

## CHAPTER I

### The Reality of the Islands

The Galápagos Islands are fiercely beautiful <sup>peaks of</sup> volcanic ~~rocks~~  
~~peaks~~ that have been erupting from the Pacific floor for millions  
of years. According to some geologists they are surface mani-  
festations of the largest active volcanic area in the world.  
The oldest islands have been inactive for a very long time while  
the forces of erosion have obliterated the harsh features of  
their igneous origin and smoothed their contours. They have be-  
come clothed in a vegetation whose density and spyness replace  
the original menacing hostility of their geological structure.  
On the other hand some of the youngest islands have been in  
eruption within historic times - one as recently as two years  
ago. Altogether they are inhabited by a strange variety of unique  
animals and birds that evolved from ancestral colonizers through



processes of biological adaptation which have given the islands their renown.

My expectations of what the Galápagos Islands would be like were far from being disappointed. The actuality so greatly exceeded my imagination that all preconceptions have become lost in the labyrinths of my memory. Today I can no longer recall what I once thought they would be like. Those first images have been overwhelmed by the stronger ones of first hand experience. The sight of an ash and pumice cone a third of a mile in diameter, its sides sliced down by the sea, containing within its walls a shallow blue lake ringed with green, around which waded a flock of high-stepping, pink flamingoes, blotted out all vicarious images of crater lagoons. My first walk on the ropy surface of a lava flow as freshly iridescent as the day it gushed in liquid stone from a volcano's fiery mouth, obliterated all impressions formed by descriptions of volcanism in the islands. And when I watched from the deck of our sloop on a moonless night the trail of milky phosphorescence streaming away in the wake, all my preconceived ideas of a dark tropical sea were destroyed forever.

The Galápagos Islands, in 1892 renamed by the Ecuador government the Archipelago de Colon, straddle the Equator 650 miles west of South America. The climate they enjoy and the peculiar animal life they support are determined in large measure by the Humbolt Current which bathes their southern shores. Originating in the cold Antarctic seas, this current carries with it from the depth of the ocean rich mineral and organic nutrients which help support extensive fish and bird populations. Flowing north along the coasts of Chile and Peru, the current turns west off



northern Peru and travels out into the Pacific just south of the Equator to touch the Galápagos Islands.

By riding this current at a time long past, one of the small species of South American penguins probably attained its farthest northward extension. How many times this voyage was made is unknown, though certainly the Galapagos colonizers have long been out of contact with their southern relatives, for without isolation they could not have developed the characteristics which they possess. Another colonizer, the fur seal, this one from the northern Pacific, extended its range to the Equator, perhaps at the time of North American glaciation. With the fur seals also all connections with their ancestral relatives have been lost.

Whence came the giant tortoises, the Galápagos, for whom the islands were named, is a deep mystery. The most probable source for them, as for the iguanas, the Darwin finches, and the other land birds, is the South American mainland. Over the ages a slow trickle of animal and plant life has arrived at the Galápagos Islands by wind or by rafting on the ocean currents. The migrants have been accidental and they have been few and far between. Had it been otherwise the isolation of the occasional arrivals would have been broken, and their evolutionary adaptation to the special, austere conditions on the islands would have been interrupted by competition. The number of species found there today would then be greater; and their ancestral relationships to continental types would be more clearly apparent, and their specialization and uniqueness less apparent.

Although the big tortoises and iguanas first attracted the attention of early visitors to the Islands, the remarkable



tameness of all the animals and birds was a cause for comment and awe. But, the typically human impulse of early explorers was to kill the creatures which came within range of their clubs. Ship logs contain many accounts of the vulnerability of the animals. Galapagos hawks whose curiosity led them to alight beside sailors from whaling ships were rewarded with blows. Other smaller birds were killed too, not for food as in the case of the tortoises and land iguanas, but simply because it could be done so easily. The vegetation, which in many respects was no less remarkable, did not receive the same notice as the birds. Its thorniness and impenetrability were subjects of complaint by those ship crews who attempted to make their way inland in search for water, but relationships to, and differences from, mainland forms went largely unnoticed. Few accounts are found of the giant opuntia, the tree form of prickly pear cacti, with orange-brown trunks more than three feet in diameter; or the scalesia, members of the composite family to which the sunflowers belong, individual varieties of which rivaled forest trees in size and are referred to as sunflower trees because in bloom their crowns are covered with small, white daisy-like flowers.

Many plants that grow in the Galápagos are found throughout the tropical world, whereas other kinds that might be expected to occur are missing. Thus red mangrove encircles the shores of the lagoons where the deposition of mud and sand affords favorable soil for its arching roots. This species of mangrove is the same as that found all along the coasts of tropical America wherever a favorable habitat is available. On the other hand, no native palms grow on the Galapagos Islands. No coconut palms fringe its



white shell beaches, and even those brought in and planted sicken and die after a few years of feeble growth. Some subtle features of the environment are unfavorable for coconut palms; inimical factors in the climate or the ocean water prevent them from thriving. If this were not the case coconut palms would long ago have become established from the numerous available sources in the Pacific.

The history of the Galápagos Islands, their discovery by the Spaniards in 1535, their use a century later as a base by British buccaneers and privateers, and as a watering and provisioning place for American and English whalers in the eighteenth and nineteenth centuries has been well chronicled in various publications and is beyond the scope of this book. My purpose is to describe as they are today these islands with their extraordinary forms of life, and to urge the need for their preservation against short-sighted commercial exploitation and over-zealous scientific collecting. They are a natural museum, unmatched anywhere in the world, of evolutionary processes at work under simplified conditions. Here Darwin gained his first insights into the origins of species. Since then many scientific expeditions have visited the Galapagos, and many studies made there have cast light on the forces of organic evolution that still continue today. Man's understanding of nature is an ever-growing body of knowledge to which these islands offer undeniable opportunities for increase. To allow these sources of addition to human wisdom to be wasted or thrown away would be the ultimate in short-sighted folly. Not only as a laboratory for scientific knowledge should these islands be preserved, but they should be preserved because they exist as one of the wonders of the world. Just as efforts are expended to save the whooping crane, to



save the last of the redwoods, the Grand Canyon, wilderness and primitive areas and threatened species all over the world, so should effort be expended on saving the incomparable wonders of the Galápagos Islands.