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Strange Habits of Familiar Moths and
Butterflies

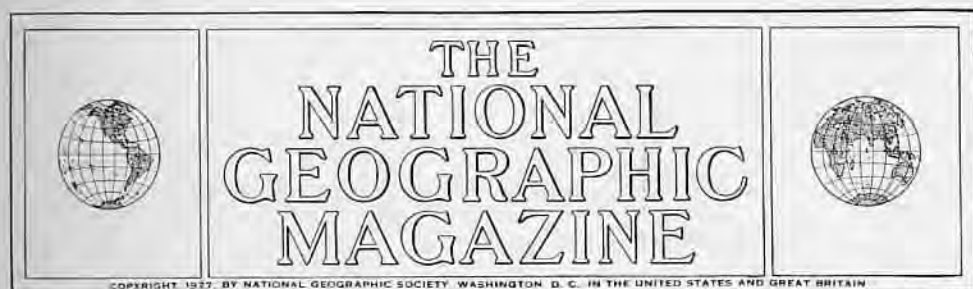
With 44 Illustrations

WILLIAM JOSEPH SHOWALTER

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SINDBADS OF SCIENCE

Narrative of a Windjammer's Specimen-Collecting Voyage
to the Sargasso Sea, to Senegambian Africa
and Among Islands of High Adventure
in the South Atlantic

BY GEORGE FINLAY SIMMONS

CURATOR OF ORNITHOLOGY, CLEVELAND MUSEUM OF NATURAL HISTORY, LEADER OF THE MUSEUM'S
SOUTH ATLANTIC EXPEDITION, 1923-1926

With Illustrations from Photographs by Members of the Expedition

MANY an Anglo-Saxon is sea rover and pirate at heart and longs to wander and seek the queer animals of the earth. To go down to the sea in wooden ships, after the manner of the adventurous Phœnicians and the hardy Portuguese, is the dream of the eternal boy. And all through the ages we shall still have the appeal of pirates and pieces of eight, of the Jolly Roger and the Spanish Main, and of wooden ships and men of iron.

Civilization, however, has driven piracy from the seas, and maritime commerce has become almost too mechanical through constant regulation. Now few opportunities remain to ship before the mast. There are the scattered banks fishing fleets, a few racing yachts, a coasting vessel or two, and there is the treasure ship seeking the treasures of natural science—gems from Davy Jones's locker, strange trove from untrod isles, living jewels from the coffer of Madame Pandora.

Huxley cruised the Australian waters in the *Rattlesnake*; Darwin went on a protracted voyage around the world in the

Beagle; Wallace explored the Malay islands and the Amazon in small boats, and Wyville Thomson and Moseley and John Murray studied the sea and its islands and shores from the decks of the *Challenger*.

Steam came into use in exploration with the *Challenger*, which proceeded principally by sail and set an example for the Earl of Crawford's *Valhalla*, Robert E. Peary's *Roosevelt*, Captain Robert Falcon Scott's *Discovery*, and Shackleton's *Quest*. Steam alone propelled the *Albatross* for Agassiz and the *Valdivia* for Chun; they moved quicker, but had to return home sooner.

The task of these nautical naturalists was to make the sea and its distant isles give up their secrets. The key to their scientific problems is found in specimens slowly amassed under carefully observed conditions.

Once the doors of marine mysteries are unlocked, then man will feel more confidence in his ability to master Nature. Light will also be cast on the problems of continental plant and animal distribution, on the methods and results of evolution,



Photograph by Oliver F. Holden

“EAST OF THE SETTING SUN”: THE BEGINNING OF A VOYAGE OF TWO AND A
HALF YEARS

The *Blossom*, towed down to an anchorage in Gardiners Bay at the north end of Long Island, restowed her equipment and stores before putting to sea (see text, page 10).

and on possibilities of improving man and his domesticated plants and animals.

NEPTUNE'S SEA-BIT-TEN STEPSONS

All of this past was ours, as we planned the Cleveland Museum's South Atlantic Expedition. We were eager for the sight of the strange birds and animals needed in our collections, and we openly admitted that we longed for adventure on the decks of our little windjammer headed for foreign lands.

Of our original party of sixteen, only four were to return at the end of two years and a half; for we changed crews twice, sending men home ill with African fevers or worn with exposure and the dull monotony between islands, while we were spending 250 days under sail, logging 20,000 miles.

It has been well said, of organizations running the alphabet from *a* for army to *y* for yacht, that a cook is more important than a captain. Now, I always stood on the good side of William Hall, for he was the cook, and by force of circumstance I was only the captain. W. Kenneth Cuyler, big, red-headed biologist in charge of field collecting, and "Long John" da Lomba, who knew ships and the sea, also stood well with William; so they, too, completed the cruise.

William cooked, fished for specimens, and at times skinned birds. Cuyler ranged and clambered, studied and collected, and helped Long John with the ship and the boats; and Long John himself—well, John looks more like a pirate than even "a



Photograph by Geo. Finlay Simmons

HOOKS BAITED WITH SILVER

Long John clung to the schooner's bowsprit and fished for the golden dolphin, hoodoo fish of the deep-sea sailor.

pirate right out of a book." However, in spite of the silver earrings which he sometimes wears, John is anything but a pirate; perhaps once a "buckaroo," when he strode the decks as chief mate of the famous whalers *Daisy* and *Chas. W. Morgan*. Now he is gentle and kindly; but even with the passage of years he will never forget how to handle a whaleboat through bad surf or in front of wave-beaten rocks in mid-ocean.

A CHALLENGE TO MARITIME SUPERSTITION

We took the albatross, the golden dolphin, Mother Carey's chicken and Mother Carey's goose, Pharaoh's chicken, griffons



Photograph by Geo. Finlay Simmons

LONG JOHN GLOATING IN THE FACE OF A HOODOO

For many centuries mariners have frowned at the catching of the beautiful, changing-hued dolphins, alleged to bring luck and fair winds to the sailing ship (see text below).

and sea serpents, and many other animals of fable and antiquity. The violent death of some of these is considered by mariners to be a sure way of bringing trouble on one's head. And when one starts out avowedly to hunt for trouble he usually finds it.

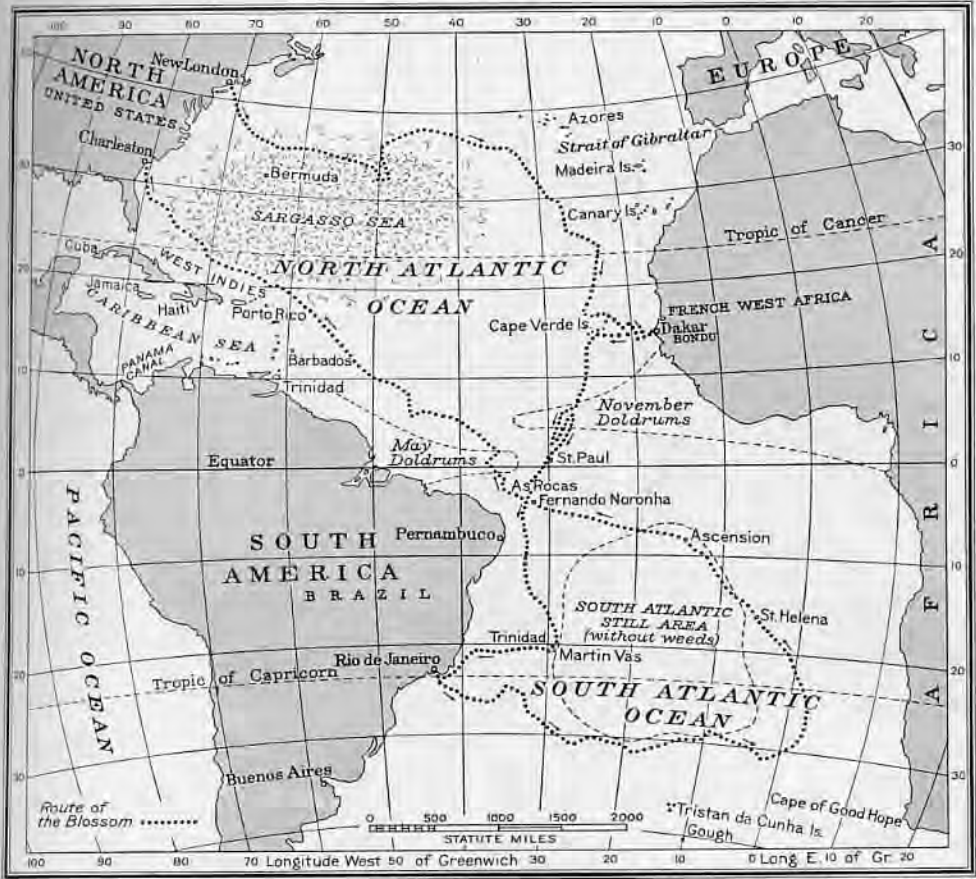
Thus did our men explain why ill luck dogged our schooner's wake. We met storms, head winds, and disheartening calms; men were sick from fevers and exposure, usually when they were most needed; our small boats were battered on hidden reefs and iron-bound shores, and one whaleboat was wrecked in making a difficult landing. In distant ports, of Africa and South America, there were wearisome delays while the schooner underwent the repairs always needed after many months at sea.

Fortunately, the tragic drama at times became melodrama and even light opera—a background of native huts with too much covering and native maidens with too little; guitars softly strumming the

plaintive minors of a primitive people; the hypnotic beat of a Senegambian tomtom, summoning ebony damsels to quiver in the throes of a voodoo dance; shabby beach-combers and thirsty mariners; soldiers-of-fortune and the multihued warriors of colorful nations; and girls to lure the sailors from their duty—girls ranging in complexion from the sun at high noon, through the *café-au-lait* of Brazil and the Cape Verdes, to the blackest blue-black of Africa.

VICARIOUS ADVENTURERS

The Cleveland Museum of Natural History is a comparative infant in the circle of scientific institutions, for it was not organized until 1920, by Harold T. Clark, Lewis B. Williams, Alwin C. Ernst, and Dr. George W. Crile. Infused with the enthusiasm of a loyal group of sponsors and patrons, at the tender age of two and a half years it looked about for fields of endeavor beyond those of Ohio. At the suggestion of a friendly "elder brother"



Drawn by James M. Darley

THE ROUTE OF THE "BLOSSOM"

Embarking on the coast of New England in a three-masted schooner, smaller than the *Santa Maria* of Christopher Columbus, the author and fifteen other men of the Cleveland Museum's South Atlantic Expedition voyaged 20,000 miles by sail alone in a search for rare birds and queer beasts of land and sea. The *Blossom* visited the famed Sargasso Sea, prowled four and a half months among the islands of the Cape Verde Archipelago, and then sailed over to Senegambian Africa, where her men spent another four and a half months in the interior seeking Sudan birds and big game. South Trinidad, the little-known Martin Vas group, Rio de Janeiro, St. Helena, Ascension, Fernando Noronha, and Rocas Reef were then visited and studies in biology carried on.

among museums, it decided to investigate almost inaccessible islands and shores of the South Atlantic, of which but little was known.

In addition to specimens secured on the islands visited, the Cleveland Museum was to receive, for undertaking this difficult work and bringing study material to America, many rare birds from North and South America and the South Pacific islands from the collections of Dr. Leonard Sanford and the American Museum of Natural History.

Mrs. Dudley S. Blossom, trustee of the Cleveland Museum, made the voyage

financially possible, and Captain George Comer, retired from the sea after half a century on sea-elephant ships, who had collected birds in the Antarctic and seen service with MacMillan in the Arctic, was sent along the New England coast to search for sailing ships.

There was but small choice, and from the few available the *Lucy R.*, a Nova Scotia three-masted schooner built in 1920, was purchased for the voyage by the museum's director, Paul M. Rea, and placed for overhauling and refitting on the ways of a New London, Connecticut, shipyard.

Warehouses in the old whaling port



Photograph by Geo. Finlay Simmons

THE "BLOSSOM" CREEPS ALONG THE EDGE OF THE SARGASSO SEA

For centuries a large area in the Atlantic, filled with weird and shifting masses of gulf-weed (see map, page 5), was supposed to be the graveyard of the derelicts of the sea. In the course of its cruise of two and a half years the *Blossom* passed through this area twice and many days were spent in dipping, searching, and studying its peculiar fauna (see text, pages 13-14).



Photograph by J. Titta Vanzetti

A BUFFET LUNCHEON

Sticklers for etiquette might find fault with the author's interpretation of what the well-dressed man should wear for dinner on the rolling decks of the *Blossom*. Which fork should be used for the "salt horse"?

of New Bedford, Massachusetts, were searched for gear, whaleboats were chosen, and a selected lot of old whaling casks was set aside for water.

I came east from Texas to assume the leadership of the expedition and made the acquaintance of the little schooner just as she was ready to go on the ways.

SHOES AND SHIPS AND SAILING WAX

Almost complete reconstruction of the ship was necessary to make her ready for the long ocean voyage. Her decks were torn open, her hackmatack frame strengthened by the addition of many oak knees, her keel increased, her hull below the water line covered with heavy copper sheeting.

The whole appearance of the craft was changed by the addition of an enlarged cabin aft, with eight tiny cubbyholes of staterooms for officers and scientists, a deckhouse forward, a heavy windlass with new Samson post and bitts protected by the raised decking of a new forecabin head, side davits for the whaleboats and stern davits for the dory, and heavy ground tackle for holding the ship in difficult anchorages.

Fine wireless equipment was used only a few times during the early months of the expedition. Sea water went through everything aboard in bad weather, and men could not be spared from the decks to help recondition the set. Still less could men be spared later, when, with



Photograph by W. Kenneth Cuyler

PRIDE GOETH BEFORE A LANDFALL

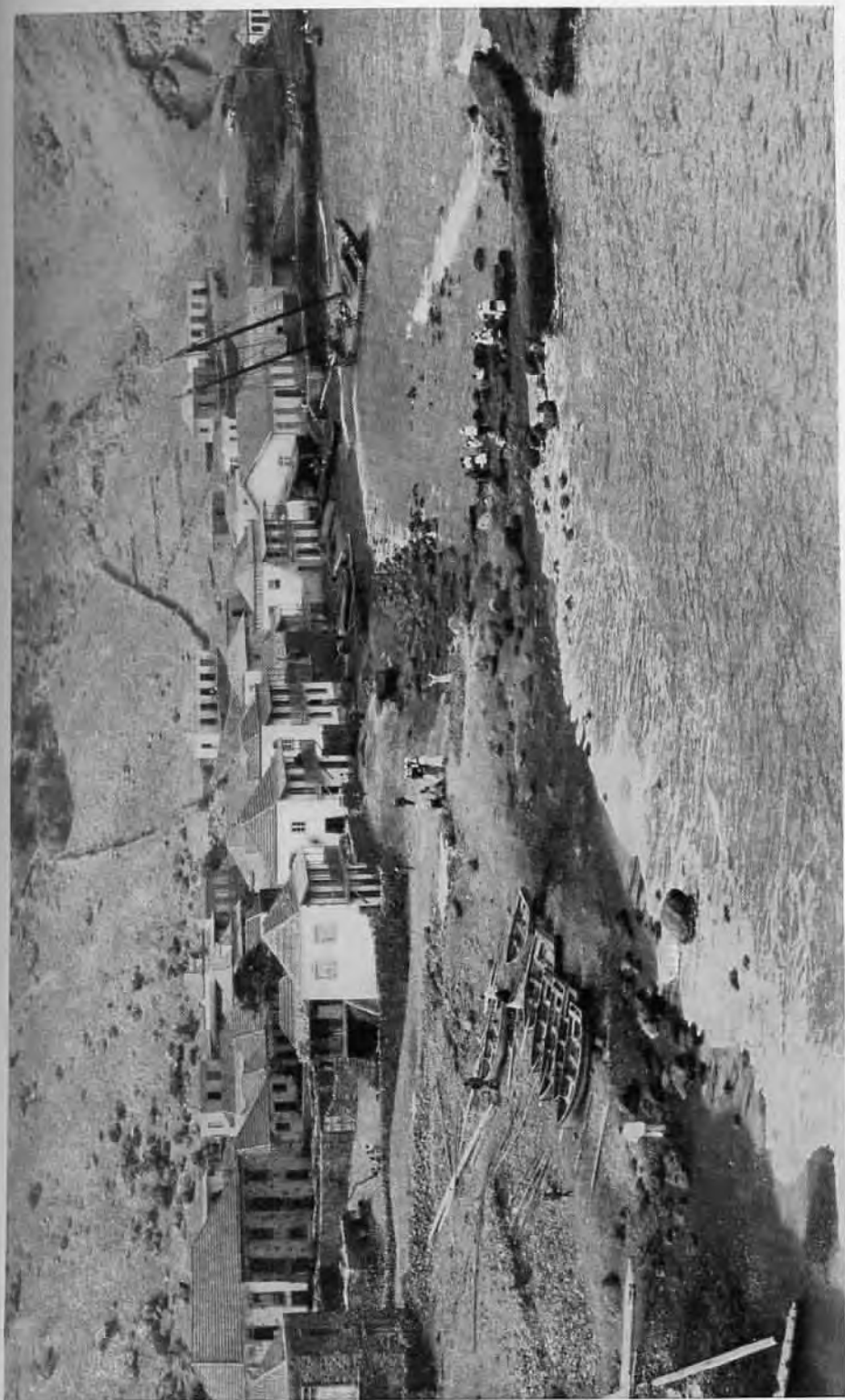
Faces emerged from the foliage as the *Blossom* ran down the trades beyond the Sargasso Sea.



Photograph by Geo. Finlay Simmons

CUYLER TAKES A TRIMMING IN GOOD NATURE

The ship's barber shop was presided over by Cabin-boy Luis, who snipped and whittled at odd moments on the fore-deck.



Photograph by Robert H. Rockwell

THE PORT OF MISSING WHALEMEN

Furna, the tiny port of Brava, is hidden in a notch among gigantic hills that face the savage snarl of the free-blown trade winds. Here, back to their people in the Cape Verde Islands, went the "Portygee," one-time whalemens on American ships, once they had accumulated a small competence (see text, page 18).



Photograph by Geo. Finlay Simmons

THE BEAUTIFUL HORSESHOE HARBOR OF PORTO GRANDE

This, the capital of St. Vincent (São Vicente), is the most perfect port in the Cape Verde Archipelago. It is protected on three sides by mountains and has its entrance partly shut by the massive island of St. Anthony (Santo Antão), rising in the hazy distance (see illustration on opposite page).

the crew ill from exposure and tropical fevers, the specialists worked with sails and sailors helped skin birds.

Needles and pins, shoes and sou'westers, books and beans and shotgun shells—bewildering were the kinds of supplies needed to make the ship a self-sustaining world.

The lower part of the hold was pretty well filled with the old whaling casks, lying on their sides and containing the major part of the water supply. On top of these were stowed barrels, boxes, and crates of food; bales of excelsior and sacks of cotton for the taxidermists; and many cases of medical supplies presented by the United States Navy.

DOWN TO THE SEA IN SHIPS

We cast off shore lines as a depressing drizzle enveloped the Connecticut coast. Despite the rain, throngs of people covered New London's water front and cheered us, as a tug towed us down the Thames to Gardiners Bay, where Cap-

tain Kidd had anchored many decades before (see page 2).

We lay at anchor for several days, getting things shipshape and making ready for sea. Decks were high with equipment overflowing the hold—so high that the men, as they worked, could scarcely see the surrounding hills and shores tinted red with the foliage of fall.

Finally, with all repaired equipment and added stores back in place aboard, at noon of Saturday, November 10, 1923, we weighed and catted our anchors in the bows of the little schooner, slowly came about on an unrippled sea, and moved gently eastward on a southeast breeze.

During the afternoon we passed Plum Gardiners, and Gull Islands; but, after dark, when the tides were setting strong against us, we made a long tack toward Long Island, lying south of us, came about, and made it past Block Island and Montauk Point, and slid comfortably out on to the gentle, open sea.

A tiny, black-hulled schooner . . .



Photograph by Geo. Finlay Simmons

COALING STATION OF THE WORLD'S TRAMP STEAMERS

Vessels lie in the Porto Grande harbor to take on fuel from the four big stations along the shore. The three masts of the tiny *Blossom* show on the near side of the tramps, beyond the coaling piers, while nearer at hand, on the left, are the inter-island fishing smacks and schooners. This illustration and that on the preceding page form a panoramic view of the harbor.

sixteen hands, all told, . . . perhaps sixteen men for some dead man's chest of a treasure islet . . . turning back the hands of time, watching America disappear into the night, gone from the map . . . a ship one-third the size of the *Santa María* and much smaller in capacity than even the *Mayflower*.

LIFE ON THE ROLLING DEEP

We left the coast of the United States in fine spirits, as our ship, rechristened the *Blossom*, cut quickly across the cold Labrador Current, left the tide rip and its petrels and shearwaters behind, and entered the warm waters of the Gulf Stream. A beautiful day or two, and then it looked as if we should never make it across to the African islands. It seemed as if we were out in the wintry Atlantic to stay.

We were subjected to every form of bad weather and unfavorable wind; it was a life in dripping oilskins, up at all hours to change tackle and come about with a changing wind. Bunks were soggy

and food was scanty and ill-cooked. Weather was too bad to permit us to open the hatch for stores, and William's pots and pans leaped to the deck every few moments. No wonder our college-boy sailors soon had enough of adventure and swore they'd walk ashore at the first port, if they lived long enough!

We crossed the stormy North Atlantic at a time when the daily newspapers frequently carried news that steamships had been smashed to pieces at sea and foundered. A big steamer fights the sea, bucks the great rolling masses of blue water, and comes off bested. But the little sailing ship does not try conclusions with the waves; when properly handled, she heaves to in bad weather and rides the storm like a Mother Carey's chicken.

IN NORTH ATLANTIC STORMS

After nightfall on November 16 a storm tore down from the starboard quarter and caught the little ship under full spread of canvas. The man at the wheel blanched, as the ship heeled before



Photograph by Geo. Finlay Simmons

BUNGALOWS ON HIGH IN PORTO GRANDE

Small houses, with thick walls of volcanic stone and roofs fashioned from flattened gasoline cans, are half buried in the cinder slopes overlooking St. Vincent's harbor (see pages 10-11). Thus does the dweller on this desert island escape the full blast of the tropical heat.

the blast of wind-driven rain; he lost his head for a moment and put the wheel hard down. The *Blossom* lay broadside to the gale and the tremendous piling seas. Her lee rail was below the water, and the seas poured over her high weather rail as if over the proverbial half-tide rocks. The ship heeled so far that it seemed for a moment as if she must capsize. Then, wheel over, and away. . . .

Navigator Chantre clung to the tilting, sloughing deck and brought the wheel back, inch by inch, until she was hard down; and the *Blossom* came slowly about to face the gale.

Cuyler, worth three men in a pinch,

took Moses forward with him, and the two of them began taking in headsails. A great sea swept over the starboard bow, poured over them, and beat them about, as they clung to the foreshrouds. Tons on tons of water poured down the forecastle companionway, which had been left open in spite of warning.

The boys did not have to be called a second time. They boiled on deck like drowning rats out of a hole and set about to help take in the topsails. For fifteen minutes it was touch and go, whether we should lose our masts or capsize before we could take in the heavy canvas; but the wind hauled a bit, we headed into



Photograph by Geo. Finlay Simmons

PIPE SMOKING IS BECOMING FASHIONABLE AMONG THE CAPE VERDE ISLANDS WOMEN

These sturdy women porters of Porto Grande carry and balance on their heads all loads except their children, who usually ride astride one hip (see text, page 18).

the gale, took in most of the sails, and then raced away before the storm.

For days we beat under darkened, angry skies and were buffeted by gale after gale, with the wind howling at 80 miles and huge seas piling up behind and rolling down on us. The ship climbed each mountain of water swiftly and hung precariously for a moment between sea and sky before dropping away into a great yawning valley.

At times the *Blossom* tossed like an eggshell; seas shook and poured over her in cascades. Water ran through the rudder well, worked into the cabin and hull, oozed into bunks, and soaked our clothing.

THE FRINGE OF ATLANTIS

We spread just enough canvas for steerageway, and both pumps were manned two hours out of every four. Still the water worked up in the hold, and the heavy stench from the bilges filled the cabin, where air became so unbearable

with portholes closed that we stayed on deck, crawling under piles of sails to sleep fitfully.

It is in mid-Atlantic that Atlantis, mythical continent of the sages, is believed by many to lie submerged. Man has not yet plumbed these depths in search for Plato's lost cities. Perhaps Atlantis does lie here, under pressure of the middle deep, with the great current of the Gulf Stream circling about it. We cannot tell, but we are just as much interested in the large, still area of *Sargassum* weed which lies above it.

There had been adventure and romance here. Columbus entered the Sargasso Sea and must have been as perturbed as his crew when he sighted the weird and shifting masses of gulfweed which blanket the ocean in great patches of many acres, stretching beyond the horizon. For centuries this large area was believed to hold, in the center of its great tangle, all the derelicts of the sea, a graveyard of hopes outward bound, a "city of lost ships"!



Photograph by Geo. Finlay Simmons

A DAUGHTER OF THE DANCE

The throbbing of drums on Santiago Island urges supple maidens to undulate their grassy skirts and keep the older people singing the high-pitched "morna" and treading a serpentine dance.

We eyed those fields from the quarter-deck of the *Blossom* on a fair day. Under a blazing sun we dipped rough masses of brown seaweed on to the decks, where it was pawed over for specimens. Hollow floats, or air bladders, hold the small patches of weed close to the surface. It has neither long tentacles nor strong ones with which to entangle passing ships.

More than two years later we found, when we entered the corner of the Sargasso Sea in its southwestern area, between eastern Cuba and Bermuda, much thicker areas of the weed, as if it had drifted gradually southwestward before northeast winds, currents, and squalls, which have scattered and spread the main body of the dread sea.

Our days we spent dipping, searching, and studying the peculiar fauna of the area. Portuguese men-of-war occasionally floated in clear water between the masses of *Sargassum bacciferum*, sheltering between their stinging tentacles the queer little Portuguese man-of-war fish.*

* See "Interesting Citizens of the Gulf Stream," by John T. Nichols, in the NATIONAL GEOGRAPHIC MAGAZINE for January, 1921.

Under the weed itself we found tiny infants of the ocean giants: the sailfish, jackfish, bonitos, and sunfish; and more than a score of species which would never grow larger than a few inches, especially the coral-tailed filefish, trigger-fishes, the burr-fish, the pipefish, and two kinds of porcupine fishes.

Most abundant of all, however, and more abundant even than the blue-dragon slugs and the peculiar crabs of the weed, were the little frogfish cannibals with their enormous maws. Several of these were put in a salt-water basin with highly prized specimens, which included a rare little butterfly fish. A moment later the other fishes were gone, and the swollen stomachs of the cannibals told the story. We quickly cut them open, and out swam the little Jonahs, uninjured!

WE GET THE NORTHEAST TRADES

We could easily understand why the Sargasso Sea is shot with wild tales of windjammer days, for we were held in the weed for more than a week—held not by the weed itself, but by the lack of wind or current to take us elsewhere.



Photograph by Geo. Finlay Simmons

A POSSIBLE FUTURE WINTER RESORT FOR AMERICAN VISITORS

Well-paved streets, neat and pastel-tinted houses, and the whitest Cape Verdean islanders are found in the chief village of Brava, on the southern edge of Atlantis.

Then squalls treaded along the north edge of the Sargasso Sea and soon we were moved out of its influence.

Head winds from the east kept the ship beating northeast and southeast in long tacks, a windjammer indeed, making but little progress. But when the northeast trades picked up, once more we sailed, down to the beautiful archipelago of the Cape Verde Islands. The sea became populated with steamers and birds; porpoises played about the ship and were harpooned for our museum collections.

The men were hanging from the rigging as we came to anchor in the port of São Vicente after 40 days at sea—hanging by their hands and feet, as they cheered arrival at land, not triced by their thumbs, as in days of yore.

BLACKBIRDERS' ISLANDS

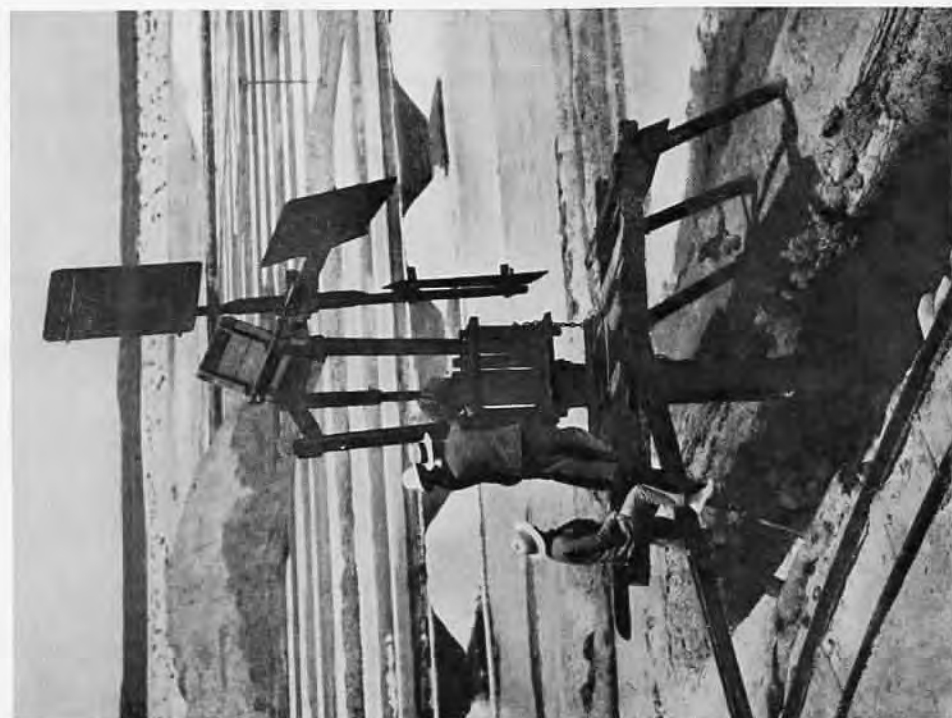
The Portuguese archipelago of the Cabo Verde, lying several hundred miles out in the Atlantic off the northwest shoulder of Africa, is especially interesting to the zoölogist, for here he finds a comparatively little-known Old World group cor-

responding in size and general position to that of the Galápagos,* mainly on a study of which New World archipelago Darwin lased his theory of the origin of species by natural selection.

Especially interesting are the Cape Verdes when one learns that Darwin collected there a few specimens at the beginning of his famous voyage on the *Beagle*. Nearly a century after Darwin and long after the islands had been for decades a clearing house for slave traders, in the days before the Civil War in America and before Great Britain's battle fleet drove blackbirders from the sea, the collectors of the *Blossom* spent four and a half months gathering specimens about and over the nine larger islands, five islets of considerable size, and many off-lying rocks.

There are fishes in abundance about all the islands, and these were sought for in spare moments; but the principal work of the collectors was the search for birds.

* See, also, pages 19-30, "The Dream Ship," by Ralph Stock, in the NATIONAL GEOGRAPHIC MAGAZINE for January, 1921.



DON QUIXOTE'S ANTAGONIST STANDS GUARD OVER AN ISLAND OF SALT

The desert surface of Ilha de Sal (Island of Salt), in the Cape Verde Islands, is a natural salt flat, the product of salt, by evaporation of



THIS WEIRD BIRD COMMEMORATES A DARING DEED BY NOTED AIRMEN

As a memorial to the landing of Portuguese pioneer aviators, Admiral Contalva and Captain Saccadura-Cabral, flying from Europe to South

Photographs by Geo. Finlay Simmons



Photograph by Georges P. Virolle

ICE-CREAM SALT MADE BY THE SUN

French Manager Earbe (wearing sabots) shows the author how the Cape Verdean natives loosen up the salt following evaporation under the fiery rays of the tropical sun (see, also, page 16). European shore-birds winter among the salt pans, in which a strange little shrimp makes its home.



Photograph by Robert H. Rockwell

TUNAS FOR TUMMIES

Offshore thoninhas, bonitos, and albacores are landed on the ebony beach of Fogo, in the Cape Verde Islands. Small boys carry the fish across several miles of volcanic stones and dust from port to village.

There were adequate landings at only four towns in the archipelago, but hundreds of other landings had to be made on steep volcanic shores of the islands or through roaring breakers onto beaches of ebony and sand. Many of these islands are desert, some rugged, some flat; but there is little vegetation on them and scarcely any water.

The men of the islands do little manual work, while women are the beasts of burden. Cuyler, Moses, and our other collectors, with their food and camping equipment carried by sturdy women porters, ranged for miles and miles over mountainous islands in search of rare

desert larks, coursers, waxbills, kingfishers, swifts, hawks, and other birds.

Some of the islands rise far above the clouds. There were difficult mountains to climb on Santo Antão, São Nicolao, and Brava; and Fogo, the island of fire, with its smoldering volcano, rose higher still, towering to nearly 10,000 feet (see, also, text, page 19).

Most of these islands stand in the open sea, as monstrous monuments to the feverish action of long-dead volcanoes: some of them have become cloaked with vegetation.

A TRAGEDY NARROWLY AVERTED

Thrills were frequent while we were collecting. On one occasion we had landed with great difficulty on the bare offshore rock of Corral Velho to spend the night with Cape Verde and Boyd Alexander's shearwaters, the brown booby, the

white-faced and Madeiran petrels, and other queer birds of the sea. Some distance away the *Blossom* stood off and on, under trimmed sail in the face of the trades, which piled high seas against our little rock.

Seas had risen by the following afternoon, when a ship's boat came to take us off. The men at the oars drew near, took one look at the face of the rock, and wanted to turn back to await a better day.

We on the rock were without food and water, so we ordered them in close. Then we stripped to the skin and threw our belongings from the top of a cliff, to be caught or missed by the men in the boat.

While trying to get Moses, who had never learned to swim, out on a promontory where the boat could pick him off, a great sea swept me into a whirlpool. For a moment my companions thought I was lost; but, bruised and shaken, I managed to crawl back on the islet, and we tried it again with better success.

Cuyler and his collectors went in search of the rare ghost petrel (*Pterodroma mollis feæ*), of which but few individuals had ever been taken. Specimens spoil quickly among the volcanic mountains of these tropical islands, so that a great deal of equipment must be carried even on a short field trip. The party, which included a number of women porters, wound along the old trails of the island of São Nicolao, crossed deep valleys, and climbed for thousands of feet up the faces of steep mountains.

The husky porters, used to such work, fell in their tracks from exhaustion; but Cuyler piled an additional load on top of his head and pushed on. Tons of rubble rock were moved by hand on the slopes where the rare birds lived, and the collectors returned with more than a dozen of them.

JAIL IS RAIDED TO OBTAIN PORTERS

Three of us circled the island of Fogo and climbed to the top of its volcano. Porters for this trip could not be hired, so the governor of the island ordered the prisoners out of the jail, and they carried our extra equipment on a hurried four-day tramp. The peak of the smoldering



Photograph by Geo. Finlay Simmons

A SHY LITTLE MAID OF MAIO

The blood of slaves darkens classic features inherited from early Portuguese explorers in the Cape Verde group.

volcano stood so far above the clouds that they seemed spread out in a map below us, and so steep were the sides that, looking down almost vertically, we could see the shore of the island 10,000 feet below.

We returned through the fertile part of Fogo, facing the trade winds, where the moisture of the clouds produces luxuriant growth, and filed with the governor of the island "Maçedo" as a name for this smoking monster mountain, Maçedo being the leading family of the place, descended from an early explorer.

After collecting many hundreds of birds, some of which were new and many of which had not been taken since the



Photograph by Geo. Finlay Simmons

THE MOUNTAIN HOME OF THE GHOST: CAPE VERDE ISLANDS

Thousands of feet above the sea, overlooking the little town of Ribeira Brava, on St. Nicholas (São Nicolao), Cuyler and his men collected old birds and young of the gongon, or ghost, one of the rarest mountain petrels known to science.



Photograph by Geo. Finlay Simmons

PORTUGUESE ROADS TWO CENTURIES OLD

Several fine stretches of highway are to be found on the island of St. Nicholas, usually cobbled with hard basalt stones. In this desolate district the collectors sought rare species of kestrel, desert lark, waxbill, and warbler.

days of Darwin, and having increased the island list from 75 to well over 100 species, we headed for Africa.

ON TO "THE PARIS OF WEST AFRICA"

The *Blossom* had been badly strained in the rough passage of the North Atlantic.

Vital repairs had been made by a small shipyard at São Vicente, but other repairs and considerable recalking were necessary. These we planned to have done in Dakar, the capital of French West Africa, which had been described to us as the Paris of West Africa, the finest city between Europe and Cape Town.

We anchored in Dakar Harbor, and went ashore to see this city about which we had heard so much.

Dakar might be called the peanut capital of the world, for the surrounding region is gradually being cultivated with that humble legume. During the harvesting season great loose mountains of them are piled on the quays of the port, and a con-

stant string of steamships departs for Europe loaded to the hatches with peanuts. It is not surprising, therefore, that along trails in the interior we frequently saw families of green monkeys and the red, and bands of hundreds of dog-faced monkeys, with occasional individuals of rarer species.

Dakar lies on the middle coast of Senegambia, where the Great Desert meets the African bush country. Here is the westernmost point of the continent, the land of the blackest negroes wearing the whitest robes and speaking the strangest tongues that a white man can imagine. Here are Mohammedans, with their prayer rugs, throbbing tom-toms and sensuous dances, and thatched huts among the forests of giant baobab. Here is the setting for a thousand dramas of history and natural history.

Along the shores we found strange pelicans, gulls, terns, and cormorants; and in the marshes, for we were there



Photograph by W. Kenneth Cuyler

BEARING THE WHITE MAN'S BURDEN ACROSS DESERT SANDS

Donkeys are rare and strong women are numerous; so two of the regular dusky Amazonian porters of the Cape Verde Archipelago accompanied a bird collector of the *Blossom* and his native guide across St. Vincent (see, also, illustration, page 13).



Photograph by Geo. Finlay Simmons

OUT FOR A LARK (AMMOMANES) ON A DESERT ISLE

Nearly a century ago Charles Darwin collected rare and strange larks and other birds in the Cape Verde Islands. These are well represented in the *Blossom* collections.



Photograph by Geo. Finlay Simmons

THE PERILOUS ISLET OF CORRAL VELHO

Brown boobies make their home on the top of this tiny sandstone islet, where several members of the expedition almost lost their lives, near Boa Vista, in the Cape Verde Islands (see text, page 18)

during the rainy season, we found queer little grebes, long-toed jacanas, herons and egrets. Vultures and hawks loitered about the native slaughter pens.

In the bush there were hornbills, weaver birds of many sorts, the bateleur eagle, warblers, titmice, doves, sparrows of many kinds, red-breasted shrikes, parrots, hoopoes, owls and nightjars, and queer kingfishers, from the size of one's thumb to the size of one's shoe.

A lowland interior swamp, the Tamna, sheltered tree-ducks, rails, lapwings, coursers, and shore birds of various species. We obtained specimens of the African painted snipe, various species of rollers, cuckoos of many colors, woodpeckers, and brilliantly glittering African sunbirds.

A SHEIK OF SENEGAMBIA

I made a trip into the interior, where several of our men were collecting birds at Thiès, a village of about 13,000 natives and a few French officials and merchants. The chief of the place arranged native Ouolof and Mauretian dances for us

and gave me much information about native customs (see page 33).

"Yes, we are Mohammedans," he said in his best French, "but only the middle classes have more than one wife. The poor man can support only one, and the upper-class men know that a man can get along with only one woman at a time, but the middle-class men marry several times. If a man has more than one wife, he must have four. Two wives fight; if there be three, two fight the third; and four is the smallest number a man can have and maintain peace in the family!"

"How do you choose your wives, and can you get divorces?" I asked

"A young man talks to the father of the girl of his choice and pays him a sort of dowry, which consoles the family for the loss of the girl," answered this grizzled old sheik. "An ordinary wife is valued at the equivalent of twelve dollars; but a wife who can read, write, sing and dance, cook, and who has nice clothes, is worth sixty dollars. If a man and his wife want a divorce, they go before the commis-



Photograph by F. Herbert Fowler

A SOLEMN NEPHEW OF THE LAUGHING JACKASS

Darwin's kingfisher, one of the rarest birds in the world, "hangs himself on a hickory limb" and spends his days on the desert isles of the Cape Verde group in pursuit of the wily grasshopper.

sioner and he grants it; the husband pays the wife an amount equal to that her father received and she goes back to her people."

SENEGAMBIAN BIG GAME

Cuyler and Robert H. Rockwell, who went back into the interior to hunt big game in the Bondu country, found conditions somewhat different. They traveled inland with equipment and an interpreter-cook, Sorie Bah; secured a famous old hunter and his assistants as guides, with a couple of Senegalese soldiers to guard their equipment, and started for the banks of the Senegal and Gambia rivers, where camp was established (see page 33).

Some of the native Mandingo chiefs and subchiefs here ran to six or seven wives and lived in considerable style in their thatched-roof houses. One chief, a graduate of a French college, had a modern flat-topped desk in his office, with a stenographer, who used the typewriter very efficiently, to handle the French correspondence which piled up regularly on the desk.

Even though the game was scattered by the rains, the two hunters bagged some

interesting specimens of the hartebeest, roan antelope, water-buck, bush-buck, harnessed antelope, Ward's and the bohor reedbucks, several kinds of the little duiker antelopes, wart-hogs, and other African mammals.

Especially fortunate were they late one afternoon in hearing the coughing roar of a big male Gambian lion (*Felis leo gambianus*), which broke from the bush ahead of them up an open trail. Cuyler gave Rockwell, the more experienced hunter, the shot. The first two attempts, with sights at 300 yards, stirred the dust beyond the lion; the third, with sights slightly lowered and gun resting over Cuyler's powerful shoulders, struck the lion in his left eye, shattered his mastoid, and dropped him in his tracks, at a measured distance of 273 yards—a feat that, when related, impels the listener to tell the story of the lion tamer and the lyin' scoundrel!

WE LEAVE AFRICA BEHIND

But we have the lion skin—that's what we needed—and it is, we believe, the first of its kind ever brought back to America.



Photograph by Geo. Finlay Simmons

THE ELUSIVE MOTHER CAREY'S CHICKEN

Astern of the *Blossom*, this stormy petrel (little Peter) hopped along and walked on the water as successfully as did St. Peter in New Testament days. For centuries mariners believed that the bird never approached land, and argued that it laid its egg at sea and carried it about under one wing until it hatched (see, also, illustration, page 26).

We were sorry to leave the Senegambians at the end of our four and a half months in their territory, but we had interesting islands ahead. Our shipyard work had been slowly completed in Dakar, we had reconditioned the equipment and laid in new stores, and had discharged and sent home our first crew of turbulent college boys. They wrote to their home papers that they had left us "flat" and stranded in Africa.

DOWN THE ATLANTIC

Our first sailing master, Emery H. Gray, was put in a hospital at Dakar. In his place Capt. John Titta Vanzetti, formerly an officer in the Italian Navy, joined us as executive officer and navigator, and drove staunchly through with us for more than two years, industrious, friendly, companionable, to the end of the voyage.

Director Rea, of the Cleveland Museum, had come across by steamer from Newport News to discuss our problems with us and take back to the States our

many packing cases and barrels of specimens. He left the harbor on the giant collier *Kina* just as we pushed out from Dakar, late one afternoon.

Three days and a fraction it had taken us to make the run from the Cape Verdes across to Africa, but from Africa back to São Vicente it took us a dozen, as we rocked and wallowed with light winds in the Guinea Current. We added three Caboverdeans to our crew and spent several weeks collecting on Santo Antão and São Vicente Islands and on the islets of the Rombos group.

Down the Atlantic we went in November, eager to land on islands where rare species of boobies, tropic-birds, terns, and men-of-war were to be found.

DISCOMFORTS IN THE DOLDRUMS

We were congratulating ourselves on the wonders of life under sail, when the northeast trades died out entirely and left us to be pitched and tossed about by the many counterseas of the doldrums—



Photograph by Robert H. Rockwell

MINING FOR MOTHER CAREY'S CHICKENS ON CIMA

Simmons and Cuyler found this small petrel not carrying its single egg under its wing at sea (see illustration, page 25), but laying it under the soft soil of a sea-torn isle of the Cape Verde Archipelago.

that mid-Atlantic area, stretching from South America across to Africa, muchly cursed by sailormen (see map, page 5).

Here the warm air moves upward toward the fleecy clouds. Neither the northeast trades nor the southeast trades reach into this belt, and a sailing ship must depend on the occasional squalls which darken the clouds and beat down for a few moments, then pass on. Each of these pushes the ship a few miles, after which she rolls and pitches once more, and the weary mariner clings, sleepy-eyed, to the rigging and prays for wind.

OUT OF THE DOLDRUMS AND ACROSS THE LINE

By watching the direction from which the squalls came, we could usually trim the sails to catch the wind on the right tack, and we slowly circled for a week and eventually crept from the doldrums.

The southeast trades now reached us and we sailed southward; but we were swinging so far to the west that we failed

to make St. Paul Rocks, a group of islets inhabited by a few sea birds. We came about and beat back on a long tack which took us northeastward toward the edge of the doldrums. Around we came again, but the direction of the winds and the force of the equatorial current were too much for us. We were forced to give up the islets and once more strike southward.

We crossed the Line at a merry clip, with the southern heavens bright with constellations new to us.

We nursed the ship carefully along, jamming her into the wind as much as we dared; but it looked as if she would never get into the South Atlantic beyond the big eastern shoulder of Brazil.

WE FAIL TO MAKE FERNANDO NORONHA

We finally sighted the island of Fernando Noronha and slid a few miles past it on the leeward side. The wind, the rolling seas, and the equatorial current that raced for the West Indies were all against us, and we tried for several days



Photograph by Geo. Finlay Simmons

MOTHER CAREY'S GRAVEYARD ON THE SHIFTING SANDS OF CIMA

Unique and uninhabited, the Cape Verde Isle of Cima (see, also, illustration, page 26) is covered with the tiny bones of millions of petrels which in ages past have sought its tiny plateau when it came their time to die.

to beat up to the island and its anchorages. "Hard alee!" Time after time came the cry. It was useless, for we lost a little on each tack.

"We'll make the island from the east when homeward bound," was the final decision (see, also, text, page 59), and we set our course once more for the south. Day after day we logged 75 to 100 miles, and 13 days after leaving Fernando Noronha we sighted the Martin Vas group one morning in December just before day-break.

AN ISLAND NAMED FOR MAURY, PATH-FINDER OF THE SEAS

We made ready a whaleboat and sailed on down to spend half a day among the islets. As far as we have been able to tell from hydrographic and admiralty records, no one had ever chronicled a landing on any of these islands; so it was with a

great deal of interest that we sailed along the shores through a placid sea.

We landed first on the north islet, which we christened Blossom. Small white-capped black noddies were nesting along its rugged faces, and low on the rocks on one side we found sooty terns also. The tide pools were filled with many brightly colored fish and invertebrates, and a few feet away, in four or five fathoms, the men in the anchored whaleboat were catching larger fish hand over hand.

The middle island we called Dom Pedro Segundo, after the last emperor of Brazil. It rises to a height of, perhaps, 600 feet, with steep and practically inaccessible sides. Two kinds of sedge grew pretty well over the top and down a few of the gentler slopes, and mountain petrels sailed and circled off the cliffs among the soaring men-of-war of two species, *Fregata ariel trinitatis* and *Fre-*



Photograph by Geo. Finlay Simmons

PREPARING SPECIMENS ON THE HIGH SEAS

Rockwell, Moses, and Cuyler grew accustomed to such delicate operations as the skinning of Mother Carey's chickens on the decks of a plunging, wind-blown lugger.

gata minor nicolli, which we later found nesting on South Trinidad.

We landed on the middle rock, placed a copper plate with an inscription in a conspicuous position, climbed more than half the way up the side, and then returned to the waiting whaleboat.

The southern islet we named Maury, after Matthew Fontaine Maury, American naval officer who first charted winds and currents of the ocean, and whose work in this field led to the establishment of our Hydrographic Office, Naval Observatory, and Weather Bureau. He was also the real father of the U. S. Naval Academy.* We circled close around it in a whaleboat and ascertained that it is possible on a calm day to land on the southeast side. Afterwards, laden with specimens, we proceeded northward to the waiting *Blossom*.

The following day we sailed westward

* See "The Gem of the Ocean, Our American Navy," by Josephus Daniels, in the NATIONAL GEOGRAPHIC MAGAZINE for April, 1918.

toward South Trinidad, which stood on the horizon, 25 or 30 miles away. We circled around North Point and anchored on the lee side, in Waterfall Bay. The gigantic mountains of this volcanic island rear their lofty heads 2,000 feet above the sea. Phonolite and coral reefs surround the iron-bound coasts and make landing extremely difficult.

TREASURE ISLAND AT LAST

We spent a month at the island, circling it in the whaleboat and landing in half a dozen places. We crawled slowly over its ragged sides and searched for the nests of the Trinidad mountain petrel, the red-footed booby, the two species of man-of-war birds, the sooty tern and the noddy, and the delicate little fairy love-tern.

No other island of its size—less than four miles long and two miles wide—bears on its surface such interesting features. Discovered by the Portuguese and claimed by the English, it has been the subject of international litigation. Until



MERRYMAKERS AT A VILLAGE ON THE ISLE OF BOA VISTA

Garbed in their one best dress, Cape Verdeans walk barefooted for miles over a volcanic island to lessen the wear on the only pair of shoes they have ever possessed. Lovers of their morna music, they gave dances at nearly every little town for the footsore bird collectors.



Photographs by W. Kenneth Cuyler

THE CHEAPEST HOUSES IN THE WORLD

A Cape Verdean home can be built for little or nothing; volcanic stones from the front yard are erected without mortar into thick, substantial walls; a roof of thatch from a near-by valley is practically as good as imported shingles, and labor can be had at a few pennies a day.



Photograph by Geo. Finlay Simmons

LAND HO! THE "BLOSSOM" APPROACHING AFRICA

Cuyler, lured by the mystery enshrouding the Dark Continent, watches the shore line of Senegal slowly materialize in the eastern haze of morning.

recent months even temporary settlements have not been maintained here; people refused to live in the middle of the South Atlantic, 700 miles from the nearest point in South America.

Pirates once brought their gold to the valleys where we sought giant land-crabs and specimens of the 30 species of plants found on the island. Many treasure-hunting expeditions have visited its shores. Some failed to land; others succeeded, and many lives were lost through hardships experienced; but none have ever found the two lots of buried treasure which certainly still exist on the island (see pages 42, 43, and 44).

WRECKED ON PIRATES BEACH

We had great difficulty in making landings at times upon the rocky shores. Our

dory was battered time and again on the reefs and our whaleboats had to be re-enforced.

Landing was especially difficult in Prince's Bay, where the striking peak of Sugarloaf rises straight up out of the sea for 1,200 feet, backed by ridges of phonolite and slides of tufa. On one occasion we edged in toward Pirates Beach, dropped out a cage anchor astern, and took in our whaleboat sails. Long John eased the boat slowly in, but before we could make it we saw big seas rolling in toward us.

Cuyler and I slucked shoes and some of our garments. The first sea half filled the boat, followed by a deep trough, which dropped her on to pinnacles of a reef submerged off the beach, and the second and third seas filled her, over-



Photograph by John G. Hesley

ON THE WESTERNMOST POINT OF AFRICA

Four naturalists from the moored *Blossom* dicker, in sign language and French, for watermelon with Dakar's pier guards, laborers, and washerwomen.

turned her, and battered holes in her thin hull.

We rolled ashore in one grand tangle, José and I swimming with the camera and bedding. Every one set to work salvaging equipment. We drew the boat up on the sands, where we saw at once we could not repair it until we returned to the ship. We were short of food and water and night was falling. We built a campfire against a huge rock and huddled on the sands in gentle drizzles until the following day, when, half in rags, we climbed up toward the top of the island and worked our way down from an 1,800-foot ridge, through magnificent forests of tree ferns, to a cave facing the ship, where a party of our collectors was camping.

Day after day we searched the slopes and valleys for earthworms, insects, and animals of all sorts—anything which might throw light on the past history of the island and the development of its life. Wild goats and wild hogs, descendants of animals liberated on the island in 1700 by the astronomer Halley, roamed the ridges; and the hogs grew fat from eating the

so-called ferocious land-crabs, while the goats were thin on a diet of hard, grisly plants.

The waters about the island teemed with fish, and we listed more than three-score kinds, many of which were edible. In fact, we ate fish every day, three meals a day, while we were anchored alongside the island.

With the lure of the pirates' island still undimmed, but with a third of our men sick with fevers and incipient pneumonia, we spread sail and made for the port of Rio de Janeiro and a hospital.

IN THE LAND OF MILK AND HONEY

With nine days of fair sailing over a pleasant sea, we rolled down from Cape Frio to the entrance to the harbor of Rio. We had no sailing directions or charts for this section of the coast, many of our records having been appropriated by one of the men who left the crew in Africa. So we had to feel our way in between the offshore islets until we could pick out the famous landmark of the original Sugar-loaf, after which Trinidad's peak had been named. Fortunately, steamers were



Photograph by Geo. Finlay Simmons

MOHAMMEDAN BOYS OF SENEGAL WEAR "LIFE-INSURANCE" CHARMS

These leather locketts contain, in Arabic, the medicine man's blessing and assurance against drowning, murder, snake bite, and accident.

constantly entering and departing, and we eased gently in.

The narrow entrance widens into beautiful Guanabara Bay, up which we sailed for several miles to an anchorage in front of the municipal quays. The great metropolis of more than a million people lay spread out before us, along the scallops of the bay, backed by the gigantic, precipitous peaks of the Organ Mountains, heavily clothed in tropical forests.

Our men were soon in hospital, in charge of an American physician, Dr. Pyles, and we set about the slow work of getting them on their feet and replacing the Caboverdean sailors, who here jumped the *Blossom* for easier work on Brazilian steamships.

Cuyler collected water birds about Guanabara Bay and a few specimens were taken in the interior toward São Paulo, but most of our time during a period of weary months was spent in locating a dry dock for the ship, arranging for storage, and in checking all our equipment and

supplies. We also interviewed hundreds of possibilities to fill the gaps in our crew; but none of the applicants wanted to go to sea on a sailing ship.

There is an American colony of about 2,000 in Rio, including members of the diplomatic corps and representatives of American business interests. The chief of the American Naval Mission to Brazil and his staff were especially kind to us, as were also the secretary of the American Embassy, the American military attaché, the American commercial attaché, and members of the consular service, who aided us in rebuilding our broken crew and getting our ship overhauled for another long voyage.

DIFFICULTIES IN RECRUITING A CREW

The *Blossom* was finally put on the ways. Her copper sheeting was found to be falling to pieces, after a year and a half at sea without inspection, and considerable ship carpentry was necessary, as well as a new coat of paint. We recut all sails, sewed new deck awnings, repaired



Photograph by Robert H. Rockwell

THE WATER HAZARD OF THE AFRICAN BUSH

Hunting during the rainy season in the Bondu country of Senegal has its disadvantages. The *Blossom's* collectors had great difficulty in fording rain puddles.



Photograph by John G. Hesley

A REAL, NOT A REEL, SHEIK

This Ouolof chief of the Senegal village of Thiès was a bit fearful about facing the camera, and his Mauretania dancing women were equally nervous (see, also, text, page 23).



Photograph by W. Kenneth Cuyler

EXCEEDINGLY RARE IS THIS SHORT-MANED LION OF GAMBIA

The grizzled monarch of the northwest African bush differs from the ordinary African circus lion of trophy hunters. Rockwell, taxidermist of the *Blossom*, is standing over what is probably the first specimen ever brought back to America (see text, page 24).

all equipment and boats, and got ready for sea once more. Our cargo of specimens had been shipped home and lengthy reports made on our explorations. We now had space for new supplies, which were specially prepared in Rio.

E. Keble Chatterton, in his classic tales of sailing ships, points out that it "is difficult nowadays to get hands to sign for a sailing-ship voyage; even for coasting work they prefer to go to sea in a steam- or motor-ship." And there lay our greatest difficulty.

Shipping was brisk and sailors were few in Rio, and we were bound for bad

seas of the South Atlantic, in which we expected to cruise for nearly a year. Why should a sailor work long hours under such conditions when he could choose comfortable steamships bound on short cruises for beautiful ports, with short hours, fresh foodstuffs, and good pay into the bargain?

At last, however, we assembled a satisfactory crew and early one morning during the Antarctic winter of 1925 we sailed down Guanabara Bay, out into the Atlantic, and headed southeastward for the waters inhabited by the albatross.

THE ANCIENT MARINER'S BIRD

Down in the South Atlantic, where the wintry winds blow almost a gale from the west and the seas roll mountain high, Samuel Taylor Coleridge's Ancient Mariner once roamed.

I hesitate to write about this part of the voyage of the *Blossom*,

for after the Ancient Mariner told about some of his experiences there he was called the world's greatest bore. That pigtailed, tarry seafarer told a perfect stranger, rushing along the streets to a wedding, the "ghastly details of a series of reports on atmospheric phenomena upon the high seas in distant latitudes," and ended his long-winded yarn by relating how "somebody with a bow and arrow went and, without any provocation whatsoever, shot somebody else named Albert Ross!"

We edged the *Blossom* into the fringe of Antarctic winter and rolled and pitched eastward, sailing along before the steady



Photograph by Geo. Finlay Simmons

THE GIANT TREE OF TARTARIN

Hesley, like Daudet's famous Tarascon hunter, in Senegal meets the African baobab. Concealed in its heart were several fat pigs, content in their strange muddy sty.



Photograph by Geo. Finlay Simmons

FISHING FROM THE QUARTER-DECK

Fish are exceedingly rare in the open sea, away from island or continent. There is always much excitement on a sailing ship when fish come about.

westerlies, searching for rare wanderers of the southern seas.

We were running down our easting on the thirtieth parallel, with the Antarctic winter bringing the Roaring Forties ten degrees nearer the Equator. Accompanied by tempestuous seas and with the wind rising almost to hurricane force at times, we raced along, making a best day's run of 178 miles. It was racing speed for us, who were well content with any progress at all under sail. We had done better in the North Atlantic on one occasion, but even then we could never imagine ourselves as contenders for such honors as were won by the British speed-clipper *Cutty Sark's* 363 miles in 24 hours, or the record of the American-built clip-

pers, *Flying Cloud* with 402 miles and *Lightning* with 436.

Across this part of the seas the raging wind was so cold and piercing that we dug out pea-jackets and wind-proofs of every sort. Mist and spray flew high into the air, and the purling, roaring waves washed continually across the slippery decks.

We had talked a great deal about the size of seas in other parts of the ocean, but here we became accustomed to rolling mountains of water 30 and 40 feet high, which boiled relentlessly down upon us from astern. The *Blossom* climbed each one backward, as they overtook and passed her; up and up she went, until it seemed she could look out over the world.



Photograph by Geo. Finlay Simmons

COOK'S MATE FREDDY AND SEA-COOK WILLIAM LABOR TO FEED HUNGRY SCIENTISTS

The galley was scarcely larger than a bandbox, and in the Tropics it was as much an oven as the big Shipmate range, so that much of the culinary work was done on deck.

and then down into a blue-green valley where but little wind could reach her.

FISHING FOR THE ALBATROSS

One day, as in Coleridge's poem, an albatross crossed our wake and followed, to pick food thrown over from the galley garbage. We had no crossbow aboard with which to shoot it, and even if we used our guns we couldn't bring the ship about and pick it up. So Long John and William baited a large shark-hook with a slab of pork fat and trolled a stout line far astern. Bits of troll bait were cast in the wake of the ship, as she climbed easily up one side of a sea and slid smoothly down the other.

The albatross picked up floating bits with scarcely a pause, as it eased down close to the water, snatching its food with a flick of its powerful hooked bill and slapping the sea with a broad-webbed

foot. The quick recovery of its speed was marvelous; it would leave the reaching comber of a giant wave behind and sweep alongside the plunging *Blossom*. Men who had never seen an albatross in flight draped themselves over the lazy bench and across the dory strongback to watch the bird beat back and forth on the powerful spread of its 10-foot wings, which always seemed rigid in its gliding flight.

Some of the seamen were distinctly uneasy, swearing we would be trailed by disaster if we killed the bird that made the breeze blow fair. But William, unafraid of the albatross hoodoo, kept at his fishing and eventually had the satisfaction of seeing the big bird take a great mouthful of bait and hook.

A quick jerk fastened the hook in the horn of the bill, and a clarion of triumph awoke even the men asleep below. Soon



Photograph by Geo. Finlay Simmons

SHARK! SHARK! SHARK!

That's one too many, for there were only two under the *Blossom's* quarter, as Moses pulled on his line and Cuyler made ready to drive home the lily-iron.

the fowl of the Ancient Mariner stood on deck, alive and entirely uninjured, though like its fellows caught during the next few days, it became quite seasick from the motion of the ship! Thus we obtained some of our rarest specimens, but many of the birds which we wanted for our collection would not take the hook, so we planned to pursue these in the whaleboat. In spite of winds and seas, the boat was made ready with well-filled water butt and sealed tins of hard-tack as emergency rations in case she should become separated from the ship; then we bided our time.

One raw, blizzardy day the rare little white-bellied storm petrel was sighted astern. All about it were cape pigeons, cape hens, the whaler's Nelly, or giant petrel, together with an occasional ghost petrel or an albatross.

Cuyler and his men grabbed their shot-guns and leaped into the boat as it hung

from the davits; Long John took the tiller at the cry to lower away.

We had no time to brace the sails into the wind and stop the momentum of the ship; so we chanced it, with the powerful wind whoo-whooping in the rigging. Van-zetti and I paid out the line, and the whaleboat slapped the sea.

For a moment it looked as if the men would be poured into the foaming brine. The davit falls caught and the boat was towed along with the ship and slapped against her side. The painter was hauled taut and the falls were cleared as John yelled; in another instant the whaleboat was free, whirling far astern of the *Blossom*.

This and succeeding whaleboat cruises resulted in many interesting specimens being shot and brought aboard, but always these excursions occasioned apprehension, for the boat always got away with difficulty, was only occasionally visible when



Photograph by W. Kenneth Cuyler

DAVY JONES'S WOLF SLAPS THE SHIP WITH HIS TAIL.

The ship's cook howled with glee as the lily-iron was driven into the fearsome shark which had followed the schooner for a day and a night.

balanced for a second on the crest of a distant wave, and returned after many anxious hours, when we wondered whether boat and ship would ever meet again. To men in an open boat 1,500 miles from land, it is no laughing matter to see one's ship disappearing, as if sunk into one of the foam-dappled valleys of the sea.

By this means nearly 50 albatrosses of four species were collected, including one of the large snowy variety; several spectacled ones or mollymawks, and more than a score of the yellow-nosed, with a blaze of chrome down the top of their dark bills.

One of the commoner wandering albatrosses, caught from the deck with hook and line, was banded, on the chance that some other ship might recapture it. In a bottle on its neck we placed a brief history of that famous bird mentioned by Dr. Frank M. Chapman, which was bottled December 8, 1847, by the whaler *Euphrates* in latitude 43° S., longitude $148^{\circ} 40'$ W., and recovered 12 days later,

3,400 miles away, by the famous whaler *Cachelot*, at $45^{\circ} 50'$ S. and $78^{\circ} 27'$ W.

BIRDS TOO BIG FOR A LITTLE SHIP

The "stuffed" albatross specimens were so large that we faced a serious storage problem. The difficulty was solved by swinging on deck a huge whaling cask and packing the birds in it. John, with his cask tools and dried flag leaves, headed the cask and made it water-tight for storage in the damp hold of the ship. One of our crew, an ex-rumrunner, suggested we might finance another expedition by inserting several bottles of Scotch or a magnum of champagne into each albatross before sewing it up.

But Cuyler and I were less interested in the present or future contents of the albatross skins than we had been in the meat which they once contained. Not only had we slain the albatross and skinned it into the bargain, but we had eaten it. In the absence of fresh meats aboard, we jumped at the chance to fry small cutlets from the breast of the Ancient Mar-



Photograph by Geo. Finlay Simmons

DIPPING OVERBOARD AFTER THE SHARK'S PILOT

Practically every shark encountered on the high seas was accompanied by small sucker-fish (see illustration, page 41) and beautiful little banded shark-pilots.

iner's bird, and we found them so delicious that we tried stews, hashes, *chili con carne*, and even braised and boiled albatross. The meat was tender and well flavored, and especially tempting was the breast of the yellow-nosed variety. Gourmets may envy.

The crew, however, could never get over its superstition and repugnance at the thought of eating the albatross. They ate their salt meats and dried fish and pitied us.

Thus did we sail for more than a month in the direction of the southern tip of Africa; then turned northward around the imaginary corner of Greenwich and

30° S., and along the path of the old clipper ships and the East Indians, rolling down toward the island of St. Helena.

AN EMPEROR'S ISLAND OF EXILE

Early one morning we stood on the deck of our easily rolling craft, feet spread to meet the swing of the quartering seas, and saw the mist-enshrouded mountains and heights of St. Helena materialize through openings in the morning's curtain of haze. Bleak, bare, upstanding it was, as we approached it under shortened canvas.

"What a terrible place to be sent to for a number of years!" exclaimed one of our officers.

He had scarcely spoken when the sun broke through and the whole top of the island appeared blanketed with a green whose varying shades indicated brush, bush, and forest scattered sparsely over cultivated and well-grazed

plateaus and mountain tops.

"It appears very interesting to me," said Vanzetti, our Venetian navigator. "I had not realized that there was so much green on top of the island. I wonder if that is Longwood, Napoleon's home, there on the high northern end of the island?" (p. 55).

Tiny gray and white specks, perched on a lofty, verdant plateau, resolved into small houses and outbuildings, under the power of the ship's glasses. Even the sailors wanted to bend over the chart outspread on the cabin roof, to identify Flagstaff Hill, 2,290 feet high; Halley's Mount, 2,467 feet, where Edmund Halley carried on astronomical observations; and

the crest of the island, a semicircular sweep 2,700 feet above the sea, once the rim of a gigantic crater, which blew out toward the sea and left a beautiful valley, the Sandy Bay country, on the windward side of St. Helena (page 57).

It is impossible from the sea to distinguish the three classic summits of this ridge, but we were to find on climbing them that Diana's Peak is higher than either Cuckold or Actæon.

AN ISLAND WITH ITS OWN HISTORY

What an enchanting place to be situated so far out in the South Atlantic, as if forgotten—a *Flying Dutchman* of an island, which many have seen from the decks of passing ships, but at which few ever touch! It is indeed a lovely emerald among the bewildering jewels of the British Crown, with a history all its own. Green, fertile, lovely, and capped by the peak of Diana the Huntress, it stands in splendid isolation, surrounded by forbidding cliffs which rise a thousand feet above a fisherman's paradise.

It was a hundred years after the memorable first voyage of Columbus that Englishmen learned of the great wealth to be derived from the India trade; and here, on the island of St. Helena, in 1651, the English East India Company established its great way station. By charter from Charles II in 1661, the company assumed a control over the island which lasted for nearly two centuries. The island plantations were cultivated with



Photograph from Geo. Finlay Simmons

ANCIENT MARINERS THOUGHT THIS LITTLE FISH COULD HOLD BIG SHIPS

The author displays the shark-sucker, which in olden times was said to lay hold of sailing craft and keep them from moving, even when strong winds blew. Sailors formerly watched the sucker-fish; when it was seen to anchor itself to a stone, they made ready for a storm.

slave labor; and fresh vegetables and meat animals were provided for the ships which touched here on the voyages between England and India.

The monopoly of the Indian trade by the East India Company was abolished in 1813, with the result that there was a sudden growth of shipping and competition. The China tea clippers, queens of the oceans, began to touch at the island for supplies as they raced home from the typhoon seas.

For six years St. Helena was the home of the exiled Napoleon, who was brought



Photograph by Geo. Finlay Simmons

TREASURE ISLAND AT LAST!

The north end of distant South Trinidad rises for a thousand feet out of the sea, bare and forbidding, to form Cockscomb Ridge and Obelisk Spire.



Photograph by Robert H. Rockwell

FROM THE HEIGHT OF DESIRE, 2,000 FEET ABOVE THE SEA: TRINIDAD

One looks over Scott Peak and Serpentine Ridge toward Sugarloaf, 1,200 feet high, beyond which the sea beats at the foot of Noah's Ark. Between Sugarloaf and Scott Peak lie the Twins, Bingham and Sentinel. One lot of treasure chests is said to be buried in the shadow beyond Sentinel (see text, page 28).



Photograph by W. Kenneth Cuyler

SALVAGING, IN THE ROARING SURF OF PIRATES BEACH

Battered on submerged fangs of Treasure Island, overturned and thrown ashore by the seas, the *Blossom's* whaleboat lay on Pirates Beach while Alfredo and the author plunged into the breakers to recover clothing and gear.

to the island in 1815 and died at Longwood, on a wind-swept, tree-dotted plateau, in 1821. The shaded Glen of Silence opened to receive his body and held it until 1840, when it was removed to the magnificent mausoleum on the banks of the Seine (see page 54).

We landed at Jamestown, just a village, but the only settlement on the entire island worthy the name. Three or four hundred men, six or seven hundred women, and so many children that they get under foot and are counted four or five times, swell the population to nearly two thousand. Quite different from the usual island youngsters are the children of St. Helena. Shyly they eye the visitor, never importuning him in whining note for coin of the realm (see, also, page 55).

The people of St. Helena tell you that anything will grow on the lovely green slopes of their gentle upland hills, and you may well believe them when you learn that more than a thousand species of flowering plants have been recorded from the island.

The ring-necked pheasant is fairly common and a few red-legged partridges oc-

cur on grassy slopes; the St. Helena plover, found nowhere else in the world, cousin of a West African species, we met in considerable numbers on wiregrass pastures, and the New South Wales ground dove is fairly familiar, especially about Jamestown. In the trees of the island we saw numerous Napoleon birds or wax-billed weavers, South African seed-eaters, Madagascar cardinal weavers, Java sparrows, and myna birds.

"We've got the best place in the world to live," the St. Helena people say. They know it, though few have seen any other place.

Many middle-aged people born in Jamestown, deep in its narrow valley by the sea, have never journeyed even so far as the several miles of good road leading to Napoleon's tomb and his home at Longwood. Once an aged man, born and reared to manhood in the beautiful, green half-crater of the Sandy Bay country, on the opposite side of the island from Jamestown, was finally taken to the break of James Valley, 700 feet above the village housetops. He caught his breath and said:



Photograph by Geo. Finlay Simmons

SHIPWRECKED MARINERS FIND A CACHE OF FOOD ON PIRATES BEACH

The giant green turtle crawls upon Trinidad to dig a hole for a hundred giant eggs; departing, she leaves behind her footprints on the sands. Hesley and Cuyler, cast ashore, eye her trail to the sea.

"If this city of London I've heard about is half as pretty as Jamestown, it must be a wonderful place."

Our sailors were eager for land, after a month and a half at sea, and went ashore at this "wonderful" place to stretch their legs, see the sights, and meet the people who thronged the water front of the little village.

After two months of steady work over the sides and top of the island and around its shores and water, we hove anchor and moved gently northward 700 miles on winds surprisingly light.

ON THE FORTRESS OF A WINGED PIRATE

Again came a dawn when we sighted another mid-ocean island, Ascension. We lowered away our starboard whaleboat and, as the ship in Vanzetti's charge slowly worked toward the northeast, we

sailed speedily toward the island. Approaching from the southeast, we soon made out our objective, Boatswain-bird Islet, famous seabird fortress, which we intended visiting before we arrived at Ascension's anchorage and even before we had been given *carte blanche* to explore the island.

Bo's'nbird Islet's glaring white rock rises straight out of the sea for several hundred feet against the ominously dark colors of volcanic Ascension and the deep cobalt of the seas. Occasional seaward faces of the vertical cliffs are broken with ledges and terrible slides, and with the glasses, on nearer approach, we could see that these were covered with birds, most of them blue-faced boobies (*Sula dactylathra*), first described from the islet a century ago (see page 62).

Other birds appeared as we drew near

in our whaleboat, running under full sail, and these held the greater interest for us. They were the men-o'-war, or frigate birds (*Fregata aquila*) of Ascension, the original species named in 1758 by the great naturalist Linnæus and now known to be confined to this little oceanic rock.

A FEATHERED BUCCANEER

No specimens had ever been brought to America for comparison with the later-named West Indian species; hence we marooned Cuyler and his four men on the islet with a small cask of water and a little food, so that they could carefully choose and prepare specimens of the booby, the man-of-war, the brown noddy, the black noddy with cap of white, the yellow-billed and the red-billed bo's'n-bird, the white love-tern, the sooty tern, and the Mother Carey's chickens which nest here.

The man-o'-war is an odd sea bird, with a body about the size of that of an ordinary barnyard hen, monstrous long wings, spreading as much as 10 feet; a long bill with hooked tip that makes a dangerous weapon, and tiny feet so weak that the bird can scarcely waddle.

With such equipment, the bird is an accomplished aeronaut, circling and diving in mid-air with lightning speed, or hanging on motionless wings in the teeth of a gale without losing ground. It gets its name from its habit of dashing forth, after the manner of the old-fashioned frigate ship or full-sailed man-of-war in pursuit of a merchantman, and playing the villain's part with the peaceful booby



Photograph by Robert H. Rockwell

TREASURE ISLAND'S MAN-OF-WAR

Here is the young warrior, his cradle, and his mother. The fallen tree is a broken fragment of the rare species of brazilwood (*Casalpinia*) which once covered the island in giant forests.

returning home from the sea with a maw full of fish for the powder-puff youngster on the islet's battlements.

The frightened booby squawks and dodges, but it cannot escape the threatening pirate bird; so in despair it disgorges in mid-air and makes its escape, while the man-of-war dives like a plummet, recaptures the morsel before it drops into the sea, and makes for its own youngster atop the islet or lies in wait for another encounter.

Marooned on this islet for nearly a fortnight, where not a sprig of green or a drop of water can be found, Cuyler and his four men lived in a constant dust of



BRAZILIAN COASTING VESSEL ENTERING RIO DE JANEIRO HARBOR

Laden with fruit and vegetables, sailing ships skirt the shores of South America and pick up produce for the large cities.



Photographs by W. Kenneth Cuyler

A SMALL TRADING-SHIP LEAVING RIO DE JANEIRO

A storm brewing beyond the palace of Ilha Fiscal brings wind to the coasting skipper. Ilha Fiscal was once the summer home of Brazil's last emperor, Dom Pedro II.



Photograph by W. Kenneth Cuyler

SUNSET ON THE BAY OF RIO DE JANEIRO

guano, with hands and feet gashed and cut by the birds that sit with "sword" ever drawn and ready to slash at the intruder. They were taken off, these marooned mariners of ours, while planning a raft—not of wood, for there was none on the island, but of birds—in case they were not rescued before the last drop of carefully hoarded water was consumed.

JOHN BULL'S YOUNGEST ISLAND

Ascension, near whose iron-bound coast Bosunbird Islet stands, is the volcanic island of a geologist's nightmare—an island terrible, bleak, awesome. As we

sailed slowly toward it, the tall central peak gave promise of beauty equaling that of Treasure Island; but, nearer at hand, as we skirted the northeastern shore and came to anchor in Clarence Bay, the island was seen to be the more or less flattened disk of a bare volcanic plain, from which rose the large mountain first sighted, surrounded by a multitude of smaller cones and peaks.

"An island you will never forget," Admiral Newton A. McCully had said to us in Rio many months before we sighted the terrible clinker of the sea. "It seemed as if a mother volcano had squatted on



Photograph by W. Kenneth Cuyler

THE SEABIRD SUNS HERSELF

The *Blossom*, reworked and repainted, dries recut sails after heavy rains in the harbor at Rio. The mountain peak at the right is the famous Corcovado (the Hunchback), from the summit of which the traveler obtains an incomparable view of the Brazilian metropolis (see, also, "Rio de Janeiro, in the Land of Lure," in the NATIONAL GEOGRAPHIC MAGAZINE for September, 1920).

that little-known island and a group of chick volcanoes had settled around her. You will find it the strangest of all the islands you visit."

And the strangest it was. So recent are the formations of this ash-heap of volcanoes that, according to many geologists, it is the youngest of all Great Britain's possessions, if not the youngest island in the world.

There is no good anchorage. Clarence Bay, where we furled sail, is an open-sea roadstead facing Long Beach and the little settlement of Georgetown. Here, on a low, rocky shore backed by clinker plains, the first settlers landed in 1815—a detachment of British who anticipated attempts to use it as a base from which to rescue Napoleon from St. Helena.

Soon the island became known as the only immovable battleship in the world, for she was manned by a ship's crew and officers and was carried on the books of the British Admiralty as H. M. S. *Ascension*, a ship's tender.

Diamond Rock, strategically located on the coast of Martinique in the West Indies, was fortified for nine months in 1803

by British sailors of Admiral Sir Thomas Hood's fleet; from it the Britons harried French ships entering harbors of Martinique.

The rock might thus be referred to as an unofficial "immovable battleship."

SOLAR PLEXUS OF THE BRITISH EMPIRE

Warfare with mid-Atlantic pirates and slave traders compelled Great Britain to develop the hospital service of the island, and it soon became the rest station of the British West African squadron, which three-quarters of a century ago was extremely active and powerful. The Boer War in South Africa added an important chapter. Britain's submarine cable system was spread southward to the southern tip of Africa and Ascension became a relay station to speed up and strengthen signals.

With the death of slave trading and piracy, and with subsequent changes of world interest from warfare and colonization to commerce and necessity for naval retrenchment, the Admiralty in 1922 withdrew its small personnel and turned the island and settlement over to the cable



Photograph by Geo. Finlay Simmons

CUYLER AND HIS MEN, WITH LONG JOHN AT THE TILLER AND SHEET, PURSUE SEA BIRDS IN A FAIR WIND

company, which represents the British Colonial Office in the administration of the island's affairs.

We landed and met the fifty-odd Englishmen who live in the settlement and who keep the great cable station running. They are odd in numbers only, for the majority have lived in the great cities of the Old World, are well educated, and take pride in making possible political and commercial contact between Europe, Africa, and South America.

Ascension is an exceedingly healthful place for children. We saw about the settlement the bright and happy youngsters of more than a dozen members of the cable staff, who had brought wives and families to live with them during their self-chosen exile of three years.

Unless spare time is regularly employed in some form of recreation, and especially the time of the young bachelors, men on the island fall victims to the malady of "Ascensionitis." Symptoms are a lack of

interest in work, general irritability, and a longing for the fleshpots of London.

THE BEACHES OF ASCENSION

A famous stretch of white beach lies in a gleaming scimitar along a bight just northeast of the settlement and its landing. But "sand" is a misnomer for the fine white particles here found; close examination shows that each and every grain is a tiny, sea-rounded fragment of sea-shell, perhaps of triton, nautilus, limpet, or whelk.

During the breeding season, from November to April, the waters about the island are alive with giant green sea turtles, which lay their big, white eggs on this strand. We captured a number of them for our collections and put others in the government turtle pens ashore—apparently the first males ever taken at the island, since only females go on to the beaches.

Vanzetti and I became beach combers



Photograph by Geo. Finlay Simmons

THE ANCIENT MARINER'S BIRD ON THE WING

Coleridge's pig-tailed, tarry sonnet wore a forty-pound wandering albatross around his neck in penance for killing with his crossbow the bird that made
The whole thing fair



HIS LADYLOVE HAS A MORBID DISPOSITION

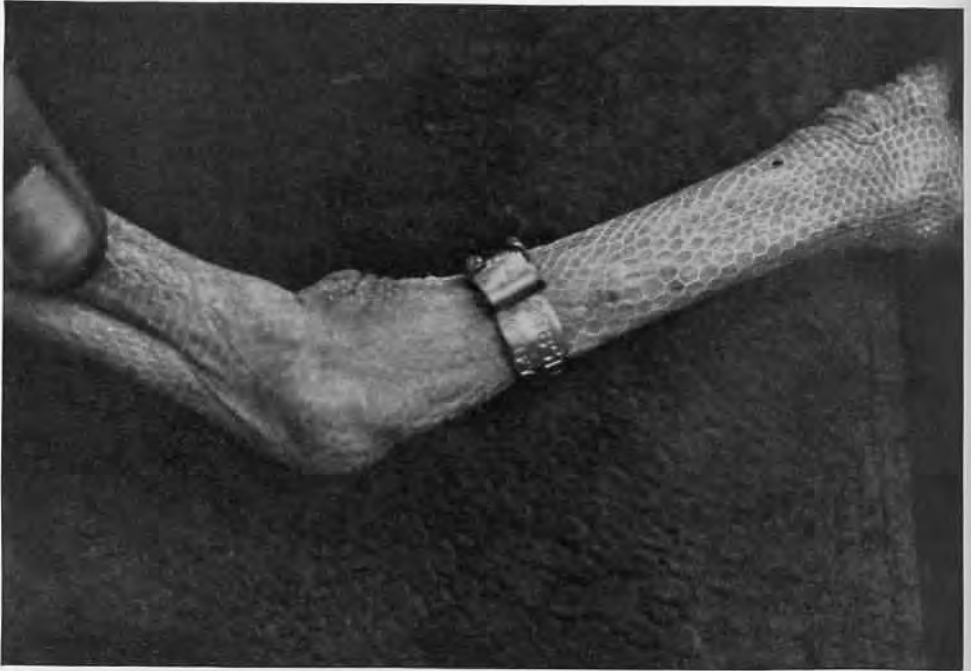
The male man-of-war bird of Ascension Island attracts his future mate by displaying, during the courtship and nesting season, a scarlet goiter-like balloon where his human parallel would wear a bright necktie (see text, page 54).



RARE BIRDS OF THE TROPICS

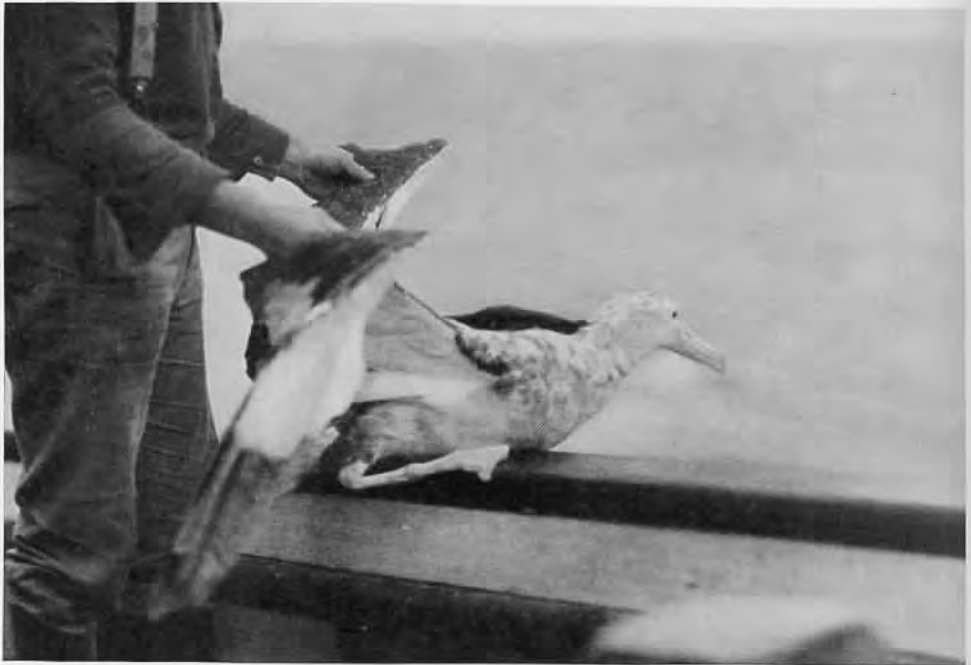
Gaudencía, who was completing his twenty-fourth year on Fernando Noronha for killing a Pernambucan chief of police, helped Cuyler in his hunt for the rare red-billed tropic birds of Brazil's Murderers' Island (see text, page 59).

Photographs by W. Kenneth Cuyler



TAGGING THE WORLD'S MOST FAMOUS WANDERER

A migratory-bird band of the United States Biological Survey was placed on the leg of a wandering albatross caught and released in the South Atlantic.



Photographs by Geo. Finlay Simmons

RETURNED TO ITS NATURAL ELEMENT

A banded, bottled albatross returns to its fishing in troubled seas.



Photograph by A. E. Young

NEAR THE LANDING STEPS WHERE NAPOLEON DISEMBARKED IN 1815

The sea here pours with a roar through a hole in the basalt face of St. Helena.

for biology. Van left his charts and I left my octavos of science, and at intervals of several days, sometimes by day and sometimes by night, we tramped the shores and beaches, abetted by the busy Cuyler, Brito, and the irrepressible William.

Along the shore reefs we gathered oysters and crabs, spiny lobsters and tiny shore fishes. With the boats we sought porpoises courting and mating in the lee of the island; the giant tuna swinging offshore in schools, in pursuit of flying fishes and turbot; and the myriad fish of many colors which lure the island fishermen out on to the giant swells of the mid-Atlantic.

IN A PRIVATEER'S FOOTSTEPS

In the meantime Cuyler had taken his band of collectors inland to the base of the big mountain, and they had there become modern cavemen. They settled themselves in a cave at Dampier's Springs, and from there fared forth over lava and volcanic cone in search of birds and mammals. The myna bird, the waxbill, and the red-throated partridge are to be found over the top of the island; a few seed eaters may be discovered by careful

searching in the occasional lines of thicket, and rabbits and wild goats are hunted.

Donkeys have been liberated on the island, and they have become so wild that they cannot be approached. One of the amusements of the bird collectors at Dampier's cave was to set traps for them at a small waterhole below their camp.

A GIGANTIC EXPERIMENT

Green Mountain as a name must have been ironic a century ago. It rises for nearly 3,000 feet in a tremendous cone of black and gray cinders, each as big as the end of one's thumb, mixed in with lava and ash. Once the mountain stood out brown and black against the sky, but for a hundred years the men of H. M. S. *Ascension* fought it with the great British naturalists of the nineteenth century as their magi.

Plants were brought from other volcanic islands to break the soil and form a humus; then it was thickly planted with grasses, bushes, and trees from Mauritius, Australia, and the botanical gardens of Kew. Where one plant died, another was set out, until the peak and the elements



Photograph by Geo. Finlay Simmons

INTO THE VALLEY OF SILENCE

On St. Helena, at the head of a shaded valley where Napoleon loved to meditate in solitude, the body of the Emperor of the French lay beneath an unmarked slab for more than 20 years. It was then removed to the magnificent mausoleum on the banks of the Seine.

surrendered. Now the mountain is beautifully green with vegetation that has increased the rainfall to a marked degree—so much so that moisture-loving plants grow there in abundance.

The added rainfall on parts of the mountain above the clouds now goes through pipes to reservoirs at the settlement and enables gardeners to raise vegetables, beef, and mutton for the tables in the settlement (see page 61).

A CITY OF SEA SWALLOWS

An optimistic guano and fertilizer company is working the northern corner of Ascension, where the clinker plains meet the sea. A half-dozen Englishmen live at a small settlement on the edge of the English Bay anchorage and direct the labors of more than 100 St. Helenamen. They

work among the dusty deposits of phosphate which have accumulated for centuries in the great holes of the clinker.

There sea birds once lived in great cities and left their guano in countless tons, to be scattered by wind and weakened by rain. Perhaps these colonies were of boobies, man-of-war birds, and terns; but a careful search for bones in the deposits may show that here once lived an extinct species of penguin or perhaps rare sea birds akin to petrel and albatross.

At the present time there is a wonderful city of birds at Wide-awake Fair, on the western corner of the clinker plains. We of the *Blossom* went to the Fair on numerous occasions during the breeding season and found the birds assembled by the millions on flattened areas between the ragged cones. The eggs were in such close



LONGWOOD, HUMBLE HOME OF AN EMPEROR

Here, in peace and study, lived Napoleon Bonaparte for the last six years of his turbulent life, following his defeat at Waterloo and final surrender to the English, who sent him in exile to St. Helena. Many queer Norfolk Island pine trees occur on this island (see page 43).



Photographs by Geo. Finlay Simmons

HERE WITCHES WERE BURNED AND PIRATES WERE QUARTERED

Jamestown, the peaceful little village which snuggles deep in a valley at St. Helena's anchorage, has a dramatic history of its own, of oriental shoes and sailing ships and sealing smacks, of cabbage-trees and—an emperor (see text, page 43).



Photograph by Geo. Finlay Simmons

THE HOME OF THE EMPEROR'S JAILER

Here, in Plantation House, the home of St. Helena's governors, more than a century ago lived Lieutenant-General Sir Hudson Lowe, much-abused caretaker of Napoleon.

formation on the ground that it was difficult to step without treading on one or more (see illustration, page 60).

Upon our approach the birds rose in deafening chorus and hung over our heads in a threatening blanket of wings and sharp bills that darkened the sun. As a curtain of birds swung down with terrible chattering and screeching, we always ducked and huddled in anticipation of an attack. Several miles of walking over heated clinkers is not an amusement, and we usually returned footsore and weary.

WHEN THE DORY TURNED TURTLE

On one occasion during our stay at Ascension, when men could not be spared for the whaleboat, Cuyler and José put forth in the dory to capture a big sea turtle. When nearly two miles from the ship they came upon their quarry basking on the surface, and Cuyler drove a small

harpoon through the leathery skin of one flipper, while José maneuvered the tiny boat.

With fine skill they drew the turtle alongside, balanced the dory, and took the turtle aboard, since it would have been almost impossible to tow the monster back to the ship. The three of them filled the boat to overflowing, and just as they began their return trip a sea caught them and they were capsized.

The green turtle started for the bottom, dragging giant Cuyler, feet first, by the harpoon line, which had become entangled about his ankles, and when he finally succeeded in freeing himself he shot to the surface, gasping for air.

José tried to right the water-logged dory, but it was no use; so he rolled it upside down, with a large amount of air inside to make an unstable buoy. Both men clung to this, growing weaker in their



Photograph by Geo. Finlay Simmons

FERTILE, TERRACED HILLS OF ST. HELENA

Great quantities of flax are grown on the slopes of the Sandy Bay country, high above the sea. A single tall tree crowns the peak of Diana the Huntress, the crest of this magic isle (see text, page 41).

efforts to stay on top of the water and keep air under the boat. Seas continually rolled the dory over, 30 or 40 times, according to Cuyler, a Texas plainsman, who swims but little and who nearly wore the ends of his fingers off clawing at the sides of the dory.

Fortunately, Long John always watched his boats when they were away from the ship. The moment this one overturned he whipped out his glasses, saw what had happened, and sounded the cry to lower away the whaleboat. In racing time a rescue crew sped for the men floundering at the mercy of the sea.

By the time they were dragged into the whaleboat Cuyler and José were close to exhaustion.

Cruising in hot climates fouls the bottom of a ship, but usually a steamer makes many journeys, reprovisioning at port or

even coaling at sea, before she goes into dry dock for cleaning. A sailing ship can hold out longer still, especially if she is copper-bottomed, as was the *Blossom*. On the way to Ascension, however, seaweed had grown so rapidly on the copper below the waterline that we felt much concern, for we knew that after our collecting stay at Ascension we should need every bit of speed we could get out of her to make an American port before running short of food and water.

FISH SERVE AS DRY DOCK LABORERS

As soon as we dropped anchor at Ascension the black turbot, or trigger-fish (*Melichthys piceus*), swarmed about the hull. Naturally a lover of seaweeds, they had subsisted largely on refuse and carrion in the waters to the lee of the island. To them the *Blossom* must have seemed



THE "DISCOVERY," SHIP OF A THOUSAND ROMANCES

Captain Robert Falcon Scott's famous Antarctic ship, reconstructed, is in commission once more, seeking rare shrimp in distant seas. On her way south she anchored at Ascension for coal and met the *Blossom*, a second strange ship of science.



Photographs by W. Kenneth Cuyler

ON THE TRAIL OF A PIG-TAILED PIRATE

Bird collectors in camp at the cave where shipwrecked Dampier, explorer and buccaneer, once lived on Ascension Island.



Photograph from Geo. Finlay Simmons

A SHIELD FROM A SEA-TURTLE'S SHELL

Cuyler lifting the giant carapace of a male green turtle on the cabin roof of the *Blossom*.

a banquet table, for they soon nibbled every strand of the weed from her hull. They went further than that, for when the giant tuna dashed in toward them they pressed for protection against the copper sheeting and raced forward and aft to make their escape. Their sand-paperlike scales polished our hull until we were as clean as was possible!

Cheerfully we weighed anchor once more and made toward the great right shoulder of Brazil that humps out into mid-Atlantic.

Once under way on the placid parts of

the sea, troubles are always forgotten. Occasional Mother Carey's chickens, a shark or two, bonitos and dolphins—these were the markers of our days until we again sighted an island whose fingerlike mountain rose far in the distance, above the curving sea, the way a landfall should be made.

AN ISLAND OF MURDERERS

Fernando Noronha, beautiful and fertile, intriguing and luring one ashore, is a Prospero's isle turned into a place worthy of all of Pandora's curiosity. One



Photograph by W. Kenneth Cuyler

WHERE BIRDS NEST SO THICKLY THAT WALKING IS DIFFICULT

On a corner of Ascension Island known as Wide-awake Fair mysterious swallows of the sea appear and nest by the millions among the volcanic cones; then, the young once fledged, they put to sea and no more birds are observed until they suddenly appear for another breeding season.

looks behind its beautiful woodland cover and sees Brazilian dungeons; for here, on this little dot on the surface of the sea, just below the Equator (see map, page 5), hundreds of the worst murderers that a Brazilian state can send in exile roam beautiful hills and shores.

Here one sees a killer who has slaughtered far beyond his ability to count, there an assassin who would slay for a few milreis; for Brazil has no capital punishment or life imprisonment for murder. A court can give only 30 years for all such crimes in the calendar, and then there is time off for good conduct.

We sailed in to the anchorage of this island on a beautiful March day and signaled ashore for permission to present our credentials, as no one is permitted to land here without a score of permits. Well might they protect passers-by from such a murderers' crew.

Soon the commandant and other officials came aboard, rowed by a band of murderers and exiles. Captain Vanzetti and I accompanied them ashore through the surf to the sand beach of Santo Antonio, where we found jackrabbitlike horses awaiting us.

A GALLOP ON A TROPIC ISLE

The summit which we had sighted afar was the remarkable skyward-pointing phonolite finger of Pyramid Peak, the highest point of the island, rising more than 1,000 feet above the sea. We neared the height, galloping along on our retired Brazilian chargers, and found near its foot the little convict village which we were to visit.

The ancient stone-and-mortar houses, rather Spanish in appearance, spread along the slope overlooking the sea in front and a small valley on one side, where a spring



Photograph by W. Kenneth Cuyler

A FUNNY DISH TO SET BEFORE THE KING

Green sea turtles, on the pierhead at Ascension, awaiting shipment to Britain's king, princes, and dukes, in accordance with an ancient annual custom.



Photograph by Geo. Finlay Simmons

THE HANGING GARDENS OF ASCENSION

Vegetable gardens on the now fertile slopes of Green Mountain stand in sharp contrast to—and twenty-five hundred feet above—the red desert plains. They furnish natural antiscorbutics to the men of the mid-ocean cable station (see text, page 53).



Photograph by Geo. Finlay Simmons

A SEA FOWL'S ISLE IN A DISTANT SEA

Boatswain-bird Islet, guano-whitened and hundreds of feet high, stands in front of Ascension's iron-bound coast and serves rare sea birds as a fortress home. In crannies of its ragged cliffs, facing the turbulent sea, the red-billed and the yellow-billed bo'sun or tropic birds hide their mottled eggs.

furnished a fair quantity of brackish water for prisoners and for the rougher use of the officials, the latter depending largely on rainwater and fresh coconut-milk for drinking purposes.

We were entertained at the governor's house, where we ate many fine Brazilian dishes, including breadfruit and native vegetables. In the trees and bushes of the governor's garden we could hear the voices of three rare birds found only on the island: the cooing of an eared dove, the whistle of a unique flycatcher, and the merry songs of a vireo.

I spent several days with the governor, studying the life of the prisoners and looking over the island records. At the time of our visit about 350 murderers and 150 exiles were serving time, guarded by 50 soldiers.

We split our scientific forces into several parties. Cuyler and his bird skimmers went ashore and camped in an old warehouse building behind the landing beach of Santo Antonio. They combed the island on foot and with the loan of several of the little jackrabbit horses, taking fine collections of the birds and searching for additions to the island lists. Another group of us scrambled along the rocks, seeking sponges and seaweeds, crabs and lobsters of many colors and sizes, sea urchins and anemones, and kelp fishes and their associates in the tide pools among the rocks.

SHAVED BY A CUTTHROAT

At times those left on shipboard were cut off from shore for several days. Great rollers came in from down the wind and



Photograph by A. E. Young

AN OUTLINE OF EMBRYOLOGY

Cuyler and Long John marvel at the myriad eggs carried beneath the immense shield of the green sea turtle (see pages 44 and 59). Leathery shells covered 263 fully formed eggs, and of globular yolks, large and small, there were 586 in this female.

beat on the leeward side of the island, roaring on the beaches, where they were whipped into spray by the trade winds from the southeast, pounding on cliffs and bursting high above the sea.

On such days the ship rolled and pitched and bucked at her anchors; but we were all used to the motion by then and went on with such work as could be done on the single deck.

On one of my visits to the home of the governor I had stayed overnight unex-

pectedly, largely because my command of the Portuguese language was insufficient for me to refuse gracefully. On arising the next morning I found the commandant in the midst of a shave, and bending over him was a thin, intelligent-looking Brazilian, who finished his job with neatness and dispatch.

KIDNAPPERS AND RAIDERS

The smooth-faced commandant waved me into the chair, as he explained that the



Photograph by W. Kenneth Cuyler

THE HOME OF A UNIQUE SEA ROVER

On top of Boutswain-bird Islet, off Ascension Island, lives a species of buccaneer bird, or man-of-war, both male and female being entirely black (see page 57), without the white markings found in the more common species in other parts of the world (see page 45).



Photograph by Geo. Finlay Simmons

THE HYDRO-SEDAN OF A PRISON ISLAND

The governor's "super-six" (with half a dozen assassins and exiles) carries him over the edge of the purling sea at Fernando Noronha and lands him dry-shod on the deck of an offshore raft (see illustration, page 66).



THE ROAR OF THE SURF AT MURDERERS' ISLAND

The whaleboat awaiting the lull which follows each series of several pounding rollers on the beach at Fernando Noronha. The southeast trade winds come over the island and whip the tops off the breakers rolling against them.



Photographs by Geo. Finlay Simmons

A RIDE ON A BRAZILIAN "JANGADA"

A platform raised above a raft keeps passengers and cargo dry, as they slide through the breaking surf and onto the beach of Brazil's Island of Murderers, where there are no wharves, quays, or piers.



Photograph by W. Kenneth Cuyler

WHERE BRAZIL'S LIFETAKERS LIVE, FAR FROM SCENES OF STRIFE

These buildings of the prison settlement on Fernando Noronha were mostly reconstructed 150 years ago. Besides assassins and exiles, who spend here their decades of penance, only officials and soldiers come to the island, since visitors are rarely permitted. Brazil has no capital punishment or life imprisonment for murder; the maximum sentence is 30 years in this penal colony (see text, page 60).

barber was serving a long term for murder; and he continued, as my face was lathered and I sat in considerable trepidation under the swing of the razor, by discussing the barber's crime with that busy individual.

Fernando Noronha, like all of these distant oceanic islands which we had visited, has had a long and thrilling history—defended and captured by Portuguese, Dutch, and French, and now in the hands of the Brazilians, its off-lying islet of Rat once inhabited by kidnappers and now inhabited only by birds and an occasional wild cat which pursues the peculiar lizards of the archipelago.

A FIGHT WITH A GIANT RAY

On one of our voyages around the island and while exploring its islets for rare sea birds, we sailed close to a giant ray as it

swam slowly along the surface, occasionally flipping its spreading wing tips above the water. In spite of the fact that there were only three of us in the boat, we decided to have a try for this specimen, since few had ever been captured off the Brazilian coast and this might prove to be new.

We circled and, under full sail, sped down upon the monster sea vampire. John sat in the stern of the whaleboat, with tiller and sheet; Brito stood by the mast to lower away the sails at the proper signal, and I took the bow, bracing myself with a great lily-iron harpoon ready to strike. John brought the tiller in line with my signal, and as we sailed over the monster I drove the harpoon deep into the creature, as it started to dive (page 72).

We cleared for action, fought the ray as it towed the big boat along at a rapid pace, and eventually came close enough to



Photograph by W. Kenneth Cuyler

AN ALBACORE FOR DINNER

Norberto Flores returns from an offshore fishing trip on a tiny raft-boat. When officially garbed, he is the keeper of the lighthouse on Kidnap Islet, north of Fernando Noronha.

make fast another iron. Even after we had dispatched the struggling fish we had a difficult task ahead, for wind and tide were against us and we had drifted far out from shore.

The ray was too large to take aboard the whaleboat, so we brought it alongside and tried to sail back to the *Blossom*. We put out the oars and pulled away, and after six hours made the ship.

ALMOST A MUTINY

Our water supply ran low while we were at Fernando Noronha. Even under constant warning, some of the men had wasted small amounts, believing it possible to get fresh water at the island. But the island supply, too, was running short; and we could have obtained only a small quantity of brackish water by carrying it for several miles in small barrels and then bringing it through a bad surf. Fortunately the rainy season came upon us. Above the little schooner we hung awnings of all kinds, guttering the deluge into a hose and then leading it to our casks in the hold. In this way we filled enough casks to give us a margin of safety.

Food also was running short, due to unanticipated prolongation of our work, and this was more serious still.

Nine months since we left Rio de Janeiro. Eventually comes a day when the men are useless until they can get a rest ashore. Especially true is this when they have been working long hours with a certain monotony of food, far from the haunts which they love. We had enough flour and salt meats to last us for months; but we were running short of sugar, tinned butter, and other items allowed by present-day navigation laws.



THIS STUPID BIRD STARES YOU STRAIGHT IN THE FACE

A brown booby on its nest atop St. Michael's Mount, at Fernando Noronha, far above the pounding surf into which it dives for big-eyed scad and sardine.



Photographs by W. Kenneth Cuyler

A BEAUTIFUL FISHER OF THE TROPICS

The red-footed booby of Fernando Noronha is an offshore fisherman who rarely plugs into the toppling breaker, as does its brown cousin (see above).



Photograph by W. Kenneth Cuyler

NATURALISTS DISAGREE ABOUT THIS FERNANDO NORONHA NESTER

Some believe that this bird is a form of the red-footed booby, which has a white body; but others say it's a good species, distinguished by its clear gray body.



Photograph by Geo. Finlay Simmons

THE BLUE-FACED BOOBY BROODS OVER THE FUTURE

William took one look at the birds and returned to the waiting whaleboat at Rocas Reef, saying that all the noise made him "crazy"; but Netto sucked this booby's egg and lay sick on the beach of Dead Man's Cay for an hour.



Photograph by Geo. Finlay Simmons

STUDYING CITIES OF THE UNDERWORLD

Reefs of lava and coral at low tide reveal many interesting communities along the shores of Fernando Noronha Island. Vanzetti snares a blue surgeon fish after four days of untiring effort.

The glamour of sea-roving was wearing pretty thin and the crew feared days in the doldrums and a slow passage back to the States. The sea lawyers among the crew got together and demanded that I put the ship in to Brazil and secure supplies at the port of Pernambuco; this I refused to do, knowing we would lose much time circling part of the South Atlantic to make it north around Brazil.

The commandant at Fernando Noronha permitted us to carry pigs and goats aboard alive, and the addition of a few chickens turned the *Blossom's* deck into

an impromptu barnyard; but it was a necessary step in order to have some fresh food on the long passage home, for we had no refrigerating machinery and our tinned foods were continually spoiling in rusting cans in the hold.

ON ROCAS, SHIPWRECK REEF

With the addition of a small quantity of fresh vegetables purchased from the island storekeeper, we set sail one evening and moved westward in a heavy rain squall. Night and the rain soon hid the island from us.



Photograph from Geo. Finlay Simmons

THE VAMPIRE OF THE SEAS

This giant ray was harpooned by three men in a whaleboat off Fernando Noronha, the author wielding the iron, with Long John at the tiller and Brito at the sails. After six strenuous hours the monster was hoisted aboard the *Blossom* (see text, page 67).

The next day at noon we were alongside a pair of most interesting islets surrounded by a savage offshore reef.

With the seas running high, the schooner stood off about six miles from the dangerous, nearly circular, coral reef of Rocas. As we approached we were sadly disappointed, for there seemed to be but few birds. Sailing along in the whaleboat, we had seen a few Mother Carey's chickens, both the short-legged Leach's and the long-legged Wilson's species; they had circled swiftly about the whaleboat and danced astern upon the waves.

The sea was up, pounding and roaring over the reef as we edged along, looking for an opening through which to run in to the lagoon. The reef, encircling and protecting two sand cays, is nearly circular, about five and a half miles in diameter east and west and four miles north and south.

We finally lowered sail and, by hard pulling at the oars, made it through an opening and beached the boat on the lagoon shore against New Moon Cay, which bears the ruins of an old refuge house of masonry, with the fragments of a couple of low outhouses behind it, a tall coconut palm, a lookout masthead, and an automatic light atop a thin iron skeleton derrick.

At once a cloud of wings arose in the air, and we realized that the ground had been covered with birds sitting on their eggs. Most of them were sooty terns; but we estimated that there were 1,500 nests of the blue-faced booby, 1,200 of the brown noddy, and perhaps a few nests of other birds, for we saw about 350 brown boobies, 25 red-footed boobies, and 15 man-of-war birds.

We also found large numbers of birds



Photograph by W. Kenneth Cuyler

WIDE-AWAKES ON THE WING

Ten thousand dozen edible eggs of the wide-awake, or sooty tern, may be taken each week on Ascension Island during the nesting season, which for some reason begins several months earlier each year (see, also, page 54). Instead of once a year, the bird breeds four times in three years.



Photograph by Geo. Finlay Simmons

A PAIR OF "BOOBS" ON DEAD MAN'S CAY

The blue-faced boobies of Rocas Reef were just as dumb and stupid as those which the collectors met at Ascension Island and on Fernando Noronha.



Photograph by Geo. Finlay Simmons

BEDLAM ON THE BEACH OF NEW MOON CAY

Hundreds of thousands of wide-awakes, noddies, and blue-faced boobies, with a few red-footed and brown boobies and the man-of-war, fill the air above this crossroads of the sea at Rocas Reef, near the northeastern corner of Brazil.

on adjacent Dead Man's Cay. At one spot we saw several low mounds, and over one of them stood a small wooden cross, stuck in the guano and sand, bearing a Portuguese name.

SKIRTING THE WEST INDIES

We found tracks, bones, and the newly hatched young of the green turtle on New Moon Cay. Crabs of different kinds were about, and in the waters we observed many brilliantly colored fishes, a score of species playing about in the shelter of the lagoon. Sunset was coming on and the *Blossom* had already drifted many miles away on the horizon; so we pushed out, hoisted sail, and started on a long race down the wind, which put us aboard about 9 o'clock at night.

Within 48 hours we reached the doldrums, which in early May are much farther south than in November, when we had crossed them, southward-bound, in 1924. Light squalls came to our aid, and we spent only a part of two days in crossing the narrow belt of calms. On May 6 the northeast trades began to steady down, and for 16 days we sped merrily along, never making less than 100 miles a day and twice making about 175 miles. Life on board then was an idyl of sunlit decks and smooth sailing.

Birds were few, but occasionally we saw a greater shearwater, and just north of the Equator a yellow-nosed albatross and a red-billed tropic bird were sighted. Wilson's petrels, or Mother Carey's chickens, were with us a good part of the time.



Photograph by W. Kenneth Cuyler

HOMeward BOUND IN HALF A GALE

Nearing the West Indies, we sighted occasional sea hens, or skuas, and yellow-billed tropic birds. The latter were doubtless the kind seen by Columbus and his men when they approached these islands.

Every few days we killed and butchered a hog and continually had fresh pork in the galley; the goats and chickens, too, disappeared one by one, until at last only our cat from Fernando Noronha was left. But the cat was safe, for we couldn't catch her. Neither could we catch an auxiliary schooner, doubtless a rumrunner, sighted here; she pulled away from us and disappeared.

HOMeward BOUND

We edged into the Sargasso Sea once more, this time for five days; then the breeze picked up and the *Blossom* was soon merrily running along, working upward toward the coast of the Carolinas. We began sighting steamers, and then a tugboat towing a large dredge. The water became warm, so we knew we were in the Gulf Stream, nearing home once more.

We had been unable in foreign ports to replace our stolen charts, so we neared the coast with only a North Atlantic chart,

aided by Bowditch location lists and a map of Charleston found in an encyclopedia.

We sighted the South Carolina coast below Charleston, and then edged northward along the distinct line where the yellow shore water joins the blue-green of offshore depths. Proud of our little ship, we wanted to sail her in; but we knew nothing of the channel, so we signaled for a pilot. Scarcely had we slowed up for the mouth of the channel when an auxiliary pilot schooner, as large as the *Blossom*, circled near and lowered her dinghy.

We eagerly questioned the pilot for news, as we sailed up the channel and anchored at nightfall, and were cleared early the next morning. The beautiful little Southern city opened up before us; we were soon at the pier and were welcomed by relatives, friends, and the hospitable people of Charleston.

The voyage of 31 months was over; we had reached the end of our 20,000-mile trail, with nearly 13,000 natural-history specimens, many thousands of photographs, and notebooks bulging with stories of the interesting creatures of distant isles and seas.