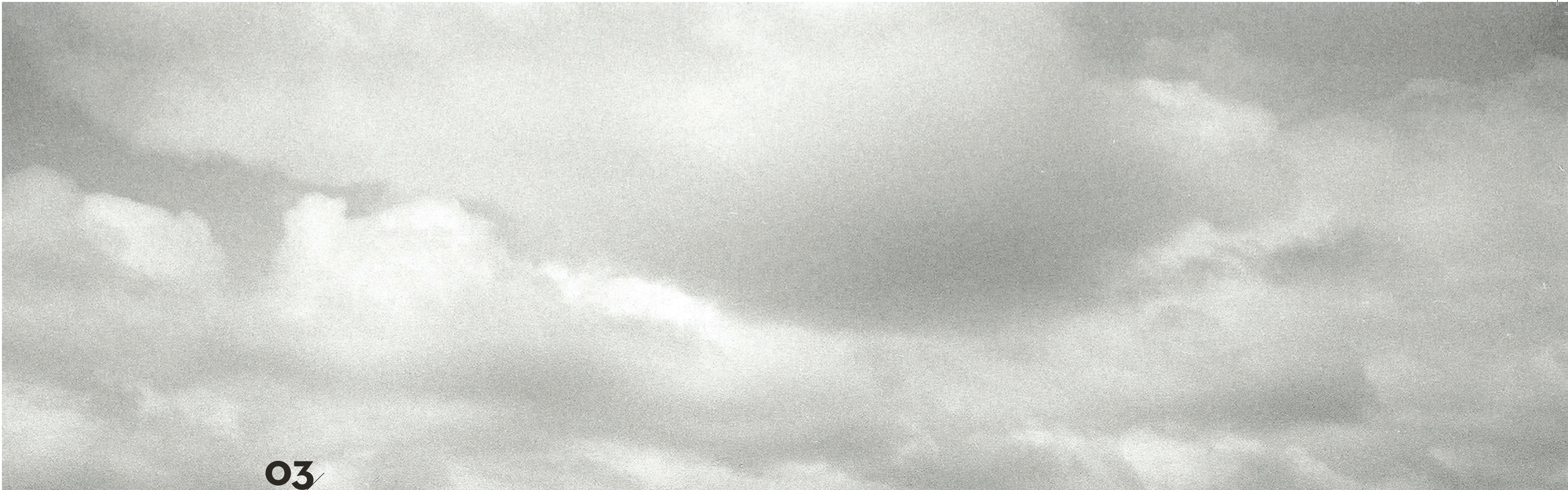




Each island, at any given moment of time, existed certainly and securely within that cycle: it was either rising toward birth and significance, or it was perishing. I do not mean that man, had he been able to witness the cycle, could have identified which part of the cycle a given island was in; there must have been periods of millions of years when no one could have ascertained that condition. But the impersonal, molten center of the earth knew, for it was sending that island no new supplies of lava. The waiting sea knew, for it could feel the cliffs falling into its arms a little more easily. And the coral polyps knew, because they sensed that it was now time to start erecting a memorial to this island which would soon be dead... that is, within twenty or thirty million years.

Endless cycle, endless birth and death, endless becoming and disappearing. Once the terrifying volcanic explosions cease, the island is already doomed. Peace and calm seas and the arrival of birds bearing seeds are pleasant to experience, but the residence of beauty is surely nominated for destruction. A song at night of insects, the gentle splash of surf against the sand, and a new ice age is beginning which will freeze out all life. Limitless cycle, endless change. ▲





# 03 THE MASTER CYCLE

Toward the end of the master cycle, when the western islands were dying and the eastern were abuilding, a new volcano pushed its cone above the surface of the ocean, and in a series of titanic explosions erupted enough molten rock to establish securely a new island, which after eons of time would be designated by men as the capital island of the group. Its subsequent volcanic history was memorable in that its habitable land resulted from the wedding of two separate chains of volcanoes.

After the parent volcano had succeeded in establishing an island, its mighty flanks produced many subsidiary vents through which lava poured; whereupon a greater volcano, separated from the first by miles of ocean, sprang into being and erected its own majestic construction, marked by an equal chain of events.

For eons of time the two massive volcano systems stood in the sea in fiery competition, and then, inevitably, the first began to die back, its fires extinguished, while the second continued to pour millions of tons of lava clown its own steep flanks. Hissing, exploding, crackling, the rocks fell into the sea in boundless accumulations, building the later volcano ever more solidly, ever more thickly at its base on the remote floor of the ocean.



In time, sinking lava from the second master builder began to creep across the feet of the first, and then to climb its sides and finally to throw itself across the exposed lava flows that had constituted the earlier island. Now the void in the sea that had separated the two was filled, and they became one. Locked in fiery aims, joined by intertwining ejaculations of molten rock, the two volcanoes stood in matrimony, their union a single fruitful and growing island. Its soil was later made from dozens of smaller volcanoes that erupted for a few hundred thousand years, then passed into death and silence. One exploded in dazzling glory and left a crater looking like a punch bowl. Another, at the very edge of the island, from where it could control the sea approaches, left as its memory a gaunt headland shaped like a diamond.

When the island was well formed--and what a heavenly, sweet, enchanting island it was—some force of nature, almost as if by subtle plan, hid in its bowels a wealth of incalculable richness. It could not be diamonds, because the island was two hundred fifty million years too young to have acquired the carboniferous plant growth that produced diamonds. It could not be either oil or coal, for the same reason. It wasn't gold, for neither the age nor the conditions required for the building of that metal were present on this island. It was none of these commonly accepted treasures, but it was a greater.

The volcanic basalt from which the island was built was porous, and when the tremendous storms which swept the ocean struck the island, the waters they disgorged ran partly out to sea in surface rivers, seeped partly into the heart of the island. Billions of tons of water thus crept down into the secret reservoirs of the island.

They did not stay there, of course, for since the rock was porous, there were avenues that led back out to sea, and in time the water was lost. But if any animal—a man perhaps—could penetrate the rocks, he could intercept the water and put it to his use, for the entire island was a catchment; the entire core of the island was permeated with life-giving water.

But that was not the special treasure of this particular island, for a man could bore into almost any porous rock on any island, and catch some water. Here, on this island, there was to be an extra treasure, and the way it was deposited was something of a miracle.

When the ice came and went, causing the great ocean to rise, when the island itself sank slowly and then rebuilt with new lava—when these titanic convolutions were in progress, the south shore of the island was alternately exposed to sunlight or buried fathoms deep in ocean. When the first condition prevailed, the exposed shore was cut by mountain streams which threw their debris across the plain, depositing there claylike soils and minute fragments of lava. Sometimes the sea would wash in bits of animal calcium, or a thundering storm would rip away a cliff face and throw its remnants over the shore. Bit by bit, over a hundred thousand years at a time, the shore accumulated its debris.





**THE TWO VOLCANOES  
STOOD IN MATRIMONY, THEIR  
UNION A SINGLE FRUITFUL  
AND GROWING ISLAND...**







Then, when next the ocean rose, it would press down heavily upon this shelving land, which would lie for ages, submerged under tons of dark, green water. But while the great brutal ocean thus pressed down hydraulically, it at the same time acted as a life-giving agent, for through its shimmering waves filtered silt and dead bodies and water-logged fragments of trees and sand. All these things, the gifts both of land and sea, the immense weight of ocean would bind together until they united to form rock.

Cataclysmically the island would rise from the sea to collect new fragments washed down from the hills, then sink beneath the waves to accumulate new deposits of life-building slime. But whenever the monstrous ocean would beat down heavily upon the shore for ten thousand years at a time, new rock was formed, an impermeable shield that sloped down from the lower foothills and extended well out to sea. It was a cap rock, imprisoning in a gigantic underground reservoir all that lay beneath it.

What lay trapped below, of course, was water. Secretly, far beneath the visible surface of the island, imprisoned by this watertight cap of rock,

lay the purest, sweetest, most copious water in all the lands that bordered upon or existed in the great ocean. It lay there under vast pressure, so that it was not only available, should a man deduce its secret hiding, but it was ready to leap forth twenty or thirty or forty feet into the air, and engulf with life-giving sweetness any man who could penetrate the imprisoning rock and set it free. It waited, an almost inexhaustible supply of water to sustain life. It waited, a universe of water hidden beneath the cap rock. It waited. ▲





# O4/ SLEEPING IN THE SUN

Raw, empty, youthful islands, sleeping in the sun and whipped by rain, they waited.

Since, when they were finally discovered, they were destined to be widely hailed as paradises, it is proper to study them carefully in their last, waiting moments, those sad, sweet, overpowering days before the first canoes reached them.

They were beautiful, that is true. Their wooded mountains were a joy. Their cool waterfalls, existing in the thousands, were spectacular. Their cliffs, where the restless ocean had eroded away the edges of great mountains, dropped thousands of feet clear into the sea, and birds nested on the vertical stones. Rivers were fruitful. The shores of the islands were white and waves that washed them were crystal-blue. At night the stars were close, great brilliant dots of fire fixing forever the location of the islands and forming majestic pathways for the moon and sun.

How beautiful these islands were! How shot through with harmony and peace! How the mind lingers on their pristine grandeur, a grandeur that nothing so far devised could permanently destroy. If paradise consists solely of beauty, then these islands were the fairest paradise that man ever invaded, for the land and sea were beautiful, and the climate was congenial.





IF PARADISE CONSISTS  
SOLELY OF BEAUTY,  
THEN THESE ISLANDS  
WERE THE FAIREST  
PARADISE...



Tremendous quantities of rain did fall on the islands, but it fell in such an unproductive manner. From the northeast, trade winds blew constantly, pushing ahead of them low clouds pregnant with sweet water. But along the northeast shores of each island high cliffs rose, and mountains, and these reached up and knocked the water out of the clouds, so that it fell in cascades where it could not be used and never reached the southwest plains where the red soil was. Of the flat lands that could be tilled, fully three fourths were in effect deserts. If one could capture the wasted water that ran useless down the steep mountainsides and back out to sea, bringing it through the mountains and onto the flat lands, then crops could be grown. Or if one could discover the secret reservoirs waiting in the kidneys of the islands, one would have ample water and more than ample food. But until this was accomplished, men who lived on these islands would never have enough water or enough food.

And so these beautiful, inhospitable islands waited for some breed of men to invade them with food and courage and determination. The best that could be said of the islands, as they waited, was that they held no poisonous snakes, no fevers, no mosquitoes, no disfiguring diseases, and no plagues. ▲







## 05/ AN AUTHENTIC PARADISE

These islands were unique, alone, apart, off the main stream of life, a secluded backwater of nature... or, if you prefer, an authentic natural paradise where each growing thing had its opportunity to develop in its own unique way, according to the dictates and limitations of its own abilities.

I spoke of that adventurous bird that brought the first seed in its bowels. It was a grass seed, perhaps, one whose brothers and sisters, if the term may be used of grasses, stayed behind on their original islands, where they developed as the family had always done for millions of generations. On those original islands the grass maintained its standard characteristics and threw forth no venturesome modifications; or, if such mutations were offered, the stronger normal stock quickly submerged them, and the dead average was preserved.

But on the new islands the grass, left alone in beauty and sun and rain, became a different grass, unique and adapted to these islands. When men looked at such grass, millions of years later, they would be able to discern that it was a grass, and that it had come from the original stock still existing elsewhere; but they would also see that it was nevertheless a new grass, with new qualities, new vitality, and new promise.



Did an insect from one of the huge continents reach these islands? If so, here he became a different insect, his legs longer or his nose more adapted to boring. Birds, flowers, worms, trees and snails... all developed unique forms and qualities in these islands.

There was then, as there is now, no place known on earth that even began to compete with these islands in their capacity to encourage natural life to develop freely and radically up to its own best potential. More than nine out of ten things that grew here, grew nowhere else on earth.

Why this should have been so remains a mystery today. Perhaps a fortunate combination of rainfall, climate, sunlight and soil accounted for this miracle. Perhaps eons of time in which diverse growing things were left alone to work out their own best destinies was the explanation. Perhaps the fact that when a grass reached here it had to stand upon its own capacities and could not be refertilized by grasses of the same kind from the parent stock, perhaps that is the explanation. But whatever the reason, the fact remains: in these islands new breeds developed, and they prospered, and they grew strong, and

they multiplied. For these islands were a crucible of exploration and development.

And so, with these capacities, these islands waited. Jesus died on a cross, and they waited. England was settled by mixed and powerful races, and the islands waited for their own settlers. Mighty kings ruled in India, and in China and in Japan, while the islands waited.

Inhospitable in fact, a paradise in potential, with almost no food available, but with enormous riches waiting to be developed, the islands waited. Volcanoes, still building the ramparts with fresh flows of lava, hung lanterns in the sky so that if a man and his canoe were lost on the great dark bosom of the sea, wandering fitfully this way and that, he might spot the incandescent glow of the under side of a distant cloud, and thus find a fiery star to steer by.








THESE ISLANDS WERE A  
CRUCIBLE OF EXPLORATION  
AND DEVELOPMENT.





Large gannets and smaller terns skimmed across the waters leading to land, while frigate birds drew sharp and sure navigation lines from the turbulent ocean wastes right to the heart of the islands, where they nested. If a man in a canoe could spot a frigate bird, its cleft tail cutting the wind, he could be sure that land lay in the direction toward which the bird had flown at dusk.

These beautiful islands, waiting in the sun and storm, how much they seemed like beautiful women waiting for their men to come home at dusk, waiting with open arms and warm bodies and consolation. All that would be accomplished in these islands, as in these women, would be generated solely by the will and puissance of some man. I think the islands always knew this.

Therefore, men of Polynesia and Boston and China and Mount Fuji and the barrios of the Philippines, do not come to these islands empty-handed, or craven in spirit, or afraid to starve. There is no food here. In these islands there is no certainty. Bring your own food, your own gods, your own flowers and fruits and concepts. For if you come without resources to these islands you will perish.

But if you come with growing things, and good foods and better ideas, if you come with gods that will sustain you, and if you are willing to work until the swimming head and the aching arms can stand no more, then you can gain entrance to this miraculous crucible where the units of nature are free to develop according to their own capacities and desires.

On these harsh terms the islands waited. ▲



MAUKA

MAKAI



Built with skill and wise hands, without nails or modern technology, these exquisite masterpieces enabled Polynesians to travel thousands of miles over the strongest ocean waves, with all they carried, to settle in new land—including our beloved Hawai'i.

The Hawaiian skill in water sport and seafaring is proudly recorded in the ancient ki'i pohaku—petroglyph carvings—depicting expert fishermen, close relation-ships with the honu—turtle—and other ocean creatures, and water activities. To be skilled in water sport requires the greatest discipline of all—control of the mind—through mastering the fear of the most mysterious depths of our planet. In ancient times this great skill required years of learning to decipher when certain fish were in abundance or when to stay out of the ocean, when certain birds or large ocean creatures might appear or when to expect a tsunami.

Human beings never stop inventing new ways to play with our ocean. Ancient Hawaiian water sports included: he'enalu (surfing), a sport also enjoyed by the volcano goddess Pele, heihai wai'a (outrigger canoe racing), which today is a competitive worldwide sport; lele kawa, plunging feet first into the water with the least possible splash; lele pahu, plunging feet first causing the largest splash; kaupua, diving for a half-submerged object; and aho loa (long breath), holding one's breath under water.

The ocean has carved each Hawaiian island as a monument of pure love and beauty. Flowing mountainscapes and coastlines are a magical tour of nature, from Pele pouring sizzling lava into the Big Island's ocean right down to peer-ing at a tiny starfish sitting on ancient lava rock on a Maui shore. Waves spout through lava tubes, roll smooth the black and white coral, and crush lava into fine black and brown sand. Waves create caves, shape rock formations or even the slant a coconut palm grows. All this from ocean water shaping Hawai'i's islands. ●●

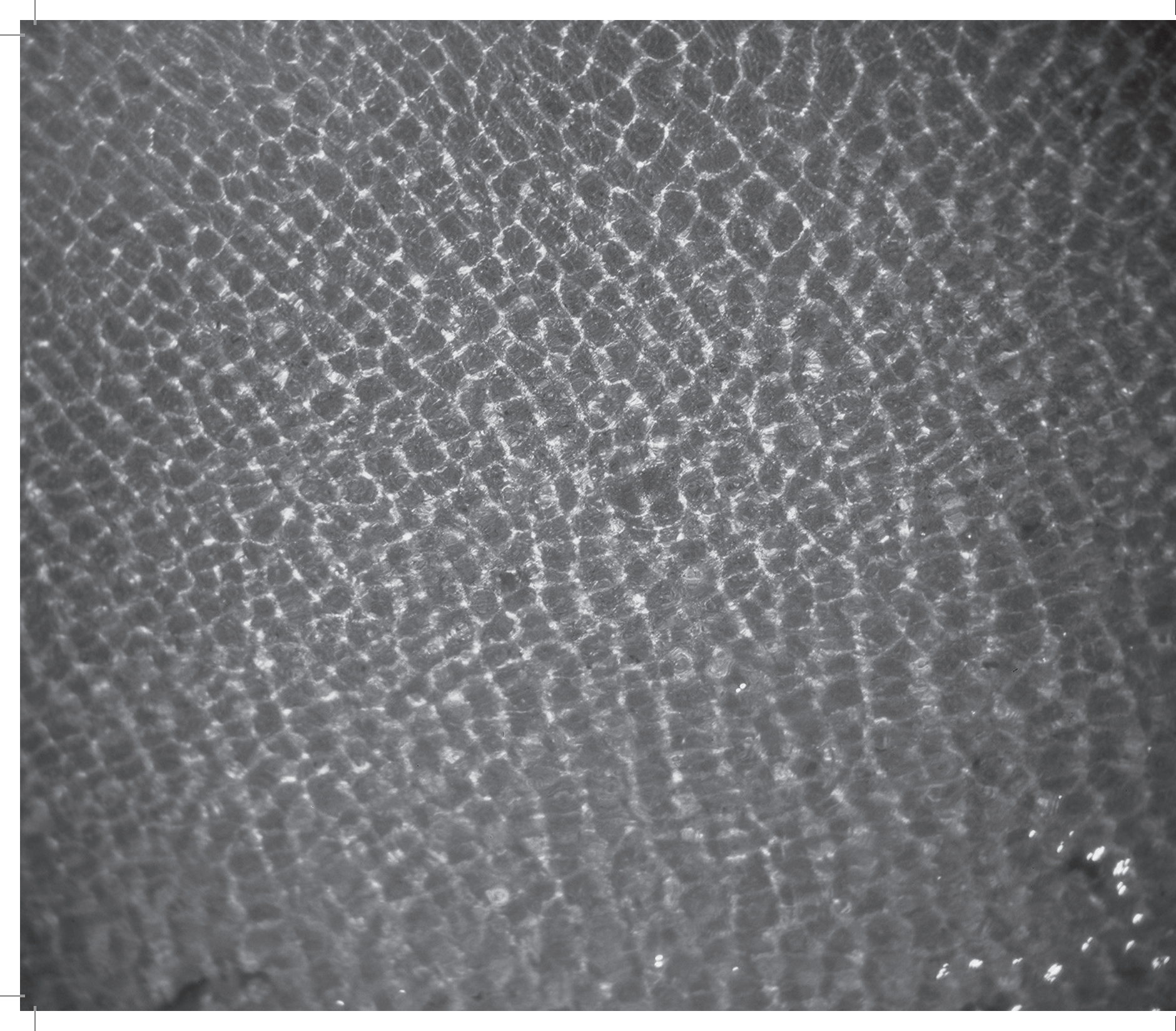




The wā (outrigger canoe) enabled the most amazing migrations of humankind throughout the Polynesian nations. Ancestrally, Hawaiian people are supreme ocean navigators, revered for their expertise in reading the ocean by studying the waves—size, shape, pattern and direction—the stars, types of birds or fish, and knowing when they were nearing land. Even today ocean athletes and lovers of the sea learn to read the ocean each day before heading out for work or adventure.

As with the human form, the body of the wā is called the kino, while the holes in the two sides are called the yes. The twine represents unity and symbolizes the importance of keeping family together. It was protocol for men to sit in the front of the wā, not because men were better at steering but because men were responsible for looking after the family—it was their honor. Men needed to find the food and brave the waves. The men even prepared the catch and tasted it before giving it to their families.

The koa wood traditionally used for making outrigger canoes is endemic to Hawai'i. Koa trees can reach 160 feet tall and 20 feet wide and are considered a gift from the gods. Before cutting down a tree, Native Hawaiians always followed the practice of asking permission. If it felt right, the tree was felled and moved down a mountain by creating a sliding path all the way to the ocean. This symbolized perpetuity, as the trees are born of the ocean, from forces like rain, then grow in the mountains and return to sea as wā for their final purpose. An outrigger canoe is given a blessing and name before entering service. This name will protect a canoe's lifetime in the ocean and must be chosen carefully.







The Ring of Fire is the belt of volcanic activity in the Pacific where tectonic plates move underneath continents causing underwater volcanic eruptions and creating the deep trenches. The Ring of Fire extends from the southern tip of South America north to Alaska, west to Asia, south through Japan, the Philippines, Indonesia and then to New Zealand. Hawai'i sits in the middle of the Ring of Fire.

A Hawaiian islander's way of life often depends on our ocean. The ocean allowed the Polynesians to navigate their way here. Ancient outrigger canoe-ing and sailing skills are honored daily by Hawai'i's people and by the Polynesian Voyaging Society's recreation of traditional voyages with recent sail-ings of the Hokule'a.

The ocean plays a sacred part of life in Hawai'i. Phases of the moon tell people when to go deep-sea fishing or when to find a particular fish. The sea is the setting for cleansing ceremonies such as a morning hī'u wai. Hula is performed in praise of the ocean and the rising sun that puts the fire in our piko (navel). Surfing the big swells is our birthright. Art and storytelling weave visions from our ocean. The ocean is for healing, for meditating, for wondering and for dreaming. Our ocean is the setting for festivities. Play and romance are ignited by the ocean. The ocean offers a school of knowledge to understand life and presents signs for our future. Our ocean is a provider and respected as 'ohana (family). The world-renowned spirit of aloha and gentle love of the Hawaiian people are believed to come from the healing mana (energy) of our ocean surrounding and embracing the islands at every moment. This strength can be seen and felt—when surfing a giant wave on the North Shore of O'ahu or paddling an outrigger canoe between two Hawaiian islands across some of the most turbulent channels on Earth. The wisdom of Hawai'i's ocean flows to its people and back again as a green sea turtle waves aloha with a splash of its flipper or a ripple laps at our feet to heal our soul—as do all things of our ocean.



*our ocean is life...*



# 05 / the rings of fire

To help define location various parts of our ocean are named: the Arctic (North Pole), Atlantic, Antarctic (South Pole), Indian and Pacific. The Pacific is where the Hawaiian Islands exist and has the deepest ocean levels on Earth, with an average depth of more than 14,000 feet—compared to the Arctic, which at one point has the shallowest depth of just over 3,400 feet. The Pacific contains most of the ocean's trenches with the deepest more than 36,200 feet below sea level. This isolated breeding ground is home to the most magical creatures imaginable, constantly evolving, fed by nutrients spurring out of underwater geysers.

The Hawaiian Islands are part of a chain of volcanic islands created by the presence of a hot spot that has generated more than 200 volcanoes spanning 75 million years. The underwater baby of the chain is the Loihi seamount while the Island of Hawai'i, the Big Island, is still a toddler, rising 17,000 feet above the ocean floor and nearly 14,000 feet above sea level.

Like most toddlers the Big Island is full of energy. Thousands of people come to the Big Island each year in search of this vibrant life force, making it a center of healing for the world. Here our ocean is filled with the renewing energies of the ever-flowing volcano Kilauea to feed our bodies.



The familial connection the people of Hawai'i have with nature is expressed through honoring the ocean. The Hawaiian people have long known life exists through our ocean. The Kumulipo is a sacred Hawaiian chant tracing creation from the emergence of sea creatures to insects, land plants, animals and humans from watery beginnings. The Kumulipo sings of the interrelationship that exists upon and within our Earth.

The Hawaiian people's knowledge of the sea is ancient and never forgotten. Generation after generation of Native Hawaiians, as well as new ocean lovers who settle in the Islands, live the rich ocean traditions with every breath. Many islanders play and work with our ocean—surfing, swimming, sailing, gathering and healing. Some islanders are ocean masters, known as beach boys, and save visitors who misunderstand the ocean's movements and power. Treasured islands carry on the traditions of their ancestors of hundreds of years past making fish hooks the old way; practicing ancient ceremonies or observing signs from the ocean for guidance to make decisions. More and more islanders educate visitors and children, talking story about the dreams our ocean holds for our future.

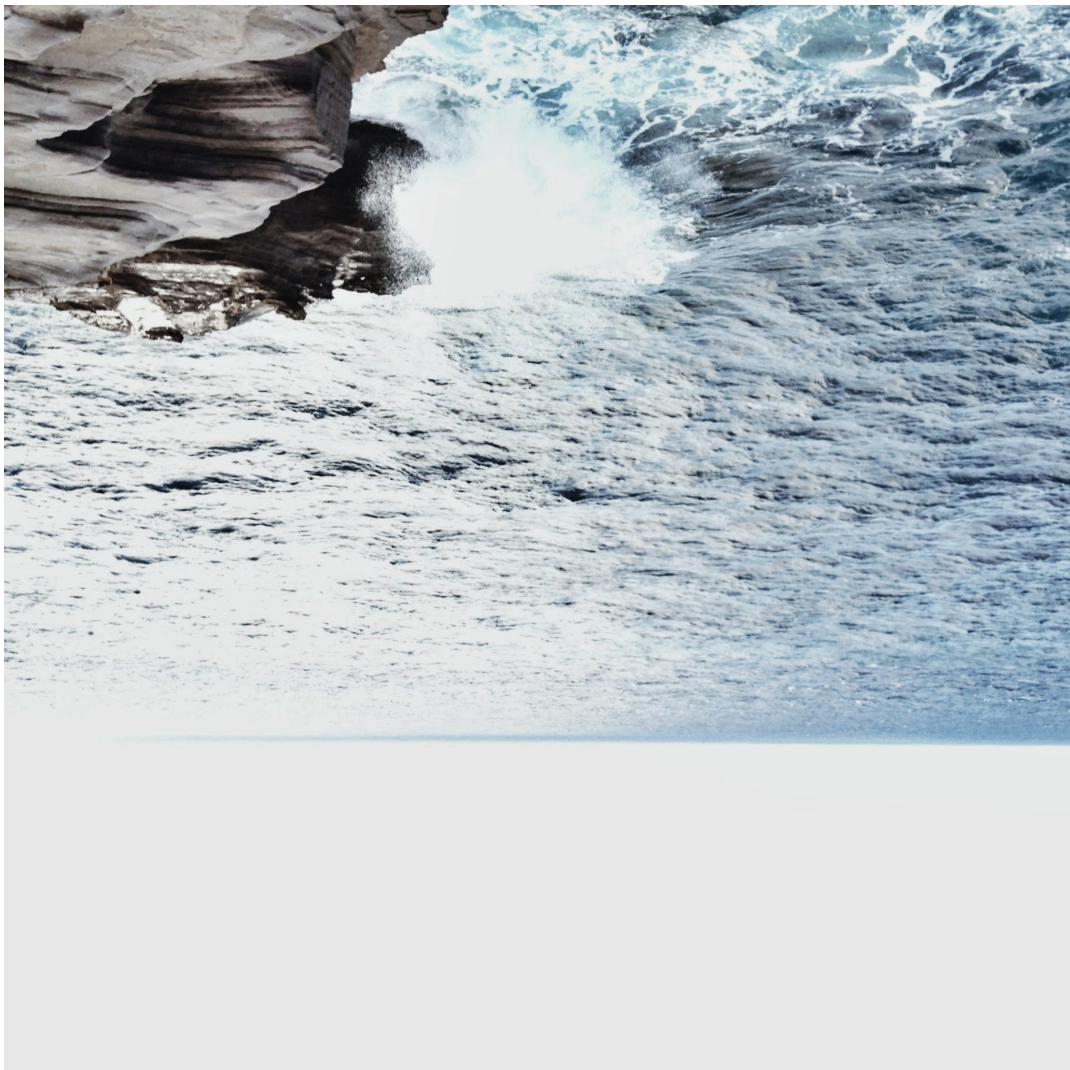
Hawai'i is a masterpiece of nature when the ocean's spectacular spirit has carved one of the most magnificent coastlines in the world. Hawai'i is also a scientific dreamscape, ideal for studying our planet and a loving promise of how our ocean awakens the evolution of human beings.

The ocean, or kai, which means salt water in Hawaiian, is the spiritual connection between this life and eternity. While we call the various bodies of water around the world by different names, there is really just one ocean connecting every continent and every form of animal life including human beings. So vast, the ocean covers 70 percent of the surface area of our planet. The life force the sea provides is something Hawaiian people have long revered.

So what do Hawaiian islanders believe about the ocean? What is our human relationship with the sea and what is our duty as human beings? What does the ocean remind us each day and what does it teach us through eternity? Why do we feel so good after a dip in the ocean and how do our bodies benefit? Why does our ocean draw us to play? Our ocean has always been here, long before humans walked the Earth. Our ocean is life. ●●











# 04 / the ancient sea

The Hawaiian Islands and its people magnificently honor our connection with kai—the ocean—not as two separate entities but to breathe as one. Over millennia Hawai'i grew out of the ocean from underwater volcanoes creating land from our Earth's core. In relative isolation the Hawaiian Island developed magnificent ecosystems boasting a kaleidoscope of landscapes—home to unique plants, animals, birds and mesmerizing ocean creatures. This cycle of evolution is the foundation of Hawaiian life. Every part of nature is linked with human life and is honored with many gods depicting all aspects of nature from water to sky...lava to leaf.



Then from the south, where storms breed in the senseless deep, a mighty wave would form and rush across the world. Its coming would be visible from afar, and in gigantic, tumbling, whistling, screaming power it would fall upon the little accumulation of rocks and pass madly on.

For the next ten thousand years there would be no visible island, yet under the waves, always ready to spring back to life, there would rest this huge mountain tip, rising 19,000 feet from the floor of the ocean, and when a new series of volcanic thrusts tore through the vents, the mountain would patiently build itself aloft for another try. Exploding, hissing, and spewing forth ash, the great mountain would writhe in convulsions. It would pierce the waves. Its island would be born again.

This was the restless surge of the universe, the violence of birth, the cold tearing away of death; and yet how promising was this interplay of forces as an island struggled to be born, vanishing in agony, then soaring aloft in triumph. You men who will come later to inhabit these islands, remember the agony of arrival, the rising and the fall, the nothingness of the sea when storms throw down the rock, the triumph of the mountain when new rocks are lifted aloft.

For a million years the island hung in this precarious balance, a child of violence; but finally, after incredibly patient accumulation, it was established. Now each new lava flow had a solid base upon which to build, and inch by inch the debris agglutinated until the island could be seen by birds from long distances. It was indeed land, habitable had there been existing men, with shelters for boats, had there been boats, and with rocks that could have been used for building homes and temples. It was now, in the real sense of the word, an island, taking its rightful place in the center of the great ocean. ●





*d n d r d m d*





The chance emergence of the island was nothing. Remember this, its emergence was nothing. But its persistence and patient accumulation of stature were everything. Only by relentless effort did it establish its right to exist. For the first ten thousand years after its tentative emergence, the little pile of rock in the dead, vast center of the sea fluctuated between life and death like a thing struck by evil. Sometimes molten lava would rise through the internal channels and erupt from a vent only a few inches above the waves. Tons upon tons of material would gush forth and hiss madly as it fell back into the ocean. Some, fortunately, would cling to the newborn island, building it sturdily many feet into the air, and in that time it might seem as if the island were indeed secure.

# 03 chance emergence



But rock had at last been deposited above the surface of the sea. An island—visible were there but eyes to see, tangible were there fingers to feel—had risen from the deep.

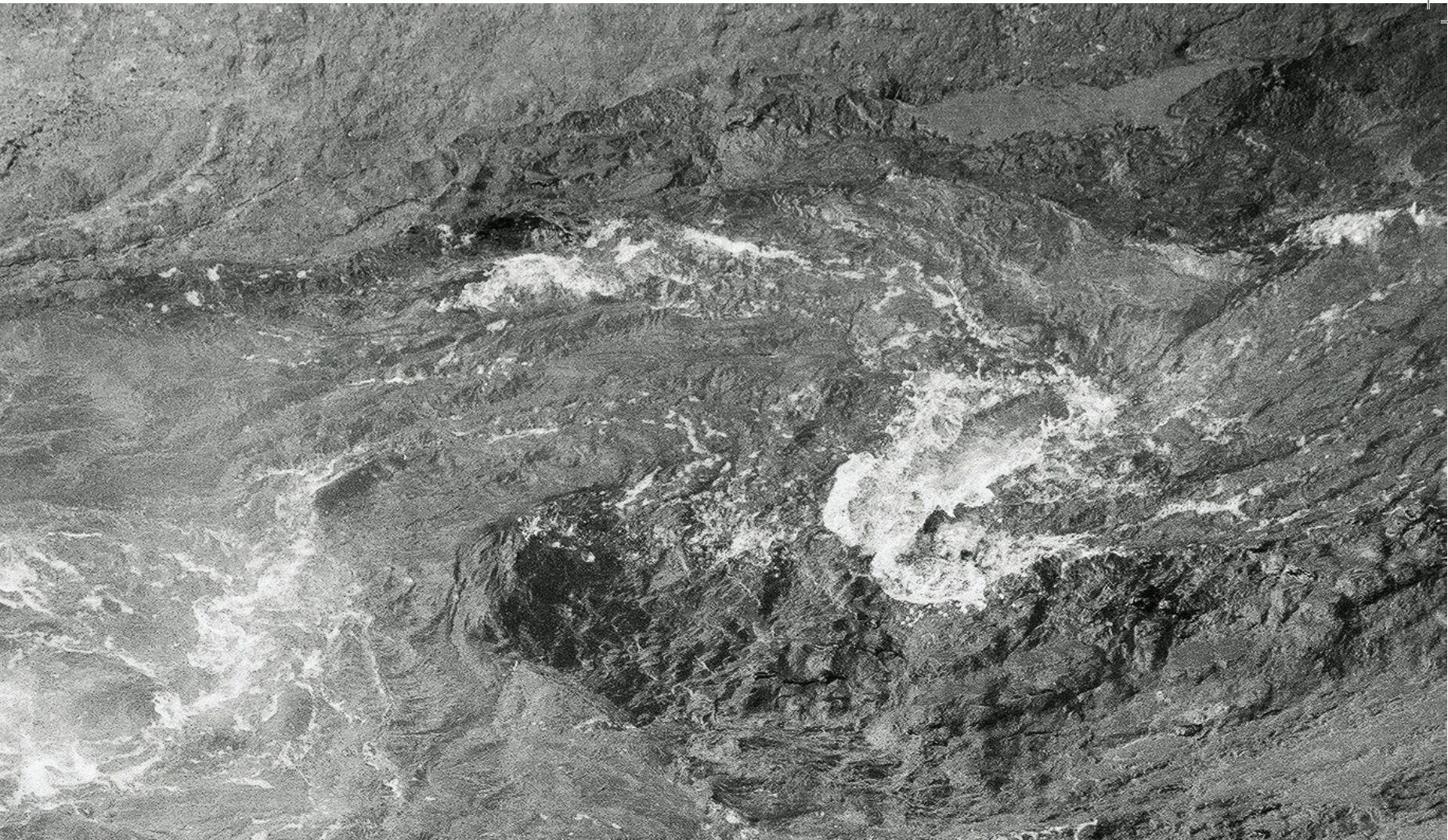
The human mind, looking back upon this event—particularly if the owner of the mind has once stepped upon that island—is likely to accord it more significance than it merits. Land was finally born, yes. The forty million years of effort were finally crowned by the emergence of a pile of rocks no larger than a man's body, that is true. But the event was actually of no lasting significance, for in the long history of the ocean many such piles had momentarily broken the surface and then subsided, forbidden and forgotten. The only thing significant about the initial appearance of this first island along the slanting crack was the fact that it held on and grew. Stubbornly, inch by painful inch, it grew. In fact, it was the uncertainty and agony of its growth that











# 02 / above the surface

For nearly forty million years, an extent of time so vast that it is meaningless, only the ocean knew that an island was building in its bosom, for no land had yet appeared above the surface of the sea. For nearly forty million years, from that extensive rupture in the ocean floor, small amounts of liquid rock seeped out, each forcing its way up through what had escaped before, each contributing some small portion to the accumulation that was building on the floor of the sea. Sometimes a thousand years, or ten thousand, would silently pass before any new eruption of material would take place. At other times gigantic pressures would accumulate beneath the rupture and with unimaginable violence rush through the existing apertures, throwing clouds of steam miles above the surface of the ocean. Waves would be generated which would circle the globe and crash upon themselves as they collided twelve thousand miles away. Such an explosion, indescribable in its fury, might in the end raise the height of the subocean island a foot.

But for the most part, the slow constant seepage of molten rock was not violently dramatic. Layer upon layer of the earth's vital core would creep out, hissing horribly at the cold sea water, and then slide down the sides of the little mountains that were forming. Building was most sure when the liquid rock did not explode into minute ashly fragments, but cascaded viscously down the sides of the mountains, for this bound together what had gone before, and established a base for what was to come.

How long ago this building took place, how infinitely long ago! For nearly forty million years the first island struggled in the bosom of the sea, endeavoring to be born as observable land. For nearly forty million submerged years its submarineean volcano hissed and coughed and belched and spewed forth rock, but it remained nevertheless hidden beneath the dark waters of the restless sea, to whom it was an insignificant irritation, a small climbing pretentious thing of no consequence.

And then one day, at the northwest end of the subocean rupture, an eruption of liquid rock occurred that was different from any others that had preceded. It threw forth the same kind of rock, with the same violence, and through the same vents in the earth's core. But this time what was thrown forth reached the surface of the sea. There was a tremendous explosion as the liquid rock struck water and air together. Clouds of steam rose miles into the air. Ash fell hissing upon the heaving waves. Detonations shattered the air for a moment and then echoed away in the immensity of the empty wastes.



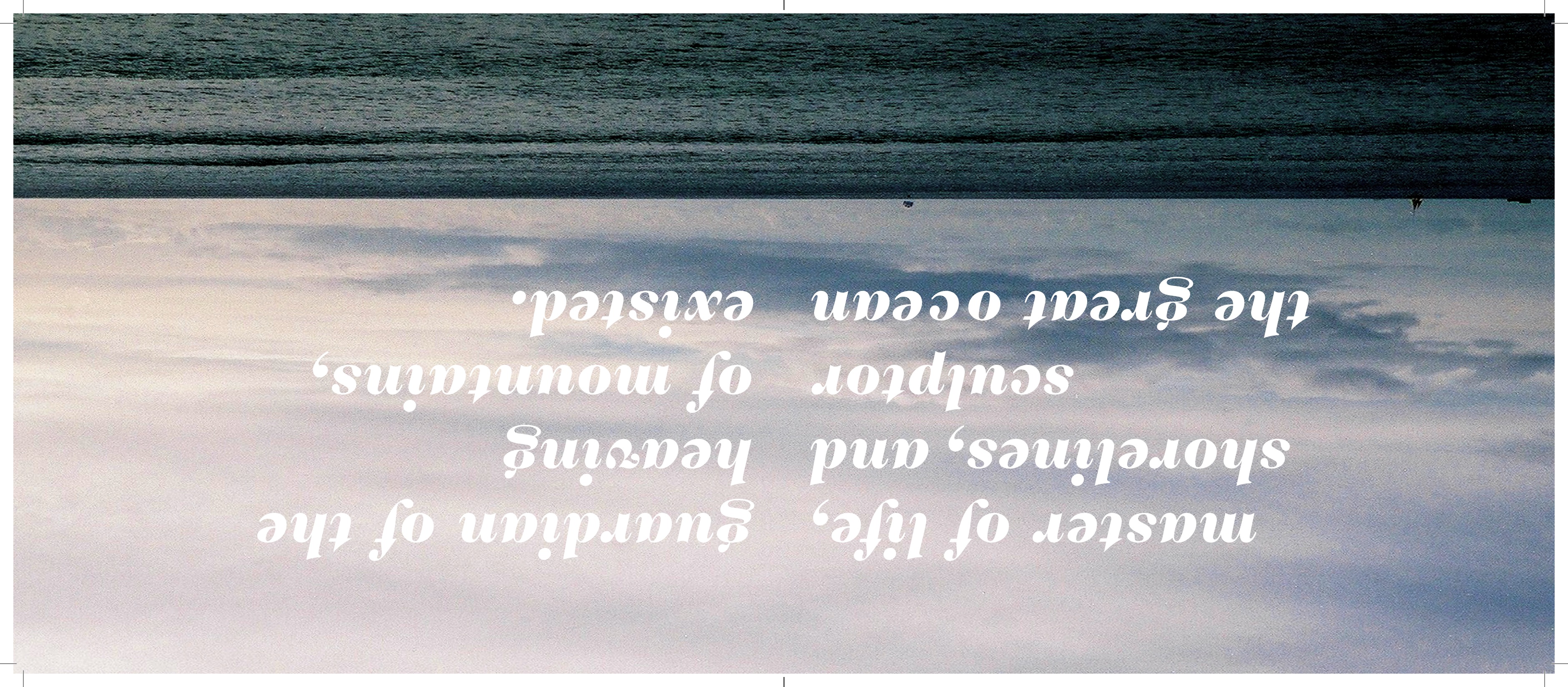
Millions upon millions of years before man had risen upon earth, the central areas of this tremendous ocean were empty, and where famous islands now exist nothing rose above the rolling waves. Of course, crude forms of life sometimes moved through the deep, but for the most part the central ocean was marked only by enormous waves that arose at the command of moon and wind. Dark, dark, they swept the surface of the empty sea, falling only upon themselves terrible and puissant and lonely.

Then one day, at the bottom of the deep ocean, along a line running two thousand miles from northwest to southeast, a rupture appeared in the basalt rock that formed the ocean's bed. Some great fracture of the earth's basic structure had occurred, and from it began to ooze a white-hot, liquid rock. As it escaped from its internal prison, it came into contact with the ocean's wet and heavy body. Instantly, the rock exploded, sending aloft through the 19,000 feet of ocean that pressed clown upon it columns of released steam.

Upward, upward, for nearly four miles they climbed, those agitated bubbles of air, until at last upon the surface of the sea they broke loose and formed a cloud. In that instant, the ocean signaled that a new island was building. In time it might grow to become an infinitesimal speck of land that would mark the great central void. No human beings then existed to celebrate the event. Perhaps some weird and vanished flying thing spied the escaping steam and swooped down to inspect it; more likely the roots of this future island were born in darkness and great waves and brooding nothingness. ● ●







master of life,  
shorelines, and  
sculptor  
the great ocean  
guardian of the  
heaving  
of mountains,  
existed.



How utterly vast it was! How its surges modified the very balance of the earth! How completely lonely it was, hidden in the darkness of night or burning in the dazzling power of a younger sun than ours.

At recurring intervals the ocean grew cold. Ice piled up along its extremities, and so pulled vast amounts of water from the sea, so that the wandering shoreline of the continents sometimes jutted miles farther out than before. Then, for a hundred thousand years, the ceaseless ocean would tear at the exposed shelf

of the continents, grinding rocks into sand and incubating new life.

Later, the fantastic accumulations of ice would melt, setting cold waters free to join the heaving ocean, and the coasts of the continents would lie submerged. Now the restless energy of the sea deposited upon the ocean bed layers of silt and skeletons and salt. For a million years the ocean would build soil, and then the ice would return; the waters would draw away; and the land would lie exposed. Winds from the north and south would howl across the empty seas and lash stupendous waves upon the shattering shore. Thus the ocean continued its alternate building and tearing down.

Master of life, guardian of the shorelines, regulator of temperatures and heaving sculptor of mountains, the great ocean existed.







Millions upon millions of years ago, when the continents were already formed and the principal features of the earth had been decided, there existed, then as now, one aspect of the world that dwarfed all others. It was a mighty ocean, resting uneasily to the east of the largest continent, a restless ever-changing, gigantic body of water that would later be described as pacific.

Over its brooding surface immense winds swept back and forth, whipping the waters into towering waves that crashed down upon the world's seacoasts, tearing away rocks and eroding the land. In its dark bosom, strange life was beginning to form, minute at first, then gradually of a structure now lost even to memory. Upon its farthest reaches birds with enormous wings came to rest, and then flew on.

Agitated by a moon stronger then than now, immense tides ripped across this tremendous ocean, keeping it in a state of torment. Since no great amounts of sand had yet been built, the waters where they reached shore were universally dark, black as night and fearful.

Scores of millions of years before man had risen from the shores of the ocean to perceive its grandeur and to venture forth upon its turbulent waves, this eternal sea existed, larger than any other of the earth's features, vaster than the sister oceans combined, wild, terrifying in its immensity and imperative in its universal role.

# 10 from the boundless deep



## introduction ●

The Hawaiian Islands and its people magnificently honor our connection with kai—the ocean—not as two separate entities but to breathe as one. Over millennia Hawai'i grew out of the ocean from underwater volcanoes creating land from our Earth's core. In relative isolation the Hawaiian Island developed magnificent ecosystems boasting a kaleidoscope of landscapes—home to unique plants, animals, birds and mesmerizing ocean creatures. This cycle of evolution is the foundation of Hawaiian life. Every part of nature is linked with human life and is honored with many gods depicting all aspects of nature from water to sky... lava to leaf. ●



© 2013 Cassy Song

All rights reserved. No part of this publication may be reproduced, stored in a retrieval system, or transmitted in any form or by any means, electronic, mechanical, photocopying, recording, or otherwise, without prior consent.

Project editor: Cassy Song  
Image post-production: Cassy Song  
Design by  
Cassy Song  
Kapioalani Community College  
New Media Arts, Interface Design  
Honolulu, HI

2011 2012 2013 /  
10 9 8 7  
Printed in the US  
LLN-13: 4-8-15-16-23-42  
Control Number: 4815162342

06	INTRODUCTION
08	FROM THE BOUNDLESS DEEP
16	ABOVE THE SURFACE
22	CHANCE EMERGENCE
28	THE ANCIENT SEA
34	THE RING OF FIRE



## MA·KAI [MUH-KAHY]

**adverb** Hawaii

toward or by the sea; seaward: He agreed to purchase the land makai of Diamond Head Road.

### Origin:

Hawaiian, equivalent to ma—directional particle + kai ocean

## MAKAI/MAUKA

On Hawai'i's irregular islands, where shore and mountains rarely line up with any directional consistency, the native concept of "makai to mauka"—ocean to mountains—keeps things organized. The Hawaiians apportioned the land into pie-shaped slivers, where flowing streams and their widening chasms makai: toward the coast, lead up into mauka's high mountain valleys. Through her collection of photographs, Hawaii born-and-raised photo enthusiast, Cassy Song, takes us along a contrasting journey through Makai/Mauka.



MAKAI/MAUKA