ECLIPSE ADVENTURES ON A DESERT ISLE

By Capt. J. F. Hellweg, U. S. N.

Commanding U. S. Navy Detachment, Eclipse Expedition, 1937

THAT all-important day, May 6, of our sailing from the Hawaiian Islands for the National Geographic Society-United States Navy Eclipse Expedition, toward which our efforts had been bent for more than two months, dawned hot and still. A tropical rain the night before had made everything muggy and heavy; the clouds still hung threateningly over the tops of the mountains around Honolulu.

As we hurried through town in our little car, not much was said. Each was busy with his own thoughts, checking over for the hundredth time all details to insure that none of our eleven tons of scientific equipment, ranging from huge telescopic cameras to tiny stop watches, had been overlooked in the rush of the last two weeks.

Each knew he had done his best during those hectic days, from the moment we arrived in Honolulu and started moving the expedition's freight even before we had located our hotel rooms. Yet each of us was tormented by the same unspoken questions: Would everything work? Had we overlooked any detail?

The scientific party, led by Dr. S. A. Mitchell, had arrived on the *Mariposa* on May 3, and had been busy checking their equipment and procuring last-minute supplies, such as flashlight batteries and sun helmets. For months previously they had been working feverishly to prepare the delicate apparatus that would record the scientific data of the eclipse (page 361).

Suddenly we made out the *Avocet*, a Navy seaplane tender assigned to the expedition, lying snugly alongside her dock on the water front. Her undisturbed, peaceful air, her smart appearance, her very evident readiness to go, cheered us tremendously. Her gear and equipment were stowed and lashed as only seamen can do it; everything was trim and taut. We were ready.

As the time for our departure approached, the crowd was hurrying down converging streets toward the dock. The Governor of the Islands and his staff arrived, followed almost immediately by Admiral Murfin, from Pearl Harbor.

Ladies carried fragrant leis. The Royal Hawaiian Band was already in its place outboard of the gangway, cars began to gather on the dock, and the National Broadcasting Company experts were busy rigging their portable equipment.

Abruptly conversation ceased, a clear strong voice was speaking. The broadcast was on. Music by the band, addresses by Governor Joseph B. Poindexter, Admiral Orin G. Murfin, and the members of the expedition followed.

Again the soft Hawaiian music, a few last earnest goodbyes, and then a sharp "All on board." "Stand by your lines."

The gangway was hauled on board, the crowd on the dock separated into small groups, and those without any duties lined the rail.

"Let go, aft."

"Slow astern, hard right."

"Let go, forward."

And with that, our eclipse adventure had begun.

OFF, ON COURSE 207

The *Avocet* slowly turned and headed for the open sea. The crowd on the dock grew smaller and smaller, their faces became blurred, the handkerchief-waving groups melted together, three long blasts on the *Avocet's* whistle, and Lieut. Williamson, our skipper, said quietly, "We're on course 207, sir, our course for Enderbury." *

Seven days later, still on course 207, after a remarkable run, we sighted, in the early morning light, palm trees, creamy surf, and then the dazzling white sand of a low-lying tropical isle.

But meanwhile there were many interesting happenings on board ship.

The second night out, at dinner, Dr. Herman A. Gross, Navy surgeon, and I were spinning yarns about China.

"Captain, do you remember that big mail buoy just outside of Chinwangtao?"

"Why, yes, doctor, but I never put any letters in it. I always felt that those Chinese pirates stole half of the letters."

Someone interrupted with "Captain, what does a mail buoy look like? What are they for?"

"Oh, down here, they are big yellow buoys with large, blue M's painted on their

* See page 380, and The Map of the Pacific Ocean, published as a supplement to The National Geographic Magazine for December, 1936.

NEPTUNE'S AIDES DUCK A LANDLUBBER AS THEY CROSS THE EQUATOR

The "polliwog," about to be initiated according to old sea custom, is tossed into the canvas tank, where two husky "shellbacks" (men who have crossed the Line before) will see to it that he experiences salt water. Neptunus Rex, with long beard and trident, supervises the ceremony with his court, which includes the Royal Baby, seated at the right. Scientists and naval officers who had not passed the Equator before were initiated along with the humblest gobs. Even Jerry, the ship's dog, was given a ducking, and emerged a full-fledged but thoroughly disgusted shellback.

sides, just like the Matson Line's ship stacks. You put your letters in the buoy, and the next ship picks them up."

The doctor abruptly changed the subject. Nothing further was said about the mail buoy, but late into the night members of the expedition were busily writing letters and asking what kind of stamps had to be used on mail buoy letters.

I believe it was the next afternoon before someone became suspicious and letter writing ceased.

TROPICAL SQUALLS AND STARS

Everybody quickly fell into the routine of shipboard life. The *Avocet* proved an excellent ship, riding the long, following seas like a duck. All hands ate their heads off, and, much to the cook's disappointment, no one missed his mess. After several days, the cook complained, "I can't save a thing; they all eat like horses."

We passed through the usual number of tropical showers, some were real rain squalls; but, between squalls, the sun came out hotter than ever.

Every morning early, I had the boatswain's mate hook up the fire hose and hit me with it at about five feet. I could never convince the others of the stimulating effect of that salt-water shower delivered with a fire hose and plenty of pressure.

Life on board was easygoing and peaceful; all hands tried to keep occupied. After dinner every night, the card players got under way; others went on the bridge to look at the ever beautiful panorama. Tropical stars from the dark deck of a ship at sea are one of nature's most inspiring sights.

On May 10, we had our first radio broadcast (pages 392, 393, 394).

At sunset on the eleventh, the ship was hailed by an unusual-looking individual who announced himself as Davy Jones, a

HIGH IN A PALM TREE SITS A RED-FOOTED BOOBY, NOISY ISLAND NATIVE

The screeching of these birds ruined many a scientist's sleep as they flew over the camp on moonlight nights. This booby is resting, not nesting, in one of the few coconut palms on Canton Island. The New Zealand eclipse party planted a thousand coconuts here (page 391).

minister from the court of Neptune. He delivered a "summons extraordinary, subpoena mandatorium" from the Royal Court of the Raging Main to each of the landlubbers on board, requiring their presence the following day before the court of Neptunus Rex (page 378).

Separate charges were preferred against each one. Everyone on board was subpoenaed except about 17 old shellbacks who had crossed the Equator before. They were heartily greeted as old friends by Davy Jones.

May 12 was hot and clear. Neptune's party came on board early and held court. The court, festivities, initiations, and duckings progressed systematically until all the polliwogs, or landlubbers, had been duly initiated into the guild.

After Neptune and his court had been photographed by The Geographic's expert sharpshooter, they bade the Captain goodbye and left the ship. The rest of the day was spent by the recently initiated in removing traces of the ceremony. Those whose love-locks had been snipped off regarded themselves in mirrors rather ruefully.

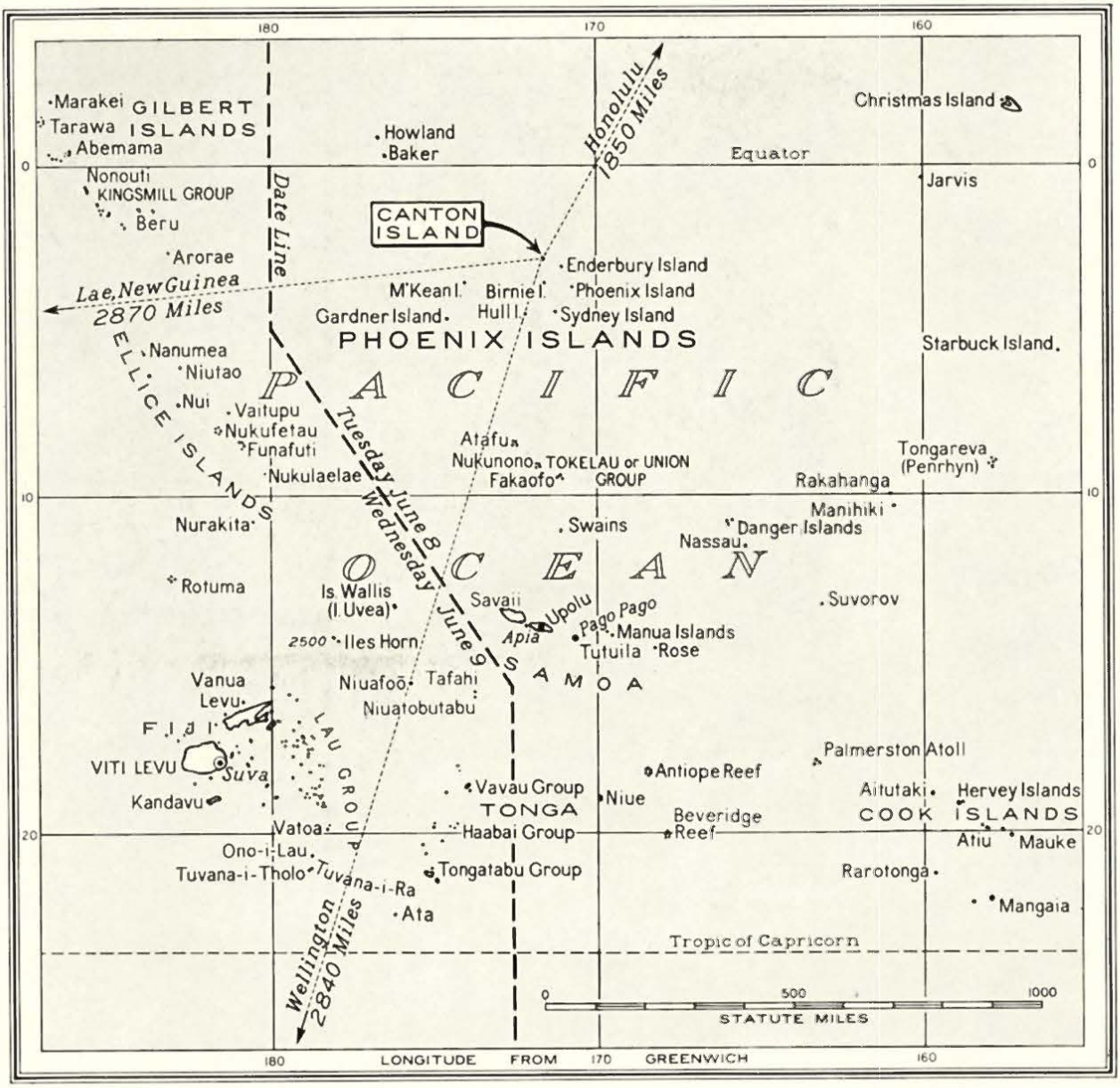
Our genial artist, "Michelangelo" (Charles Bittinger), prepared to engross the diplomas for all the new shellbacks.

That night the captain reported that he would have to slow down to make the island in daylight. Accordingly we slowed to eight knots until daylight when we speeded up to ten.

THE THRILL OF A CORAL ISLE

Soon we had Enderbury Island close aboard on our port bow (map, page 380).

That first view can never be forgotten by any of us—a very small, low isle with its few palm trees bent by the wind, its snow-white coral beach smothered in foamy breakers that rolled in continuously from nowhere and broke themselves with a loud roar on its shining shore. It was surrounded by crystal-clear water of the purest jade, in



Drawn by Newman Bumstead

REMOTE CANTON ISLAND HAD ITS BRIEF DAY IN THE DARKENED SUN

Less than 200 miles south of the Equator, Canton is one of the eight tiny islands of the Phoenix Group. To the northwest is Howland Island, which was the objective of Amelia Earhart's flight from Lae, New Guinea, on her way around the world. The Phoenix Islands and others near by were included in the U. S. Navy's search for Miss Earhart and her navigator, Frederick J. Noonan. The Phoenix land patches are all of coral formation, rising only 20 to 30 feet above sea level.

turn bordered by the most dazzling blue, extending right out to the ship's side.

Above it, thousands and thousands of birds—black birds with blood-red balloons hanging from their necks, white birds, brown birds, all kinds of birds, all colors—wheeled around and around in their never-ending aerial parade.

The spell was broken by the racket of the winch lowering the motor sailing launch over the side. Quickly the boatswain shoved off, and stood in close to the outer line of breakers. To us, he seemed always about to be caught in the breakers. We could see the men heaving the lead, seeking anchorage, and, with apparent disappointment, standing farther down the shore line to try it again.

The launch rapidly signaled, "No bottom at 35." We acknowledged, and the captain turned to me with, "It certainly does *not* look good to me."

On and on, for more than two hours, the motor launch skirted the reef. Once she signaled, "Twenty-five fathoms, hard, irregular bottom." Before she had moved a boat's length, she again signaled "No bottom at 35."

HEAVING THE LEAD NEAR THE ENTRANCE TO CANTON'S BLUE LAGOON

Sailors from the *Avocet* measure the depth of water in search of an anchorage. The ocean bottom dropped off so steeply around the island that only outside the entrance to the central lagoon, where currents had built a "delta," could the ship find a place shallow enough to drop her "mud hook." The entrance to the haven, showing in the background, is about 150 yards wide. Within, the water was quiet and supplies were easily landed on the inner shore. The Expedition camp (page 385) was set up to the right of the passage.

Such a bottom was plainly impossible, so I advised Lieut. Williamson to recall his boat and to proceed to Canton Island. If that proved worse we would have to consider further what could best be done.

Two and a half hours later we sighted a number of apparently disconnected humps on our starboard bow. They gradually grew together and we found ourselves skirting an island, very narrow, very white, and with the bluest blue water on the other side extending off to the horizon.

AN IDYLLIC LAGOON

Canton, or Mary Island, is a large atoll. Its lagoon is a beautiful stretch of glass-smooth, deep-blue water. The surrounding rim is nowhere very wide and sometimes very narrow.

On the sea side, in never-ending march, the breakers pounded their way with an incessant roar, throwing skyward high plumes of pure white.

At the salient points jutting out into the sea, those imposing breakers extended far offshore. I counted as many as six and seven at once, all racing madly after each other and crashing on the beach.

FINDING THE HUMPS

From his wealth of experience, the boatswain said, "We'll find a good anchorage, Captain, right off the mouth of that lagoon.

"Wherever you have a big lagoon repeatedly discharging through a narrow entrance, the tides sweep the coral sand in and out and always pile it up in two humps, on either side of the entrance. All you got to do is find the humps; we'll find 'em."

And the boatswain was right. We located an excellent anchorage just to the southward of the southern entrance to the lagoon.

The captain anchored in ten fathoms with 60 fathoms of chain. Everything looked fine. The tide was running strong ebb, and there were large slicks on the water, indicating swirling water below.

We immediately sent the motorboat ashore to examine conditions in the lagoon. In the meantime, we were all curiously

ISLAND BIRDS GET "MIKE FRIGHT" DURING A BROADCAST

The announcer (right) and an assistant hold a feathered native up to the microphone, while two others await their turn to address an invisible audience thousands of miles away. Charlie, the Hawaiian boy, is in charge of a frigate bird (page 390). The hooded man at the left grasps the wings of a blue-faced booby.

looking over the side, examining the bottom which, although ten fathoms down, was clearly visible.

The fishermen immediately broke out their lines. In a very short time, fish of all colors and all sizes were being hauled in rapidly. They snapped at anything.

The "Padre" (Dr. McNally) hauled in a beauty only to see a shark snap off all but the head when it was practically alongside. The largest fish caught that night weighed almost 50 pounds. Chowder was assured!

Soon the motorboat returned with enthusiastic reports of conditions on shore. The boatswain, who apparently had something up his sleeve for every possible contingency, had even brought a float along. This was towed ashore the next morning and converted into an excellent dock. On it we were able to land even our heaviest apparatus.

Those who went ashore with the boatswain must have run along the beach like school children picking up shells, for they all came back loaded with them—all kinds, from the most delicately colored rose tints to the beautiful marble whites, metallic blues, and queer-looking mixtures. The shapes were as varied as the coloring.

ADRIFT FOR A NIGHT

But before we were to see the shore again and step foot on it we were to take another cruise, but only for overnight.

Apparently we had anchored where the slope of the bottom was very steep. The anchor was evidently lying on a submarine hillside and the 60 fathoms of chain slid down the hill below the anchor.

Every time we tugged at the chain, the anchor slid a little farther down the hill. Finally away it went with a bang, and we were adrift with our anchor hanging down under us at the end of 60 fathoms of chain, and no bottom.

We were perfectly safe, as the steady

trade wind was blowing us rapidly off shore. We picked up our anchor and drifted all night, and that ended the thirteenth.

The next morning, bright and early, we steamed back to our island. This time we stood farther in toward the reef, and put the motor-sailer over to sound ahead of the ship and to examine the bottom through a water glass. The men selected a spot in seven fathoms which they buoyed after examining all around that locality.

The *Avocet* dropped her anchor alongside the anchorage buoy, and there we remained. Engines were secured, repairs and overhaul were started, and all preparations for the return trip to Honolulu were begun.

In the meantime, the ship's company was busy rigging out boats, casting off lashings on boxes and equipment, breaking out the afterhold and getting everything ready for a quick transfer to the beach. The first boat ashore took a full load of lumber and the float.

By the time the second boat was loaded and had reached the lagoon the boatswain had constructed his dock and the equipment could be passed over the side to the dock and skidded on rails clear of the beach.

By early afternoon we had landed seven boatloads of equipment and were ready to begin construction of the camp.

Flares such as you see along automobile roads under repair were carried ashore and placed along the beach on high points so that the ship could watch her anchorage during the night. It was astonishing how large those flares looked in the black darkness.

The ship was riding easily, with no strain on the chain at any time. The sea on the lee side of the big atoll was smooth, but down beyond the first point, we could see the surf running high and pounding itself to pieces on the headland.

SOUTH SEA FISH STORIES

It was so smooth near the ship that even the little dinghy, an 18-foot boat, was manned and out rowing around trying to catch fish. Everybody was fish-crazy. There were almost as many lines over the side during the rest periods as confetti over the side of a departing Matson liner at Honolulu.

Everybody chipped into a pool and a fishing contest was started, with daily and final prizes for the largest fish caught.

Before nightfall one man had landed a 37-pound ulua (cravellé jack), one of the best food fishes in these waters. They run from one to four feet long, and weigh from ten to fifty pounds.

By dinner time, everybody was tired and we were willing to return on board and turn in. But not the fishermen. Oh, no! They fished long into the night. My last conscious act was sitting up suddenly when I heard someone near by yell, "Hold him, hold him! What did you let him get away for?"

Saturday morning all hands were up bright and early. The supplies and gear continued to flow steadily, boatload after boatload, toward the beach.

We were lucky to have an experienced sergeant of the Marine Corps with us to take charge of the camp. The rapidity with which our tent village grew was astonishing. Before we fully realized it, all tents were up, all cots were rigged, mattresses, pillows, and mosquito nets (which were never used) were in place.

Meanwhile, others were rigging our big mess tent and our galley. The carpentering gang was busily sawing and hammering our one main structure together.

Our dock presented the appearance of a very busy river landing (page 385). All we needed were a couple of stores, a church, and a tavern to complete the picture. Groups of men, each knowing exactly what they had to do, were rapidly separating and distributing boxes received ashore.

"TOWN HALL" AND "RADIO CITY"

Supplies were rushed to the mess shack, building material to the site of our "town hall," radio equipment to the local "Radio City," and personal effects to the proper tents. All hands appeared to be working under full pressure—what the bluejackets would call "a four-boiler run."

By nightfall the entire framework of our town hall was erected, and some of the siding was already on.

That building was 37 feet long by 14 feet wide, with a head space of 10 feet. It contained two photographic darkrooms, eight by eight, side by side. The inboard one was lined with two thicknesses of a special insulating material to help maintain the proper temperature.

Outside we mounted an air-cooling unit Dr. Theodore Dunham and Mr. Thompson had brought from Honolulu.

BIRDS WERE SO THICK ON ENDERBURY THAT THERE HARDLY WOULD HAVE BEEN ROOM FOR THE EXPEDITION

Although it proved impossible to land the Expedition at Enderbury Island, a smali exploring party returned there after camp was established on Canton Island. Captain J. F. Hellweg (left) and a companion, with Jerry, the *Avocet's* little dog mascot (right), are standing in front of one of the many piles of rock that cover the island. In the left background is one of several ruined stone houses believed to have been built by guano collectors who formerly lived here.

THE ECLIPSE CAMP BROUGHT BRIEF LIFE AND BUSTLE TO A WIND-SWEPT DESERT ISLAND

This general view of the camp is looking north. At the extreme left is the mess tent. In the left foreground are the tents of the New Zealand Eclipse Expedition, while beyond are the tents occupied by the National Geographic Society-U. S. Navy Expedition. The United States flag, and the National Geographic Society's flag just below it, are flying on the pole in the center. The large structure is the wooden photographic darkroom built by the Expedition. Its roof was painted white to reflect the sun's rays, reducing its interior temperature by several degrees. Next to it is the long row of instruments mounted to point eastward out over the lagoon in the center of Canton Island. Dr. Gardner's camera, known as "Big Bertha," is at the extreme right. The "street" between the instruments and tents was called "Broadway," that between the two rows of tents was "Fifth Avenue."

LIKE A BOOM TOWN, THE EXPEDITION'S TENT CITY SPREADS OVER THE SAND BEHIND A BUSTLING WATER FRONT

The first launch sent ashore from the *Avocet* built the little landing, using a float that had been brought from Honolulu and some timbers from a sailing vessel wrecked here years before. In the quiet lagoon all supplies, including the heavy scientific equipment, were safely unloaded from the boats. The pile of lumber on the beach was used to construct the darkroom.

Photograph by Irvine C. Gardner

CANTON'S HERMIT CRABS START OFF FOR THEIR DAILY THIEVING

Biggest nuisance, but also biggest clowns, were the ludicrous hermit crabs that swarmed on the island. Charles Bittinger, the expedition's artist, watches the creatures on their daily morning march from the water's edge to camp where they would drag away small objects, edible or not. Soap was their favorite plunder. One made off with a pair of Dr. Richtmyer's socks, and he never saw them again!

The building was planned to be on the exact azimuth Dr. Dunham needed for his spectroscopic work.

Next to Dr. Dunham's half-ton machine we mounted Dr. Gardner's generator. All the rest of the building was given over to the complicated rigging required by Dr. Dunham's special apparatus.

After the structure was completed, it was entirely covered with tar paper. Then the sides subjected to the morning sun and the roof were painted white by our radio announcer (George Hicks). Richard H. Stewart, National Geographic Society photographer, was one of the hardest working and most competent carpenters.

By the time this was all finished Dr. Gardner had planned and had built a cement mixer and measuring gadget which saved much time. Forms were made, and concrete was mixed and poured.

By nightfall the camp began to take on an appearance of permanency.

Just before dinner we all went down to the lagoon wharf and dived into the crystal depths. At first it felt queer to swim around with so many kinds of fish near by, all staring at us with their big popeyes.

Once in the water it was hard to get out. But somebody yelled "Shark!" and there was a wild scramble for the beach.

When everybody was in water not over ten inches deep we all looked for the shark, which was well offshore, cruising up and down near a coral patch, and occasionally showing his fin.

The boatswain gave me a pair of water goggles with which I could see perfectly under water.

SWIMMING AMID FISH AND CORAL

Swimming around with them on, face in the water, I could scan all the wonderfully beautiful sights below—the white coral sand, the outcroppings of coral, odd and grotesque in shape and infinite in variety. Some of the formations were as delicate as fine lace.

In and around them all were the hundreds of gaily colored fish. They were not disturbed by our nearness, but went about their business, paying us scant attention.

Occasionally curious ones swam toward us, looked us over with their funny eyes, and then swam away, apparently disappointed. But let a big fish appear, and, with lightning rapidity, the others vanished as if by magic.

Swimming with goggles spoiled me for regular swimming. I carried mine around my neck all the time. A hundred times I wished that I could let everyone in the world see the wonderful and beautiful things in the lagoon.

It gave me a very strange feeling, being way down there with gaudy parrot fish, a vivid green; a brilliant silverfish, with one half of the body a gorgeous gold; the little bluefish, looking just like the beautiful bluebirds you see in the spring; or the dignified ulua, metallic blue on the back and silver gray underneath; together with dozens and dozens of all kinds and colors of fish playing hide-and-seek around the big coral heads which looked like enormous cauliflowers.

And then we would see a long, dark shape slowly working its way toward us and we would scramble into shallow water.

A "BIG FELLER" APPROACHES

One evening, Hicks, a surf boy, and I, were playing around a big coral patch, watching the latest color scheme in gaudy fish. I had just veered toward shore when Hicks yelled. Turning quickly, I saw, not one black fin, but what looked like two large white ones.

Charlie, the surf boy, had just gone under with his spear. Suddenly the big blanket fish (sting ray), for that is what it was, darted forward, its dangerous tail sweeping by.

Hicks and I were practically out of the water. Charlie couldn't make it. I saw him throw himself backwards under water like a crab, and draw back his spear to plunge it in the big fellow if it turned on him. It was all over in a few seconds. But when Charlie came out he was laughing, chattering, and looking scared all at once.

He kept repeating "Big feller, big feller," with his eyes wide and frightened. Then he told us that he feared the huge rays more than anything else in the water.

Several of these large rays were hooked, but the combined strength of all hands near by never was equal to landing one; a harpoon was needed. One night the men hauled one up close to the beach in the entrance, but with a single jerk he straightened out a big hook especially made on board and was off seaward at full speed.

Sunday morning, our first Sunday on shore, with the early sun shining through the low-hanging clouds, and the gentle mur-

Photograph by Irvine C. Gardner

NOT A PILE OF SEA SHELLS, BUT HERMIT CRABS EATING COCONUT

The discarded shells of snail-like mollusks are worn as armor by these crabs, with little but the legs protruding. Like turtles, they curl up inside the shell when attacked. This group swarmed around a split-open coconut like dogs around a butcher's wagon.

mur of the water on the beach, Father McNally was holding divine worship. The men were kneeling on the white sand, facing the east with the sun illuminating their faces. I never saw a more beautiful service.

Day by day good weather continued. Our camp life ran smoothly.

Busy as the proverbial bees were the scientists, some of whom, even in the three weeks before the eclipse, barely had time to do all that was necessary to adjust their delicate instruments. Up with the sun, breakfast soon after daylight—we were keeping daylight-saving time—work until noon, lunch, then maybe a brief rest, but usually steady work all afternoon, then a brief swim before supper.

Even after dark the scientists often continued working, focusing their instruments on the full moon or the stars in preparation for the eclipse.

One group played bridge in the mess tent every night. Sometimes I went rat shooting. The fishermen would go down to the entrance to the lagoon, and try to catch a big one in the racing current.

We erected a flagpole near my tent and every morning the National colors, with the National Geographic Society's flag beneath, were hoisted (page 385).

After the camp and the concrete foundations for the instruments were completed, we began the long and tedious task of mounting, testing, and adjusting the many pieces of scientific apparatus.

A scientist on a desert island is in much the same fix as Robinson Crusoe. If he has forgotten a screwdriver or some nuts and bolts he can't run down to the five-and-ten for them. He must do without, or rig up a substitute from materials at hand.

Dr. Richtmyer needed a heavier weight for his driving clock, so he made it out of old rusty iron from a ship that had been wrecked on the island.

A SHIP OFFERS TO "RESCUE" THE EXPEDITION

It was decided to make a day's survey of Enderbury to get first-hand information about that island. Accordingly, certain members of the staff accompanied me on board the *Avocet* the night of May 23, as we were to make an early (2 a. m.) start.

About 10 p. m. we made out a steamer's lights to the westward.

A SCIENTIFIC "PIED PIPER" LURES RATS TO THEIR DOOM

Poisoned meal, not music, is the rodent exterminator used by Charles G. Thompson, President of the Foundation for Astrophysical Research. The rats, which probably came ashore from a wrecked ship, were such a nuisance that the photographer had to move his bed atop the darkroom so they would not keep him awake. The animals probably live on birds' eggs and young birds, but it is a mystery how they get water to drink.

Abruptly she turned and headed in toward the island. Soon she was close enough to signal and announced that she was the *S. S. Niagara,* of the Canadian Australasian Line, en route from Suva to Honolulu.

Seeing the flares on a desert island, she had stood in to learn if we needed anything. When she first saw the flares she could not see the ship's lights at anchor close inshore, and probably thought our range flares were signals for help.

A fine example of what sailors call "good sea manners!"

We thanked the captain and he turned and went back on his course.

The next morning at daylight we were close aboard on the lee side of Enderbury Island.

Lieut. Williamson and I went ashore in the surfboat. Fortunately the surf was not heavy, so we made it without difficulty. The next boat brought Dr. McNally, Mr. Stewart, Mr. Hicks, and Mr. Brown.

We divided into two parties, the captain, Hicks, and McNally taking the southern half of the island; Stewart, Brown, and I taking the northern half.

The island was barren and extremely rough, its surface covered with loose, irregularly shaped bits of coral, looking as if an army of giants had amused themselves by piling them in long, high ridges (p. 384).

As we walked, the loose surface kept slipping and sliding. Progress was slow and difficult.

About the whole was an exaggerated odor of a chicken yard; overhead was a constant and curious bird parade. Some flew so close that they seemed to be trying to peer under our hat brims to see who the intruders were.

THE ADVENTURES OF JERRY

Jerry, the *Avocet's* mascot, remained with our party. The birds were even more curious about the little black dog than about us.

After hours of laborious travel, we started back by way of the beach. Even though that route was longer, we preferred it to crossing the ridges of loose coral again.

Photograph by Irvine C. Gardner

THE MAN-O'-WAR BIRD'S THROAT SWELLS WITH AFFECTION

The male carries under his chin a pouch of brilliant turkey red which during the mating season he inflates with air to the size of a toy balloon. The feathers are dark brown. The man-o'-war bird, sometimes called the frigate bird, lives largely by snatching fish caught by other birds (367). Sometimes hundreds of the "man-o'-wars" could be seen riding almost motionless, with wings outspread, on the trade wind currents above Canton Island.

Upon reaching the surfboat, which was high and dry, the men reported that the tide had dropped away so suddenly they had been caught.

Waiting until the southern party returned, we began the tedious task of rolling the boat down to the water. Using a piece of driftwood about five inches in diameter, we gradually moved it out toward the breakers.

Handling a boat in breakers at low tide is always more dangerous than at high. When we were about halfway out, we wound the boat end for end so that we need not further jeopardize things by having to turn it about while we were rowing.

Little Jerry followed all our movements anxiously. Just when we reached shallow water, the tide changed abruptly and began rolling in very fast.

It took all hands to hang on to the gunwale and keep the boat from being capsized. Suddenly I looked back and there was poor Jerry halfway ashore, shaking like a leaf, and with his whole soul in his pleading eyes. Turning back quickly I ran toward him. As I approached, the little fellow crouched down trembling.

I slung my binoculars over one shoulder and my bag over the other to free my hands. Then I hoisted him on my shoulder to hold him securely, leaving one arm free to balance myself in the surf.

Jerry hooked his little nails into my back to help hang on. As I worked my way out toward the boat, I patted him and tried to reassure him.

By the time I reached the boat, which was bucking like a horse with each breaker, I saw a mean-looking fin just outboard. So we hung on and waited.

Before the next big breaker came in, the fin had disappeared, and we tried it again. By this time we had four men in the boat and they had oars rigged out to start as soon as we could all jump in.

Just then a big breaker picked up the boat and rolled it toward me. Tossing Jerry into it, and scrambling forward,

Photograph by Carl Markwith

"HELLO, DADDY! THIS IS KEITH"

The son of John E. Willis, of the U. S. Naval Observatory, broadcasts in Washington, D. C., to his father on distant Canton Island. At the table is Mrs. Richard H. Stewart, wife of the Expedition photographer. She and her two daughters went on the air, telling Stewart, 6,500 miles away, to swim in the lagoon if he must, but to look out for sharks.

As if his "Mark" had been communicated by some secret means to the moon, an infinitely small notch appeared on the edge of the sun high up on the right side.

I found my body relaxed; it suddenly dawned on me that I had been as tense and taut as a wire line.

Hurrying across to the boxing arena which we had filled with white sand, and around which we had stationed eight bluejackets with stop watches to note and time the shadow bands, I gave them some last-minute instructions.

Dr. Mitchell quietly made the rounds, inquiring of each man whether all preparations were complete, then turned to his own apparatus with his three groups of assistants.

Slowly, steadily, the black shadow descended across the face of the sun.

Darkness came on, and it seemed that night should fall, yet I knew night couldn't be falling at that time of day. This queer darkness was confusing. It did not look like the growing darkness of approaching night, partly because the shadows did not grow longer as they do with the setting sun.

A hush spread over the whole place, no birds were in the air where, a short time before, there had been hundreds. All sound seemed to fade out. It grew darker. The tension was painful.

Yet with the suspense went a wonderful feeling of exaltation that suffused every man in camp. Long weeks of uncertainty were over. At last we were sure that no clouds could possibly interfere with our observations of the eclipse.

"Thirty seconds to go."

I wondered whether everybody else was cool and collected, or had buck fever as I had. I wished the doctor would stop scuffing his feet on the coral.

"Special signal, Richtmyer, 16 seconds to go."

Dr. Richtmyer sprang into instant action. Dr. Dunham was timing his movements exactly with Richtmyer's. An error might blow all the latter's lights and ruin his entire project. Our portable generator was standing up perfectly under this severe tax and we all prayed that there would be no mishaps.

"Ten seconds to go."

"THE WEATHER IS PERFECT, AND WE'RE ALL AS HAPPY AS CLAMS!"

From the roof of the Expedition's photographic darkroom, the good news that clouds will not interfere with the eclipse is flashed to the world by George Hicks (right), National Broadcasting Company announcer with the Expedition. The assistant is ready with a flashlight so that Mr. Hicks can see his notes during the darkness of total eclipse. In the background, right, is the Expedition ship, U. S. S. *Avocet*, and at left H. M. S. *Wellington*, which brought the New Zealand party to Canton Island (page 391).

My eyes smarted.

"155, 156."

I could see Father McNally moving with the regularity of a machine, timing each movement to the continuous count. I could see mentally the feverish activity of each instrument. Hicks' melodious voice went on and on. I wondered how he could think of all the things he said. His talk had to be extemporaneous; he had never seen an eclipse before.

"207, 208, 209."

"End of totality!"

And then the overwhelming beauty of the Baily's beads, the magnificent ring setting, and the glory of the sun as it burst forth, dissipating the weird darkness.

The birds immediately took the air, daytime noises began again, the bareness of our camp was thrust upon us with all its nakedness.

The eclipse of 1937 was over.

Then came the celebration! For half an hour nobody did anything but walk around and feel happy. The scientists acted like college boys whose team has just won a football game!

With a good job done, we suddenly realized that now we could go home. Packing began at a furious rate. Thirty hours later the *Avocet* weighed anchor, and we watched Canton Island disappear into the sunset.