

Chapter X

The Southern Islands

The little island of Barrington off the southern coast of Santa Cruz has no high mountains, no green forests, no sources of moisture other than fogs. Its contour is low; its vegetation is scattered and monotonous; its animal life reduced to a tiny fraction of its former abundance. Yet it retains a character of its own - an atmosphere of faded desiccation - unlike any of the other small islands. Although the larger trees give the impression of maintaining a precarious hold on survival, ~~more~~ lowly plants of less exacting requirements - the lichens - flourish with a luxuriance that actually contributes to the ^{general} impoverished appearance ~~of the high forms, though they do not live at the latter's expense.~~ Various kinds are attached to everything: the rocks are frosted with ~~lobed and branching processes of~~ these fungoid, ~~dormant plants;~~ the ^{white} bark of the Palo Santos, ~~white enough on its own,~~ is further whitened by a blotchy lichenous paint, and ^{its} ~~the~~ branches ~~from these trunks~~ are festooned in streaming filaments of palish green. The combined effect is one of cobwebbed, tattered age beyond decay, ~~of from which all organic residues have been dissected by microscopic agents leaving only the~~ bare bleached bones and ghosts of ~~a former~~ ^{past} flourishing success. But this is only illusion. The lichens are very much alive, as are the trees that give ^{them} ~~these~~ epiphytic types support, while they abide the time of periodic fogs, spawned by ocean currents, that bring the pittance of moisture for renewed activity.

The scaly orange columns of the tree cactus, the only surface - a sterile bark - that provides no chemical nutrient for

the lichens, gives a lively accent to the otherwise pale landscape.

On the shore the cactus grows in closer ranks and successfully occupies a small island which encloses one side of a narrow lagoon - the only good anchorage on Barrington - where schools of fish maneuver in formation, ~~through transparent water over a white sand bottom~~. The small island is without beaches; its sides are basalt cliffs that drop perpendicularly to the sand floor of the lagoon. Young sealions play ~~around~~ along these submarine escarpments and clamber out onto ~~the land at places where~~ ^{that} the lava blocks ^{make} the least abrupt transition with the sea. At these points the rock is coated with ~~dry and dried salt~~ ^{a white deposit} from their ^{bodies} coats and the ~~posts~~ ^{of the old bulls, who crawl up among the cactus trunks} of the old bulls, ~~who have lost their youthful~~ ^{have} ~~feistily and become~~ ^{indolent} with age. ~~They prefer~~ ^{their days} to sleep away ~~their days and crawl up among the cactus trunks, between foraging~~ ^{excursions, to escape the importunities of the young animals.} In these basking plazas all the modest vegetation has died, and the irregular surface has been rubbed to the ~~glistening~~ ^{enamel} ~~polish of~~ ^{white enamel} by the constant coming and going of the sealions. Out of the blinding whiteness rise the cylindrical brown trunks of the opuntias whose size alone permits them to survive the universal ruin.

Prehistorically Barrington supported a denser vegetation than today, both of grasses and ~~arboreal species~~ ^{tree types}. The disappearance and pruning of plants ~~types~~ has been the result of an over population of goats, introduced mistakenly, as on most of the Galápagos Islands, to serve as a food stock for mariners. They multiplied enormously until they had consumed the grasses and destroyed most of the bursera and cactus seedlings. ~~Interspecific~~ competition between these hardy exotics and the land iguanas,

~~Competition~~ placed too high a burden for survival on the latter, which, less well equipped for the exigencies of this new kind of rigorous competition, declined in numbers. Barrington's unique race of tortoises has long since been extinguished by the depredations of seamen. To save what ^{it} could from this deteriorating situation the Darwin Station undertook a few years ago a campaign to exterminate the goats ~~on the island~~. During a prolonged hunt 400 were shot and since then there has been a marked recovery of the vegetation. A few pairs of goats, however, escaped and are multiplying, and unless destroyed will in a few years time repopulate the island.

The iguana population seems also to be increasing under the relief from competition for cactus pads ~~with goats~~, as well as under lessened human pressure. They were at onetime taken in large numbers by sailing ships for food, but now that this is an illegal activity many fewer are carried off.

The Barrington iguanas are ~~dark~~ a dark race more like the one on Plaza Island than the other races already described, but they have a feature which distinguishes them from the others: the spiny crest between the shoulder blades is not stiff enough to stand erect but falls limply to one side. In their eating habits they are similar to those ^{observed} on Isabela. Cactus pads, which seem to be a staple of their diet on both islands, are prepared for consumption by rubbing off the spines with their front feet. One foot is placed on the fallen pad to hold it down while with the other foot they rub the surface from side to side. A large number but not all the spines are thus removed, some of which stick into the skin of their feet. ~~Apparently this is less undesirable than to have the spines lodged in the iguana's tender epithelium of the iguana's lips or tongue, or in his alimentary tract. Nevertheless,~~

Since ^(the purpose of) a good many spines are eaten, ^{it} ~~since~~ the treatment ~~removes only those~~ ^{has become} most loosely attached and none on the under surface of the pad.

Being so ineffective, scarcely more than a residual gesture.

~~One wonders why the creature bothers to perform the act at all.~~

It is rather difficult to explain a behavior pattern, which serves so little purpose, unless the behavior survives from a time when the need was greater, either ~~that~~ ^{less} when the iguana was/able to cope with cactus spines in its digestive system or when cactus spines were more formidable. A genetic shift in either of these directions would lead to the same result. ^{Perhaps} ~~first~~ the iguana adapted to a spiny

food by ^{evolving} ~~acquiring~~ the habit, ~~through the route of natural selection,~~ ^(the spines) while at the same time it developed of rubbing ~~them~~ ^{them} off, ~~then by further mutation and selection was~~

the ability ~~able~~ to ingest the ~~spines~~ ^{them} with less adverse effects. And perhaps concomitantly the ancestors of the opuntia cacti, in response to pressure from the Galapagos herbivorous fauna, as ecologists have suggested, evolved arborial types. It is also logical that with these changes towards a morphology less vulnerable to the depredations by Galapagos reptiles, the spininess of the cactus pads began to lose their survival value and so gradually drifted to a less prickly condition. On Champion Island off Floreana the characteristic ~~huge~~ massive trunked opuntias have limp hair-like spines, a ~~situation~~ condition possibly related to the size of the cacti together with the long absence of herbivorous ~~reptiles~~ ^{reptiles} from this isolated area. Inherited behavior patterns survive beyond their usefulness just as physical structures survive in vestigial organs long after the functional need ~~for~~ ^{to} which they evolved has become superfluous.

Characters both functional and behavioral do not always carry a survival value. They may have developed through evolutionary radiation where they confer no clear advantage or disadvantage.

A situation of this sort is much more likely to occur in isolated insular communities where the total ecological relationships are simpler ~~than~~ and inter-specific competition less severe than on continents. Features that by chance mutation have become part of the genetic ^{reservoir} ~~complex~~ of a species, to which no function can be attributed, which provide no benefit or contribute no handicap, have a neutral effect on natural selection and have no value in determining survival. The more complex the community the more probable it is that features in this category will confer either positive or negative advantage and will be bred into or bred out of the species. Many of the ~~characteristics~~ ~~characters~~ characters of Galapagos animals and plants are of this kind, that, under conditions of limited competition, give a questionable advantage, whereas under the stress of more rigorous rivalry could play a determining role in natural selection. The drooping crest of the Barrington colonophus is possibly an example of this kind of a feature. For its race it appears to be a character of no importance even though it may be genetically dominant, but if these iguanas came in contact and interbred with a race in which this feature was absent, it is impossible to predict whether a selection involving it would take place. Another trait that is probably genetically neutral is the shape of the carapace of the Galapagos ~~tortoise~~ tortoise which varies from island to island. The gradual shift to drabness of plumage among insular bird species is an example of a negative trend away from the characters of sexual dimorphism that have lost or are losing their selective importance in species survival.

The behavior of the ghost crabs on the beaches of Santiago is not repeated by those on San Cristobal where a different beach structure has ~~altered~~ ^{the course of} influenced the crab's adaptation. On the altered

north shore of San Cristobal we landed on a long curved, white strip of sand backed by low dunes behind which stretched a wide salt marsh. The dune tops in June were red with a creeping succulent which was announcing by this hue the end of its season, while ~~as in~~ the marsh behind the plants were still bright green. The beach is a coarse mixture of very small shells and shell fragments, the variegated color^e of which give the sand a speckled, non-homogeneous appearance. ~~The whole shells occur most abundantly in a strip at the high tide line.~~ The sand contains very little volcanic material so that the consistancy^e is quite light and loose, and is easily washed about and redistributed by the waves. At one end of the beach where it curves out to meet a pile of lava boulders the pitch of the sand becomes ^{more} ~~quite~~ gradual and is constantly swept by the restless ^{lapping} ~~surge~~ of small waves. Ghost crabs forage in this zone. They scamper up onto ~~the~~ the dry beach and back into the shallow water in their search, and when alarmed they retreat into the sea. In this sand they make no burrows for the coarse particles do not cohere, and the wall would collapse at the slightest disturbance. If pursued and cornered they seek refuge in the sand itself, which owing to the very same loose structure that renders it unsuitable for digging holes provides a means of quick escape. A crab baffled in his attempt to reach deep water will flatten himself on the sand and in a matter of seconds will disappear beneath the surface until only his two periscope eyes remain uncovered. These ~~2~~ organs look so exactly like fragments of shell and match so perfectly the heterogeneous composition of the beach that if one's gaze wanders ~~from them~~ they are nearly impossible to relocate. The disappearing act, which has taken place before your eyes, is then complete. A crab has melted into the background of shell particles by a process even more remarkable than a magicians' ^e ~~slight~~ ^{sleight} of hand trick or the vanishing of young

quail among dead leaves. It happened in full view and yet you do not know how it was accomplished. Perhaps by digging the sand away beneath him the crab settles into the beach; the particles of shells ^{slide} ~~creep~~ imperceptibly over his carapace until a perfect camouflage results. Though unseen, ~~you~~ one knows he is there watching, and if by chance or intent he is disturbed he quickly emerges and dashes off on another attempt to reach the safety of the sea.

San Cristobal, or Chatham by its old English name, is a sausage-shaped island whose long axis is oriented on a south^{west}~~east~~ ^{east}~~west~~ line. We cruised along its northeast shore from Kiker Rock to Punta Pitt, ~~the eastern-most land of the Galapagos out of~~ ^{rising from the ocean} Archipelago. Kiker Rock^{is} is a 400 foot, truncated volcanic core/^{the passage} ~~into~~ ^{slot} across which the sea has carved a ~~slit~~ slot wide enough for ~~large ships~~ of small sailing boats ~~to pass through~~. The day we traversed the ~~passage~~ slot we estimated its width at 50 feet. The sea was calm, but had it been rough, we would not have tried it for the surge of the waves would have smashed our boats against the sheer rocks. The sea was working on the ultimate downfall of Kiker Rock from all sides, and had succeeded in tunneling another narrow slit, ~~parallel with the wider~~ ~~larger passage~~, which was barely wide enough to admit a row boat. The navigable slot, which took but a few minutes to traverse, was rife with foreboding. The waves growled under the dripping slatey ^{chitons} ledges where limpets and ~~kitons~~ sucked tight against the slippery rock. And ^a ~~the~~ chill damp breath ^{loaded with fishy odors came in gusts,} ~~of hidden sunless depths~~ was forced from gloomy caverns by the heave of the sea. ~~These exhalations came in gusts loaded with fishy odors, a hint only of the secret proliferation of ocean life.~~

Punta Pitt is also the scene of long erosion and the leveling forces of ~~the/sad~~ nature. The island is being whittled down by the perpetual attack, ~~and~~ I felt here most strongly the

~~evanesce~~
~~the impermanence~~ of everything solid, ~~on this eastward facing~~
~~speck of land, granted so tenuous an existence by~~ The universal
 ocean. ~~Here the sea~~ is the overwhelming force to which all land
 will ultimately succumb. ~~Will the planet's liquid envelop be the~~
~~final arbiter whose subtle insinuations nothing rigid can~~
~~indefinitely withstand?~~ Strength lies in accommodation and
 weakness in resistance: this is the way of tractable nature; to
 bend and to retreat and circumvent, to follow the line of least
 resistance and to ~~make~~ a stand at another time or place where
 the pressure is least. Permanence resides only in flexibility
 and the ocean is the more flexible element.

Near Punta Pitt a large colony of ^{Eggs} frigate birds, gulls,
 and boobies is established on the main island of San Cristobal.
 It has spilled over onto an islet of jumbled basalt which has also
 become the nesting site for hundreds of storm petrels. Part of the
 islet is a heap of loose rock, and here in deep crevices the
 petrels lay their eggs. But the available sites in the basalt
 are insufficient for the total population. The surplus birds,
 unless they are to go elsewhere to breed, are forced to adapt their
 habits to other nesting sites. These they have found under the
 tangled stems of bushes on the low shoulders of the islet where the
 frigate~~bird~~ birds nest. Soft warbling, scratching sounds issue from
 these bushes when the petrels are changing places at their nests.
 They cannot be seen through the mass of branches which give them
 almost as much protection as a rock shelter, but by reaching into
 the bottom of a bush I was able to bring one out. It did not
 struggle, and made no attempt to fly away when I released it on the
 ground, but immediately scrambled back under the bush to its mate.

Early in the morning and late in the afternoon, the petrels
 circle the top of the islet like large moths around a lantern. Page 159

they return and depart for their feeding grounds. Petrels are defenseless birds on land and would be easy prey to many other species if they nested in the open. As it is they have only one enemy, the Galapagos Short-eared owl, who can penetrate their nesting crevices. This predator can reach into many of the shallower holes and drag the incubating petrel from her egg. Every petrel colony provides a living for a few owls. The petrels are so numerous that the few taken has no detectable effect on the size of the population, but may serve to weed out the weaker ones and those pairs living on the margins of the colony or whose competitive failure has relegated them to the least secure nesting sites.

~~A/filxxx~~ On our visit a fierce little owl was searching the islet for imprudent petrels. He circled in short flights the high point of rocks where the petrels flitted in and out. Each time he came down he alighted where there were many nesting crevices and ~~would~~ would look about examining the holes. He must have known the extent of his reach for I never saw him try to extricate a bird, and when I investigated the same crevices, in most I could only hear the petrels muttering from the dark recesses. A few silent incubating birds were visible, but when I reached in they retreated into the back of the cavity. The space was often too narrow for my arm, and much too small for an owl, so in most cases the birds were quite safe, but here and there in shallower cavities they could be plucked ~~o~~ out, especially during unguarded moments when the two birds are together.

A special attraction ^{on} San Cristobal is a lake in the crater of one of its highest ~~vol~~ extinct volcanoes. The water is piped to the settlement at Wreck Bay, but the level has not been lowered even in the dry season by this use, a mystery for which

satisfactory
no/explanation has yet been offered. The usual legends about a bottomless lake or underground connections with the mainland surround the place. Replenishment by rain would seem, however, to be the ~~only~~ answer, but the adjacent watershed is only the narrow crater rim, and drainage from small areas of higher land on other mountains would have to reach the lake ~~by hydrostatic pressure~~ ^{under ground} through ~~subterranean~~ channels. ~~When, as proposed by the military administration at Wreck Bay, a larger pipe line is installed, use may exceed supply and the source of the inflow be revealed.~~ There are other bodies of water in the highlands of San Cristobal which attest to the ^{occasional} occurrence of considerable rain, ~~at times during the year.~~ A marshy pond occupies most of a saddle between the crater lake and a neighboring higher mountain. ~~The open water was paved with a mosaic of reddish duckweed when we were there and many shore birds were feeding around the shallow borders.~~ A marshy pond, whose open water is paved with a mosaic of reddish duckweed and around whose shallow borders many shore birds feed, occupies most of a saddle ~~between~~ between the crater lake and a neighboring mountain.

The first ~~of the~~ Galápagos islands visited by Darwin on the voyage of the Beagle was Hood, ^{twenty five} ~~thirty~~ miles south of Chatham. Here he saw ~~the~~ tortoises for the first time, and it is believed that his description was of the Hood species, which were ^{then} still ^{numerous} ~~abundant at that time.~~ On last count a few years ago by the ^{R.C.} Director of the Darwin Station only four individuals were found. Two of these, a male and a female, were taken back to Santa Cruz for breeding stock ^{from which} ~~from which to replenish the Hood population.~~ ~~It is hoped that if the experiment succeeds, this race of the Galapagos tortoise can be brought back to viable numbers.~~ Young

the young tortoise, raised under these protected conditions, will be re-introduced ^{to} the island ~~with~~ in the hope that this Hood race of tortoises can be brought back to viable numbers.

The land birds of Hood Island are few. They are (number? see David Lack) species of finches, a very dark race of the Yellow warbler, Dendroica petetchia, and a mockingbird. There may be doves. But ~~However~~, around the edges of Punta Cevallos and Punta Suárez ~~the~~ sea ^{marine iguanas} birds and ~~creatures of the sea~~ have taken firm possession. Masked and Blue-footed boobies are there by the thousand, and iguanas in herds as large as those at Espinosa Point bask on the guano-whitened rocks. At the season when the Hood iguana males and begining to compete for the favors of the females and to engage in shoving contests, then they undergo a change. Their iron-gray skins become blotched with coppery red, mal^achite, and blue as though a corrosion were spreading through their rough armour.

The young lizards, raised under these protected conditions, will be re-introduced into the island with the hope that this good race of lizards can be brought back to visible numbers.

The land birds of Hood Island are few. They are (numbered and listed back) species of lizards, a very dark race of the yellow warbler, *Parula bicolor*, and a blackbird. There may be doves, but not many. Along the edges of Point Cavallion and Point du Sud are many birds and creatures of the sea. Have taken firm possession. Masked and blue-faced boobies are there by the thousands, and iguanas in herds as large as those at Capricorn Point back on the sand-whitened rocks. At the season when the head iguana rises and begins to compete for the favors of the female and to engage in showing contests, then they undergo a change. Their iron-gray skins become blotched with coppery red, white, and blue as though a corrosion were spreading through their rough armor.

~~patterns of behavior, they stand facing one another bills opposed~~

^{however}
~~But~~ The birds ^{are} for which Hood Island is famous, which
 sets it aside from the other islands ~~is~~ the Galapagos Albatrosses.
 These birds have colonized both ends of the island, and no where
 else in the world are they known to breed. In late May and June
 they lay their single, huge eggs and we found many already in the
~~process of incubation~~ ^{stage}. When brooding they are imperturbable, but
 under extreme provocation will strike at one with their formidable
 bills. A few birds were still engaged in the rituals of mutual
 display ~~that~~ ~~are~~ indispensable to pair formation. Obedient to
 inherited patterns of behavior, they stand facing one another bills
 opposed; in turn they raise their heads to the sky, then like fencers
 clatter their bills together. The duel lasts but a ~~moment~~ brief
 moment when one bird turns away with an air of indifference and
 walks off swaying from side to side as though ~~shaking his~~ ~~off~~ disgusted
 with the whole affair. On land Albatrosses are grotesque birds.
 They waddle around on great webbed feet at the ends of long sickly
 gray legs that support massive, chocolate-brown bodies. They have
 thick ~~massive~~ white necks and heads like stained ivory with beetling
 brows over jet black eyes and immense, over-sized yellow bills.
 When they take to the wing they need a long runway. At Punta Cevallos
 the U.S. Navy cleared a Jeep road for the construction of a radar
 station during the war. The Albatrosses use this road as a
 launching strip. From its upper end they run down towards the shore
 wings flapping and broad feet frantically slapping the ground until
 they get up enough momentum to glide off. Once air born all the
 awkwardness of ^a ~~the~~ creature out of its element disappears and the
 bird becomes the epitome ^e of grace and maneuver.

The only harbor ^{on Hood} ~~on Hood~~ is in the shelter of tiny Gardner
 Island ^{on} ~~lying off~~ the north side of ~~Hood~~ where a dazzling beach

meets and fuses with the deepening azure glaze of the sea. A silhouette of jagged black basalt like a piece of misplaced stage scenery stands in the middle of the small harbor. The usual herd of sealions occupies the beach to enhance with dark brown bodies the wonderful whiteness of the sand. There is constant traffic in and out of the sea. Young animals and cows charge the shore through the ~~clear~~ clear water like torpedoes, but stop abruptly in the shallow edge on their flippers, sleek and dripping. They look around myopically before lumbering up onto the beach to collapse in *seeming* exhaustion. ~~Soon their shiny coats are crusted with sand.~~

When sealions are mortally wounded by sharks, as not infrequently happens, they forsake the sea and with their ebbing strength seek refuge ~~on their ancestral home~~ ^{medium} high upon the shore away from the herd, and there they die. It is as though they feared the ~~sea~~ ^{sea} ~~medium~~, feared to drown more than to die on the hot land, and return at last to ~~the~~ ^{their ancestral} home from which ages ago they began a slow genetic renunciation. Here their roots are buried the deepest and have the strongest attachments. The memory of that remoter past when they first emerged from the paleozoic seas is blurred in the mists of time so vast that scarcely more than a rough sketch of a segmented spine remains, and has lost its atavistic magnetism.

The body of the dead seal performs a more useful function on lean Galapagos land than it would in the sea where its contribution to the wealth of life would hardly be appreciated. On shore it provides protein, ~~which~~ ^{protein} On tiny Wolf Island is in such demand that finches have become blood parasites on boobies, for a variety of birds that have adapted their foraging habits ⁱⁿ ~~in~~ exotic ways to obtain this necessity of life. A dead seal is a windfall source of food ~~for them.~~ With the advance of bacterial corruption, carcasses for other birds.

become fly-blown and maggoty at first, and during the later more ~~and~~ desiccated stages of decay are inhabited by small beetles. These insects and their larvae do not escape the attention of the lava lizards and land birds on the smaller islands. The mockingbirds on Hood have become aggressive predators on the eggs and young of boobies which, when left unguarded, they attack, pecking through the shells and dismembering hatchlings to obtain the protein they need. A dead animal is a less predictable source, but provides temporary abundance which is not neglected. Yellow Warblers on Hood not only forage on the beach for small arthropods but eat the insects they find on carcasses and even peck at decaying flesh. So poor in food resources are some islands that nothing goes to waste.

Hood Island is extremely dry throughout most of the year. Temporary ponds have been found in the interior which are produced by the unpredictable rains that come during the winter rainy season. These bodies of water were probably essential to the establishment and survival of the large tortoise populations that Darwin found. Mockingbirds, the most numerous land bird species on Hood, have adapted well to this xerophilous condition, perhaps obtaining the minimum ~~small amount of~~ moisture they need from dew or by depredation of sea bird eggs. Nevertheless, when fresh water is made available they swarm around eagerly, drinking up a dish full in a few minutes as though, had it not been supplied, they would soon have died of thirst. Likewise, any juicy morsel such as a slice of orange is quickly consumed. When water is first put out only one or two inquisitive birds may be present, but others appear instantly from nowhere, just as frigatebirds drop out of an empty sky the moment the crew on a fishing boat begins to gut a catch of fish. Word gets around by a kind of telepathic communication - by to us invisible

signs - and they come flying in from all directions, crowding and shoving for a sip or two, ~~of the scarce liquid.~~

Punta Suárez at the west end of Hood Island is a bare plateau of lava, sharp-edged ^{with} ~~and~~ perpendicular ^{tides} ~~on~~ the south and west, but slopes off less abruptly to the north ~~side~~ where a short sandy beach has formed in the shelter of a line of reefs. This is the only place a landing can be made, most safely at low tide when the reefs are exposed and give the greatest protection from the surf. The ubiquitous sealions congregate also around this point to bask on the rocks at foot of the cliffs. They plunge into the breaking waves with impunity, and ^{at will} ~~as they chose~~ are cast back onto the shore as harmlessly as is driftwood.

That sealions like humans enjoy a relation to the sea not strictly utilitarian, ^y is demonstrated by their play in the breakers that come curling over the reefs north of Punta Suárez. Here they ride the waves towards shore until the falling crests bury them in foam. Again and again they swim out to meet the incoming rollers and to repeat the cycle, obtaining a satisfaction which we are unable to interpret in any terms other than our own simple pleasure of surrendering to a superior natural force. Unlike a surf board rider who stays on the front of a wave, the sealions ride inside, pushed along by its interior dynamics. Just before the wave breaks their streamlined bodies loom through the concave glassy surface like specimens frozen in blue plastic.

The bare top of the ~~Ø~~ lava plateau is covered with the nests of Blue-footed and Masked boobies, and off to one side segregated from the boobies by those mutual understandings that order the groupings of different species in bird colonies are the Albatrosses. The Masked boobies breed earlier than the Blue-footed so that during our visit early in June the young of this species were far advanced

towards adulthood, whereas the Blue-foots were still courting or ^{the} beginning incubation. The courting behavior of Blue-footed boobies ~~includes~~ in which, with preoccupied deliberation, he ~~has some entertaining aspects the most comical of which is a slow alternately raises his feet~~ ^{and} seems designed to advertize ~~foot lifting habit.~~ The ~~performance~~ ^{rocking} bird, ~~swaying slightly, slowly~~ their blueness. ^o ~~raises his blue feet alternately with a patting motion as though he were feeling the texture of the ground.~~ The sexes of Blue-footed boobies can be distinguished by two characteristics: by a sexual dimorphism of the iris, and by voice. The iris of the male is pale yellow, that of the female spotted with black giving it a ragged appearance. In voice they differ quite strikingly: during the change-over ceremony at the nest while incubation is in progress the male greets his mate with frantic squeaky whistles as he comes to which she responds with lower key hoarse croaks. flying in, ~~her response which is equally enthusiastic, is a series, in a lower key, of hoarse croaking sounds.~~

The crashing waves against the cliffs of Punta Suárez and the jets of spray ~~from blow holes~~ contribute a wild grandeur to the scene unmatched elsewhere in the Galapagos Islands. The loneliness and isolation of this rocky point is only reinforced by the ~~usual~~ ^{usual} silent activities of the boobies, by the ~~by~~ impassive breeding albatrosses, the basking sleepy seals, and the statuesque clusters of marine iguanas, circling sea birds, the iguanas, and the sleepy seals. The roar of the surf heard at the cliff top drowns out all the faint bird cries and envelops one in ^{vibrations} ~~waves of sound~~ that ^{become} ~~seem at first like~~ a great stillness, but as one listens intently the silenced world sends a message from the sea. A structure ^{resolves} ~~develops in~~ The inchoate sound/and one begins to hear the ~~quiet and~~ ^{pulse} ~~breath of the waves.~~ pulse and cadence of the waves.

One of the peculiarities of this coast is the occurrence of blow holes. The sea surging into submarine caves in the lava compresses great volumes of air which force trapped water with

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explosive energy through vents above tide level. The dynamics of a blow hole are similar to a geyser with the difference that ~~in~~ the latter is powered by steam. Water squirts out ~~in~~ a prolonged rush, rising fifty or sixty feet into the air, ^{that} ~~and~~ can be seen as a cloud of spray above the plateau from the anchorage north of the point. As the eruption begins a ~~rushing~~ ^{rumbling} noise is heard followed, with the first burst of water, by a sound like a violent gust of wind that continues to the end.. Spray fans out from pointed jets of water, ~~as though a fire hose were being rapidly turned on and off.~~ And as the white cloud rises higher and higher a rainbow appears, its arc through the drifting droplets immutably fixed by the position of ^{him} ~~the sun~~ and ~~he~~ who sees it form ^y and of the sun.

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The last island visited on this southern cruise was Floreana where we stopped at little Champion Island to see its long-billed mockingbirds found only there and not on Floreana from which it is separated by a narrow strait. The explanation offered for this curious distribution is that they once were common on the larger island but were exterminated there by fer~~al~~ cats, and, unable to recolonize their former ~~range~~, have maintained themselves in limited numbers on Champion. ~~The island is also renowned for its variety of opuntia with hair-like spines and trunks of greater girth than any in the Galapagos Islands.~~

~~We went on to Onslow Island not far from Champion.~~ ^y we went on the Onslow Island, colloquially called the Devil's Crown. It is actually a ring of small pointed islets, the remnant of a submarine crater. Oddly, the steepest of these ~~pin~~ ^{cles} has been colonized by a stand of Jasminocereus cactus that grow as a ~~mini~~ ^{ature} forest on its very summit.

Before setting our homeward course for Santa Cruz we landed at famous Post Office Bay where the old keg is still

maintained in which letters addressed to any country in the world may be ~~possibly~~ deposited postage free with the assurance that they will ultimately be delivered. This was the end of our last voyage. Our last week at Academy Bay we spent recreating our equipment and preparing to leave the Galapagos Islands, perhaps for good. It was not a prospect that I for one entertained with pleasure

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Chapter XI
Plaza Island Again

While we were preparing to leave by the Cristobal Carrier ~~on its ~~XXXX~~ June return trip to~~ ^{for} Guayaquil, we received word that a DC3 flight was scheduled to Baltra by the Ecuadorian Government Airlines ~~TAME~~ and that space would be available for us if we wished to fly back. We decided to accept this offer, not because it would allow us a few more days in the Galapagos escape the uncomfortable sea voyage, but because we would ~~avoid four uncomfortable days on the Carrier~~. Also feeling very sad at the prospect of leaving, we welcomed the opportunity to make the transition to civilization as quick^{ly} and painless^{ly} as possible. By flying we would have one last short cruise to Baltra with a few hours stopover on Plaza Island, ~~where we~~ which was the first place we visited three and a half months ~~ago~~ before.

All the equipment, ~~and~~ except for two cameras ~~and most of~~ ^{out} ~~personal effects~~, was crated and shipped to ^GGuayaquil on the Cristobal Carrier. The last day we had farewell to our friends in the Nixe and Charybdis at Academy Bay, and early the following morning ^{we} set sail for the last time around the eastern shore of Santa Cruz. Before noon we were anchored in the channel between the two Plaza Islands and immediately went ashore. The sealion herd was still there on the same rocks ^{grown bigger,} ~~although~~ and the young sealions ^{were} ~~were~~ ^{paying} ~~paying~~ in the same tidal pools. ~~But they seemed bigger.~~ Swallow-tailed gulls on the cliffs across the island greeted us with the same shrill cries, but they were caring for young now, ~~not incubating eggs their eggs had all hatched.~~ Aside from these similarities the entire aspect of the island had changed. Before, there was ~~all this~~ an atmosphere of spring; ~~this time~~ now it was ^f autumn. On our first visit the clifftops were green with Portulaca lutea thick with lemon yellow flowers; ~~all~~ the ground cover ~~was~~ everywhere

was alive ^{and} with the freshness of ~~spring~~; the opuntias were still in full bloom. The yellow blossoms of the giant opuntias were opening all along the margins of ^{turgid} ~~the~~ ^{drooping} pads. On this day in June the Portulaca had long since gone to seed, withered, and dried to a ^{drab} ~~gray~~ crisp/remnant of its spring ^{time} ^{luxuriance}. The darker green succulents which had covered ^{much} ^{space} ~~most~~ of the ~~ground between the~~ ^{l.c.} ^{were} not occupied by Portulaca/~~was~~ now a deep crimson islands scattered over the ashy gray surface. The only vegetation which had not changed ^{were} ^{on} was the yellow-green lichens ^{that} ^{clung} to the ~~scattered~~ ^{strewn} lava boulders ~~scattered~~ ^a across the top of the island. The short growing season had come to an end, and ^a quiet dormancy was settling over the Galapagos to await ~~the~~ ^{with} the next uncertain ~~period of~~ rain.

We slept that night on board our yachts in Baltra harbor, ^{we were up} ~~and were up~~ At sunrise, and ready to depart these Encantadas as soon as the ^{big} ~~red~~ and white plane came circling out of the sky. The plane rose smoothly from the paved runway and took off ~~in~~ east by south. ^{watched} We ~~saw~~ the island of Santa Cruz drop slowly away on our right, and saw Barrington, ~~where we had~~ ^{recently} landed, so tiny in the big sea, disappear beneath a ~~veil~~ veil of mist. Then for a few minutes we skirted the north coast of San Cristobal recognizing few landmarks until we had a glimpse through the broken clouds of Punta Pitt, the easternmost land ^{of} the Galapagos Archipelago; and so our farewell to the Galapagos from the sky. Ahead lay the empty Pacific for six hundred miles to the continent of South America.