

21 Jan
page

Pango Pango, Samoa.
December 1923.
AMERICAN MUSEUM
OF NATURAL HISTORY

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trying to get a boat. Local canoes being unobtainable.

WHITNEY SOUTH SEA EXPEDITION

of

THE AMERICAN MUSEUM OF NATURAL HISTORY

The crew will remain on the island as long as
the weather is high and the natives are friendly.

59.82(9)

to take over the engineer's job as it is a dangerous one
and he will get the engineer's salary and the cook's
pay. Have had no time to go into the field, but Corbin

has been regularly out with a gun and has killed
the larger of two. He has several gallinules and

out as two or three. He also has a fine fawn and some
for sale. I bought a 0.15 for a 0.15 and a 0.15

for a 0.15. I also bought a 0.15 for a 0.15 and a 0.15
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Extracts from the Journal of

ROLLO H. BECK

Vol. 2. Dec 1923 - Aug 1925

Pango Pango, Samoa,
December 4, 1923.

Arrived here November 12th and have been busy since trying to get a captain. Local captains being unobtainable, the captain of a bark that went on the reef here the day after my arrival was engaged, and Capt. Nagle and the engineer sent to Papeete. The crew will remain awhile longer as wages are higher than in the French ^{Islands} and the cook has agreed to take over the engineer's job as it is not a strenuous one and he will get the engineer's salary instead of the cook's pay. Have had no time to get into the field, but Correia has hunted regularly and had a native show him where to find the rarer of two doves. He saw several gallinules and shot at some but bagged only a couple or so, and an owl or two he also saw but did not get. I offered \$1.00 apiece for owls but none were secured till I raised to \$2.50 after which several were brought in by natives, as well as gallinules and rail. The natives hunt for pigeons and get 50 cents each for them in the market. I sometimes see a dozen for sale when a native boat comes in. Cartridges cost 10 cents each. Kingfishers are common, and are accused of darting down and picking the eyes of chickens. They feed along shore

on Tutuila and pick small crabs as well as fish in addition to insect fare. Yellowbill tropics nest in trees here according to reports. Doves, kingfishers, honey-eaters, and two or three other birds are heard from the houses of the naval station, and a pair of kingfishers sit and call in trees close by houses. A golden plover flies out and lights in the open field in front of barracks and close to the road, frequently. A godwit was brought in by a native hunter, and turnstones are found also.

December 5.

Leave for Rose Island and spend 5 days getting there, as well as using quite a bit of gasoline, for there seems to be a heavy westward set to the current, and sailing gets us nowhere, but back to yesterday's position.

Wedgetail shearwaters are seen often, and a pair of turnstones flew from Tutuila eastward when we were a few miles away from there.

Yellowbill tropics fly about sometimes in pairs and a couple of obscurus shearwaters were seen off Manua Islands. A flock of young plotus and red-foot boobies were fishing when we got within 20 miles of Rose Island.

December 6.

Reach Rose Island but do not anchor as deep water in entrance of pass, and weather rainy and squally. A thick clump of trees on a low coral islet third of a mile

in diameter, and a small coral bank six feet high comprise the land above water, though at low tide one could walk nearly around the lagoon a couple of miles or more. Colony of plotus boobies were nesting close by the grove and several nests were under the trees close by the edge. Most nest had eggs in them, and one had a young bird a day old with an egg.

Under the trees a nest containing two eggs was occupied by a rat busily trying to gnaw a hole in the end of either egg when I approached. Watched him a couple of minutes and then tried to grab him by the tail but he was too quick and ran off. Many rats were seen under the trees, and they have small holes in the ground as well as holes in the roots and decayed fallen limbs. Only 3 plants were noted, 2 small weeds and the large treez. In the trees red-foot boobies and lesser noddies as well as fairy terns nest. One fairy tern flew from its egg so hurriedly that its egg fell to the ground, but a couple of other eggs were seen and a young bird was taken. These 4 nests were not over 20 feet from the ground, but others were likely higher. Noddies also nest in the trees, for a young one unable to fly was found on a stump. A flock of 1000 sooty terns were flying over the trees and a couple of lunatus terns were seen over the barren coral islet, a half-miles from the trees. A single small black-naped tern, the first of its kind seen on the trip, was noted with a black cap in the tail; small patches of bare sometimes held them, and I shot a black rail on edge as it stopped

outside the pass as we neared the island and secured as we were leaving. It came in and lit by itself ahead of the boat on a sandbar, but flew and I shot it as it left. Black and white herons were seen on the reef, and a young white one was shot. A small monument is near the trees with a no trespassing sign on it. Governor Terhune, 1920, evidently being the American Governor at that time.

With the plotus boobies there were four or five pairs of blue-faced that had begun to nest earlier than the former, for two young of large size were on the ground and a couple able to fly were taken. Four curlew were shot and four pairs of turnstones and a few tattlers and a couple of golden plover noted. Two plover shot had quite a few dark feathers in belly. A dozen or so frigates were seen and a couple of lesser taken. Sailors speared a lot of fish on reef and lost one spear, stuck in a turtle a number of which lay eggs on the island.

Turtles seen in pass as we went in. Rainy on the 11th and high wind on 12th when we left but wind died down in evening and drifted back toward Manua, having it 10 miles off at 4 P. M. the 13th in light air.

December 14.

Anchored after dark last night on N. W. side of island and ashore this morning I find rail and gallinules in a small marsh back of the village where they eat along edge with chickens in the mud; small patches of taro sometimes hold them, and I also got a black rail on edge as it stepped

out to feed. This is the rare rail that another collector tried to find and did not succeed. The gallinules are more wary than the rail and keep close in the tall grass. A half-grown rail was seen following an old one, but when I was seen both ran under cover. Correia got three gallinules and I shot at one but the short barrel guns we have do not compare in power with the 32-inch gun that I have used for the last ten years and which is now out of commission. The natives sent

December 15.

Out today and I work well up on mountain and find no birds other than those found lower down. Saw a couple of pigeons and got a kingfisher which seems to be slightly different from the Tutuila one. Got five rail in a few minutes waiting with five to fifteen boys standing with me and talking to one another. Rail are within a few yards of some huts as they are but a few yards from marsh. Snapped another black rail as it passed an opening in the reeds and a boy caught one some way and brought it to me alive. Swifts fly about and along the

Paroquets feed on flowers or fruit well up on the mountain, as well as in the coconut trees along shore. Swifts fly along the trails and Hono, the sailor, got a flycatcher in a canon, the first one seen in Samoa. I saw well.

I saw a tropic fly from a tree, the nest being in the fork 30 or so feet up, but too big to climb. Correia caught

one on the nest in another tree. The swell is bad here and the boat was filled with water as it came ashore and a couple of oars broken. Sailors swam the boat back to the vessel and lost a couple of bottom boards.

December 17.

Ashore in morn and boat capsized going in on the reef. Lost a gun but a reward of \$5.00 to the natives sent several out and finally one found it.

Correia took a guide and went to the top of island to look for shearwaters, but found no signs. Coming back he ran into a flock of a dozen gallinules and got a couple; they range all over the island as well as the rail. He also secured another flycatcher. I saw a barn owl in a clearing, it lit on a high dead tree and sailed off when I approached. They are not uncommon about the houses say the natives. A kingfisher flew on a limb above me with a small mouse in its bill. Shot it and preserved the mouse. The Warbler is by far the most plentiful bird. Swifts fly about and along the trail hunting flies. Few kingfishers seen and a pigeon or two. Doves are scarce, few being heard. Surf high at anchorage, so we up anchor and steam around point to Tau village where chief lives and find little less swell.

December 26.

Correia went out with a man who brought us four obscurus shearwaters yesterday, and returned with three birds taken on cliffs with dogs. He struck a cave with swifts flying onto it yesterday, and today I went there with light and found five or six swifts about the cavern. Went in and found fifty or so bats of small size hanging to roof. I caught twenty-five pairs and pickled them. Saw a lot of noddies and a few fairy terns.

December 27.

Hono, the sailor, who hunts with Correia, struck a tree with the yellow-back doves feeding in it and got ten; the first we have seen on this island, and a native from the other side of the island came in with five obscurus shearwaters taken near where Correia got his birds. Correia at last bagged an owl though he has shot at several.

December 28.

Hono got three more doves at the tree of yesterday.

December 29.

Few of commoner birds taken, and tomorrow we leave for Olisinga six miles to westward. Ontario, the Government boat, brought back the 100 children she took to Pango for Christmas. Their singing was appreciated there, and they took in \$60.00 at a performance they gave for an organ for the

school at Tau. The Flycatchers seem to keep to the north side of the island as I found none on the other parts. They keep fairly near the ground in the bushy sections under the high trees in the old parts of the forest. Yellow-eyes have a nice weak song reminding me of goldfinch's song. They are usually in pairs now. Warblers range over the island everywhere from top to bottom. The rail were abundant in the marsh close to the village, and I took about thirty as well as half a dozen black rail which wander out of the reeds to stroll along the muddy edge. Pigeons range over the upper part of the island singly often.

December 30.

Move to Olisinga Island as Sunday and Ontario goes over.

December 31.

Ashore and go up to the top of island, finding only the warblers or the birds that replace the warblers in the Samoan group. A half dozen pigeons seen flying to or from the steep western side where the cliffs extend from top to bottom. No flycatchers seen, though yellow-eyes and crows or grackles were common. Gallinules were frequent in the taro patches well up on the mountain side the natives clearing land well up to the top of the island. The coconuts, bananas, and breadfruit are planted over the eastern side of Olosinga in numbers, and the supply of copra should increase as many of the trees are young. Water is piped from eastern side to the village

on the west, a distance of over two miles. On Tau the chief, Tufele, tramps over the plantations of the natives from one end of the island to the other, and unless they clear the land they are to be fined, for many let their land become over-run with vines and undergrowth. Fresh water on Tau at principal village is obtained from sea-level at low tide from underground streams that come out nearby. Barn owls are reported to catch small chickens and they seem less nocturnal than the barn owls of California. Gallinules range over the islands here and take to the trees probably from being chased by dogs.

January 5.

Found a flycatcher nest yesterday with two young birds in it on precipitous side of canon, in thick underbrush only five feet from the ground, on tall branch of bush. Birds were found in thickest part of cover, and today found another nest fifteen feet up in fork of a small tree with one fresh egg in it and male on, answered my calling a couple of times from the nest seemingly; nest six inches long and wide, and 1 1/2 inches deep, of shredded bark with a little green moss and lined with fine rootlets. Birds keep in thick, untouched forest, in all cases. Caught

a young rail chick just from the egg in taro patch, and Hono, the sailor, caught one also the other day in similar place. Rails are common, and gallinules very common, flying up into the bushes and trees frequently from the taro clearings. Golden plover frequent the taro patches on the hillsides, as well as shores of the island, and I saw a single curlew fly along shore in the afternoon. Big bats eat breadfruit sometimes as I shot two that were at a ripe fruit in tree. The big bats fly about in the daytime, as well as at night, and the owls do to some extent as the others have shot several, and the natives brought in several also.

Paroquets are scarce, perhaps twenty being the number on the island now, though they come across from Tau, and pigeons and doves are also rare. Warblers are the common birds from top to bottom of the island, and they take the place of the different species of the French islands acting in much the same manner. Kingfishers are common, and I found a nest with three young in it twenty feet up in a big dead stump; nest in but four inches from entrance, and a hole about six inches in diameter, with no lining, on windward side of tree, but hole ran slightly upward. Peep, peep, loud, and uttered twenty or so times, is the usual call.

January 7.

Went ashore on Ofu, and walked around to village on the west side and find good anchorage, so shift tomorrow. Birds same as on Olosinga. See a bunch of the fruit bats hanging on limbs of a dead tree, and a pigeon sitting in same tree. A small swamp harbors a few gallinules.

January 8.

Skin birds in A. M. and row to cliffs on west side of islet, finding a few plotus boobies sitting on cliffs and seeing a colony of 200 or more swifts flying in and out of cavernous tunnel through the mountain. Many nests in the roof thirty yards from water and inaccessible.

January 9.

I go on top of island and find the flycatchers common in thick woods, getting a nest with two incubated eggs in bush nine feet up, and seeing two other empty nests in bushes four and eight feet up. Nests of shredded bark and green moss with heavy lining of blackish rootlets. Got sixteen birds and a few kingfishers. Yellow-eyes have a pleasant little song, though weak. Pigeons heard in one canon frequently, but thick trees prevent capture. Paroquets a bit commoner, and a barn owl was called to my attention by a kingfisher that chattered strangely. Owl in breadfruit

tree where pigs kept, and natives reported them common and addicted to chickens as elsewhere. Correia got a couple of yellow doves, and one or two of the others taken.

January 10.

Skin birds in morning and leave in P. M. for Pango.

January 20.

All last week, except Monday, rainy, and the barometer very low - 29.60 - for two or three days, and some heavy squalls but not as heavy as expected. January 11th stopped at island outside Pango harbor for a few hours, and I got three or four cuckoos seen together. Several ducks were seen but the treacherous marsh and wary birds prohibited our getting all but one, which Correia secured. This one was like the Rapa birds, though perhaps a little larger. Hope to get a few on this island near the west end. Correia went out in the rain yesterday but saw no flycatchers.

January 29.

Correia found a nest of gallinule with four eggs in it in a thick green bushy clump on the steep hillside, a mile from the station, and I went up with him and took a photo of the nest in situ. The bird stayed on the nest which was six feet up until we were within thirty feet or so and I shot it with the aux. Yellow-eyes seem scarce and he does not average one a day though hunting them especially.

Weather last four days has been without rain, though a number of cattle and a dozen sheep. The several days week before every day was rainy.

Malololelei Rest House, Upola Island - Samoa.

Arrived here March 5th from Pango Pango to collect, and found the American Consul agreeable and anxious to please. Made an appointment with General Richardson the English Governor, and he gave me a free hand asking if I could get a few specimens for a local museum which he had in mind. Agreed to pick up some birds for him; was helped along by all officials. Saw about Apia, the port, several shrikes flying about the trees on beach, and in coconut trees large Aplonis was heard and seen, and paroquets were heard. Malololelei is a Government hotel, six miles inland from Apia, at 1800 feet elevation, and has quite a bit cooler temperature than Apia. It is on a trail over the island, and is about a mile from the top of the island which at the trail crossing is about 2500 feet elevation.

There are several clearings in the forest of forty acres or more, near the hotel, a couple above being untended and most below being planted to taro by the owners. The clearing at the hotel belongs to the Government and is in the pasture near the house feeding near cattle, but when

planted to imported grass from New Zealand which supports a number of cattle and a dozen sheep. The several cows milked by hotel people furnish rich milk and cream as well as butter. The original forest borders the clearing, and we hear many kinds of forest birds in the morning and through the daytime. Noddy and Fairy terns and Yellow-bill tropics nest in the tall trees with 500 yards of the house, and one can hear the three species of pigeons and also the two fruit doves while standing on the verandah of the hotel. On the lawn within twenty feet of the house at times a Golden Plover strolls about, and has been here continuously for the last four years according to Mr. Wallace, the hotel man, ever since its mate was shot. Mr. Wallace says a number of Golden Plovers remain here the year around, and during March I have seen over a dozen regularly in the pasture. Scattering others are seen in taro fields toward and one or more birds have been noted flying up from the beach. Curlew do not appear with them, as is the case in the Marquesas Islands on the open hills, or the Tuamotus on the beaches.

Barred Rail are common on the hills and are frequently flushed from the trail. I have seen five at the same time in the pasture near the house feeding near cattle, but when

I appeared all ran or flew to cover in the forest. A nest containing three eggs was found by children a few days before our arrival on the ground close by the trail. The birds are accused by Mr. Wallace of eating hens' eggs from outlying nests. A sharp cheek-cheek-cheek is often the call when startled, and the birds often jump from the trail and fly into the cover on the side instead of running through the grass.

Toothed-Pigeon is often heard in the forest and is heard from the verandah calling within 200 yards of the house; Coooo, called once is the note of this pigeon and is often ventriloquial. The call is repeated at intervals of from ten to forty seconds, and continues for maybe five minutes, and then the bird may be silent for fifteen or a longer time. The birds are heard from the upper branches of trees in the forest, and eat green fruits at this season. Mrs. Wallace saw thirteen one day on the ground in the pasture, she says. The natives are well acquainted with the bird, and it is probably not rare on the island. I have heard six or more calling in one day, two at a time not infrequently.

White-chinned Pigeon is not uncommon near the Rest House, and calls Coco about five times with considerable intervals between each series. They were seen several

times flying high over the forest from canon to another but the three or four taken were on top of the island in forest.

Lupe or common pigeon is hunted by natives and sold in Apia during open season, though last year sales languished as birds were said to have worms in intestines. I have heard several calling in the forest, but collected none on this island yet. An entirely different sort of note is heard from these birds, a gurgling, low-pitched sound that is heard a much less distance than the other two species.

Green Doves are common in the forests and a nest was seen up in a small tree twenty feet, a few twigs in a precarious place on a small limb, but a couple of days later I called and found it had disappeared. The birds feed in the same trees that the other dove frequents and both species seem partial to a species of banyan tree, which feeds also the larger Aplonis. All three species of birds are found feeding especially about 4 P. M. The call of this dove is an oft-repeated cooo-cooo-coo-cuku-coocuku-coocuku, repeated twenty times and then a rest for a minute or two to begin over again. Sometimes only eight or ten coos are heard, six or more birds often

heard at the same time calling.

Carmine-banded dove is a common species and is usually heard calling from the top of a banyan tree where they are feeding, the call being about the same tone as the green dove, but has not the cuku call.

Aplonis large is a common bird from beach to top of island. They like to perch on dead limbs or prominent lookouts and fly about in small companies, family groups possibly, from one part of forest to another, feeding often in the tops of the banyan trees with doves on the small berries.

Aplonis brevirostris is not uncommon, but at this time is only seen in pairs frequently perched on high trees. Pleasant, though weak call or song is uttered, and birds seem nesting at this season.

Euie or longbill is not an uncommon bird but is much oftener heard than seen. They seem to call sometimes all night, whew-e-whewee-u-ee, or fuisee-u-ee is one common sound. Most weird and loud of all the bird calls usually in evening and daylight hours. Repeat the same call for a half hour, or at night it seems hours one hears them calling away off in the jungle.

Black thrush is a common bird in the forest and several nests have been found, one with two eggs in the fork of a tree fern only 2 1/2 feet from the ground, the nest being well made of the green moss so abundant everywhere. The bird flew off silently the first time, but the second it went off hurriedly calling the rapid danger call, chee-chee-chee-chee, that one often hears, though he may not see the bird. Other nests of the green moss were seen against trunks of trees from four to ten feet up. The two eggs were incubated and the shells were very thin. The eggs were spotted and marked much like ^{the} russet-backed thrush of the Pacific Coast; both broke when trying to blow them. They had reddish brown spots mostly about the larger end, and measured 2.80 by 2.70 by 2. cm., or 28 mm. by 20 and 27 by 20 mm. This species feeds on the ground more than most of the land birds.

Shrike is a common bird, flying about in Apia as well as in the open clearings near the top of the island; cheep, a single call, is often heard but a loud short song is often heard uttered by the male.

Yellow-belly usually is found in the forest and not infrequently goes well up in the trees in search of food; a common bird.

Broadbill is a lively little flycatcher of the forest and has a strong whistle repeated four or five times in the nesting season. One young fresh from the nest was taken last of March, just able to fly.

Fantail is a common species and is tame, flying around and in front of one in the forest trails, and also in the open, catching insects and small moths. It struts about on low twigs spreading the tail, and on the move constantly. A nest was found along a trail eighteen feet up on a small limb of a young tree. The nest was of rootlets and had no particular lining but a streamer a foot long was attached to the bottom of the nest to disguise it.

Two fresh eggs taken on March 12 were creamy, with reddish brown spots mostly around the larger end; one had a circlet of large spots near the center of the egg. The male has a pleasing short song which enlivens the forest. The egg measured 1.75 by 1.30 and 1.70 by 1.30 mm.

Redbreast is a common forest bird and the male has a little weak song repeated every few seconds for twenty times or so in succession.

Grayback is rare here and only three or four seen. Two taken in low shrubbery and the other one was shot from top of high tree unseen till it fell, the shot being fired at a yelloweye.

Bluebird is seen flying in pairs across the cleared land; sometimes it is flushed from the side of a trail. A bird was seen making a nest in the fork of a small tree fifteen feet up; it flew with moss to tree, staying in nest twenty seconds then to near trees a few feet from ground and picked moss, spending ten seconds one time from nest till back with moss. It returned to nest two times with moss in one minute when timed by watch. Got moss ten times or more then flew away out of sight. Nest exposed to open sky, and calling two days later seemed to be some more work done but not much; 1:20 P. M. was time bird was at nest.

Paroquet is a common bird from shore to island top. Pairs of birds are often seen flying from coconut trees near beach to the top of island. They feed on buds of trees which grow in clusters on top of island.

Swift is a common bird and a colony was found nesting in a long lava tunnel, some swifts' nests being close to hanging bats. Fresh eggs and young swifts of all sizes as well as fresh nests were seen. Most of the nests were in absolute darkness, the tunnel being 300 or more feet long from one to an opening at other end. Birds entered from both ends, and nests were scattered along the walls, but majority were near the top. Some nests were shallow, while others were much deeper; all were made of

green moss which is abundant everywhere. Those that had been used were usually inclined outward, while the fresh ones were upright. Fifty nests were seen probably. A lot of bat guano was noticed, and the bats mostly left their places when the light was flashed on them. A few of the bats went outside the tunnel and flew about through the trees along the stream which flows into the tunnel. Swifts hawk along the trail at various points and are always in evidence over the clearings. A few fly close to the ground and in one clearing where taro was growing a score were catching food under the lofty branches of a big tree thirty yards up from the ground, circling around and back and forth in a compass of 100 feet square. Kik-kik-kik-kik is one of the rapid calls they give when disturbed in the cave or tunnel where nesting; sounds much like clicking teeth.

Kingfishers are common in the clearings, but seldom noticed in the thick forest. One young one flew into the dining room at the Rest House and I caught it on the windowsill. The birds often sit upright as a penguin on the open limbs, which they are partial to. The males call often from their high perches but are not as loud as the Tutuila birds. Several flew about Vilima, and the hill where the grave of R. L. Stevenson is placed, one day seeking nesting sites evidently.

Honeyeaters, red and black, are partial to the lantana patches, and are seen there hanging upside down, often feeding on the blossoms. Males chase one another for a 100 yards or more. They are not infrequently seen in the thick forest and are often seen high up in tall trees. Several have been seen being chased by the larger honey eater.

Warbler is a common bird everywhere from shore to island top. They often chase other birds. Young birds being fed are seen in March. They feed often in blossoms and fruit in high trees in the forest. A couple keep about the Rest House and keep up a chatter when one of the eight cats walks toward the bush they are in.

Barn Owl was flushed from large banyan tree when shooting a dove, and a day later another was flushed from same spot; both shot. They are heard calling at night around the hotel.

Noddy Tern and Fairy Tern both nest in the forest near top, and Fairy Terns with fish in bills are seen six miles inland near island top.

Yellowbill tropic birds are common in forest section, and one pair evidently nests near Rest House as birds fly into canon often. Several flew about Vilima, and the hill where the grave of R. L. Stevenson is placed, one day seeking nesting sites evidently.

April 8.

Out in A. M. yesterday and today and get a few birds. One fuie made a continual call when I approached the probable vicinity of his nest, calling something like the thrushes but louder and coarser; flew away some distance, and when I remained still he gradually returned calling all the time; wheu-wheu-keokuk-keokuk is a common call in the evening; wheu-wheu is a common call also. The larger honey-eater is called here at the Rest House, 'Peter Fabricus', as that is about one of the songs the bird sings with accent on the bri. Is name of land owner here. Got under a tree where tooth-billed pigeon called but could not see him. Other day did the same and finally hammered on log with a stick and bird flew off on other side tree. Couple of gallinules seen today; one close to deserted house. Have seen but one before but likely more plentiful in taro beds. Pair of bluebirds noted chasing about for a minute or two in forest, finally stopped and got both; have plain little whistling call rapidly repeated when chasing. Pigeon Lupe has low gurgling call, cu-cu-cu-cu-cu-cu-cu-cu much lower than other doves or other pigeons.

April 9.

Out to top of ridge and got five graybacks during the day; two birds twice in trees together and strange to me; all five were males nesting in most birds.

April 11.

To beach and heard that the 'France' was in Pango, so take Ontario for there on 12th.

A nest of the Honeyeater was found in a mango tree by the street by a couple of natives who were scraping the building within a few feet of the nest. Both birds were flying about as I examined the nest, and held in my hand the two young birds that had just left the nest, probably when disturbed by the natives. The nest is a small one suspended to three green mango leaves and composed principally of fine shreds from the nearby coconut trees. It measures outside 7 cm. by 5 cm. and inside 4 cm. deep and 5 cm. wide, and is placed near the outside of the tree, but ten feet or so from the side of a warehouse, and twenty feet from the paved road where dozens of people pass daily, although on the far side of the tree from the road. Both old birds fly about and light in the tree and follow a young bird as it flutters off a few feet to the ground. The birds are heard constantly in the coconut trees along the roadside, but seldom seen in the forest. A young bird was seen to visit several blossoms of a small tree overhanging the bay and get food from each a few days since. Doves and Kingfishers are heard after dark calling on the hillside back of the Governor's residence and are probably nesting. Yelloweyes were uncommon on the days I hunted toward the top of the island and no flycatchers were found.

Leave on March 2nd for Apia, the 'France' having left for the Phoenix Islands last week.

THE PROVIDENCE SUNDAY JOURNAL, JANUARY 13, 1924

SCIENCE INVADES SOUTH SEA ISLANDS

Brown Man, Executive Member of Harry Payne Whitney Expedition, on Brief Furlough After Study of Fascinating Lands of Southern Pacific.—Trade Routes Avoided in Exploration and Search for Specimens Which Will Continue Until 1925

DISCOVERERS and traders began it. Writers took it up and made the South Sea Islands one of the most romantically fascinating areas on the globe. The naturalist and the scientist have contributed their lore. But to-day things seen and experienced by the first white men to visit the distant archipelago that spreads just south of the Hawaiian Islands and east of Australia, are no more, or greatly changed.

Conventional clothing has followed the trail of western civilization. Canned goods are served up with the native poi. Trousered white men have set up governments over the tattooed tribal chiefs. The life of the natives, even their manners, have been influenced by these foreign visitors.

The romance itself, woven about the islands by the white man, has not gone untouched with the march of time. It became another South Sea bubble when pricked by that comic destroyer Captain Traprock, who made the romance a laughing stock as "Don Quixote" did the extravagant romances of mediaeval knights and ladies and magicians. And fading and changing with the human life and the romance, are the bird and animal life, under contact from the outside world.

It is to rescue some of this for future generations that the Harry Payne Whitney South Sea expedition is now collecting bird specimens and conducting a general scientific exploration among the widely scattered and little known island groups of the South Pacific. Through Mr. Whitney's generosity, the American Museum of Natural History in New York has been able to do this.

(Cont'd on page 26)



Rollo H. Beck,
field leader of the Whitney
South Sea Expedition, and a
Polynesian assistant, on
Tarakava Island, taking notes
on the nest and eggs of
the "booby"

(Cont'd from page 25)



Typical mountain
valley of the Marquesas Islands

Five Years to Complete Work

The work began in September, 1920, and will continue at least until the autumn of 1925. Rollo H. Beck, a veteran exploring naturalist, is the field leader, and Robert Cushman Murphy, Brown, 1911, associate curator of marine birds at the museum, is executive member of the museum committee in charge of the project, which numbers also Dr. Leonard C. Sanford and Dr. Frank M. Chapman.

Mr. Murphy has already spent several months in the South Pacific and plans to rejoin the expedition at Tonga or Fiji some time this year. In this city and elsewhere he has lectured on some of his previous expeditions for the museum, notably the guano islands off South America.

Equipped with their own vessel, the power schooner *France*, which was built in Tahiti in 1918, the museum's representatives have been independent of trade routes, and have thus far made studies and collections of upward of 90 islands of the Society, Marquesas, Tuamotu, America, Austral and Cook groups of eastern Polynesia. "At no locality has the destruction of life been excessive or serious," says Mr. Murphy, "and in the case of most of the sea birds (the expedition is primarily ornithological, though zoological and other subjects are covered), the specimens have been taken from colonies containing hundreds of thousands. The great collection of plants, birds, fishes and other material obtained by the Whitney expedition are furnishing the data for reports of high scientific value.

"At the present time an exhibit of specimens, charts, photographs and books illustrating the expedition's work, has been installed temporarily in the main hall of the museum. These are of utmost value, especially when made in the numerous islands at which the fauna and the people are altering materially with changing conditions.

"That it is high time for such an expedition to obtain examples of the Polynesian life is evidenced by the decrease in the population of birds and other animals at nearly all of the inhabited isles. For many years extinction has been approaching, and it is well known that certain kinds of birds secured or described by 18th century naturalists, have long since been wiped out of existence.

"The introduction of pigs, dogs, cats, and even of the mongoose, into islands which had no mammalian fauna; the rapid spread of alien minah and weaver birds, and of a hawk transported from

Australia to help reduce the rat plague, and the seasonal concentration of copra workers, or of pearl on beche-de-mer fishermen upon small islets, make it inevitable that not a few of the birds peculiar to the region are doomed as surely as the splendid race of aboriginal man. So science in this instance has had no time to lose."

The itinerary so far of the expedition is thus described by Mr. Murphy: "Mr. Beck and his companions have seldom rested long in any port. After a reconnaissance of classic Tahiti, they sailed north of the line to Christmas Island, where Pere Rougier, a widely known French priest, operates great coconut plantations. Then the schooner *France* made the first of three visits to the romantic Marquesas, whose once proud tribes are reduced to a tragic remnant."

It was on Hivaoa Island in the Marquesas that Mr. Beck found the Government administrator had moved, having been driven from Uukuhiva by the nonos, "a mean midget fly, the bites of which raise welts far larger than those produced by the mosquito." On Hivaoa they were "exposed merely to the milder torment of the mosquito."

Mr. Beck reports that the Marquesan greeting sounds more like "co-ow" than anything else. On one occasion he had to pass through a village lane with all the

natives lined up to inspect him and "co-owing" to right and left. Like our passing the time of day on meeting the remote farmer, he received a "co-ow" from a native and his wife in a desolate canyon returning with a load of bananas.

Bananas are not scarce in the South Sea Islands, and the wife was carrying them.

Warm Welcome on Every Side

Friendliness and hospitality are met everywhere, and reached an uncomfortable extent on the island of Rapa which is the "Uttermost Thule" of the Pacific, as Mr. Murphy expresses it, and one of the least frequently visited. It is "renowned for its peerless sailors and for its interminable hospitality." Arriving on the island Mr. Beck and his companions went from one thatched home to another, seven in all, squatting on straw mats before successive feasts of fish, pork, taro root, two-foot lobsters and the native dish, poi-poi varied now and then with roast chicken, coconut milk and bananas. The service plates were fresh banana leaves.

Poi-poi is made from the taro root ponded into what looked to Mr. Beck like wet stick dough with a lot of yeast in it, and felt the same to fingers which do the work of knives and forks in the South seas. He nibbled it "gingerly," and found it not unpleasant. But it is a delicacy to the Polynesians. There is another brand which is even more exotic to the foreign palate. It is made from breadfruit which is allowed to become gamey by being buried in the earth for a number of months. Water or molasses-like syrup made from roots helps to wash down the poi-poi.

Five days were spent on Rapa with daily lunch and dinner engagements for the members of the expedition. Practically every home in the village entertained the social lions. As suggested by the captain of the *France*, a case of kerosene was presented to the hosts for their little



(Cont'd from
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The English non-conformist missionary church on the lagoon shore of Apakaki Atol in the Tuamotu group

mission church whose light makes a beacon for the harbor. This pleased them so mightily that when the visitors departed they bore off many packages of poi-poi given by the members of the church.

On Rimitara and Rurutu, some hun-

dreds of miles northwest of Rapa, the members of the expedition found the men did most of the work in the fields, leaving the women at home to make mats and hats. But at Rapa there are many more women than men, giving the latter an

"enviable position." The Rapa women have to work in the fields while the Rapa men go fishing all day, an occupation they pursue rapaciously as one might say. But their sea experience has made them skillful sailors, and they are much sought



The schooner
"France"
property of the
American Museum
of Natural History and
headquarters of the Whitney
South Sea expedition

Photos by
American Museum
of Natural History
N.Y.

(Cont'd from p. 27)

Village
scene
on the shore
of the lagoon,
Hao Island, in
the Tuamotó
group



after to navigate vessels among the islands.

Leaving hospitable Rapa, the France turned eastward to lonely Pitcairn, where live the descendants of the crew of the British ship *Bounty* which mutinied in 1790 and settled on the island. The present inhabitants were found "happy, law-abiding and religious, suffering not at all for the stormy sins of their fathers." The France then called at Ducie, its easternmost goal and returned to Tahiti by way of the thickly strewn Tuamotus, sending ashore the boats to inviting rock or palm fringed strands.

Extensive Collection Has Already Arrived

An invaluable and extensive collection is already lodged in the museum as the result of the work so far of the expedition. When it is over the museum will have, it is believed, one of the most complete natural and historic collections from the South Sea Islands yet obtained.

"To consider the birds alone, as the most important element of the treasure," says Mr. Murphy, "there are shearwaters and petrels of many species; boobies and man-o'-war birds, herons, ducks, curlews and other shore birds, cuckoos, swifts and warblers of little known or hitherto unknown kinds. There are sandpipers, rails and flycatchers which Lord Rothschild in 1907 mourned in his supertuous monograph on 'Extinct Birds,' believing that no more of these forms existed alive. There is Peale's petrel, first taken on Wilkes' voyage around the world and not found for the last three-quarters of a century. There are red-tailed tropic-birds,

whose satin feathers shed a rosy glow, and whose spindling tail plumes are valued by Polynesian damsels to-day as they were for the headdresses of Typee chiefs of old.

"Fortunately, in this sort of plumage traffic the victim is not slain, the two long tail feathers being merely plucked out while the confident parent bird broods over its powder-puff nestlings. There is the snowy, wraithlike fairy tern, which hardly looks like a product of nature, and which balances its single egg precariously upon bare branch or palm frond. There are tiny, terrestrial kingfishers, green in one light, blue in another. They never wet their filmy wings by diving, but prefer to forage for insects and for the live-island lizards, which scuttle through the vegetation. There are paroquets the size of sparrows, unbelievably bizarre in red and blue and emerald.

"And then there are the fruit pigeons, most exquisite of all Pacific birds, clad in grays, metallic greens and pastel hues, with crowns of white, or lilac, or mauve, or blazing crimson. In the words of a visitor to the museum, the fruit pigeons are like blood oranges, like peacock's tails, like precious stones. There is a different species for every island group, and nowhere can they all be seen together save at the American Museum of Natural History.

"For the present, these marvellous birds are in the hands of zoologists. But the increased space of the new wing will provide for expansion of the over-crowded exhibits, and eventually the beautiful forms of life from the Eden of the South Seas shall be placed where all may freely enjoy them."

(Cont'd from p. 28)



Girls of Rapa Island, Austral group, the southernmost island of Polynesia, and the least visited

Endemic Birds.

The wandering albatross is the commonest of the northern shorebirds that wing their way to the southern islands of the Eastern Polynesian region, and a few can be found throughout the group on many of the islands of French Oceania. While they live usually along the coast either inside or

Golden Plover.

The golden plover, with the wandering tattler and bristle-thighed curlew, is one of the common migrants to the South Pacific Islands, retreating to the north with the coming of spring in the northern hemisphere.

I have collected them in worn summer plumage in northern Argentina as they came into the sprouting wheatfields of the coast region and have flushed small flocks on the tundra-like guanaco pastures about Lake Junin in the high Andes just before their northward flight in March.

On Eiau Island, one of the northern Marquesas, they are found commonly in January on the barren hilltops where the wild pigs and sheep keep the vegetation closely nibbled off, while on the islands of Kauehi, Kaukuru and Raraka in the Tuamotu Archipelago, their feeding grounds were found on marshy flats on the lagoon shores at sea level.

Wandering Tattler.

The wandering tattler is the commonest of the northern shorebirds that wing their way to the southern islands of the Eastern Polynesian region, and a few can be found throughout the year on many of the Islands of French Oceania. While they live usually along the reefs either inside or

outside the lagoons, some of them haunt the highlands of some islands as was the case in October, 1922, when they were found with the golden plover about the dry rocky hilltops of Eiau Island in the Marquesas Islands. On the California coast they are usually close followers of the shore-line and are seen feeding just above the surf on the rocky shores gathering small marine animals when the tide is low.

Fregetta grallaria.

This petrel was found nesting on Santa Clara or Goat Island, a short distance from ~~Maska~~-tierra Island, one of the Juan Fernandez group, some 400 miles off the Chilean coast. Nests were found under boulders and rocks near the landing place on the lee side of the island but none were located on the higher parts of the island, although the time at my disposal was not sufficient to thoroughly explore the many cliffs. Strange to say, the natives of Masatierra knew nothing about the nesting of the petrels on Santa Clara Island, though they frequently landed there and the nests were but a few rods from the shore. It is likely that the birds nest on the high cliffs of Masatierra also as the species is common about the island a few miles offshore. They range well in toward the Chilean coast and

have the habit of kicking the water with the leeward foot while feeding, using both feet only when heading directly into the wind. About the Marquesas Islands, far to the westward of the Juan Fernandez Islands, I later saw the white-chinned (albigularis) using the same method of touching the water while searching for food, but several other species along the Pacific coast of the Americas use both feet under similar circumstances.

This species was also found nesting commonly on a small islet less than a mile from Rapa Island in the South Pacific and fresh and incubated eggs were taken in March of 1922. The nests were found under rocks and ledges as well as under the clumps of tussock grass that grew profusely over the steep sides of the island.

The eggs were usually placed on layer of dead grass stems and some nests were thickly padded with the soft material, while in a few cases under ledges or in a deep cleft of rock the egg laid on the bare soil which was slightly hollowed to hold it. The young birds apparently closely resemble the adults as soon as the down is shed.

Noddy Tern

The noddy tern is a common resident throughout the western Pacific. On a small rock near Socorro Island in the Revilla Gigedo off Mexico it nests on the bare rocks with the sooty tern and on Clipperton a good many nest amongs the hordes of sooty terns that cover a couple of small islands in the lagoon. Throughout the Tuamotu Archipelago most of the noddies nest above the ground. In some out-of-the-way places the nests may be but a foot or so elevated in low bushes or shrubs while in other islands high coconut trees hold the nests. Coconut trees are favorite nesting spots in many islands and these are frequently used close by the habitation of the natives. On Mangareva Island, one of the eastern Tuamotus, a few nest on the cliffs in the center of the island and in the Marquesas Islands the noddies in considerable numbers nest on cliffs and inaccessible peaks near the central part of the mountain ranges.

The noddy tern does not wander as far from land to get food as does the sooty tern and thirty miles is probably as far as most of the noddies leave their nesting sites, while the sooty tern will often go off two hundred miles. On the coral beaches of the low atolls of the

Tuamotus one can often see flocks of noddies sitting close to the water or perhaps roosting on the rocks that are found on the reefs, waiting for the appearance of a school of fish outside the reef. On some islands the noddies seem to prefer dead pandanus trees for roosts and it is not unlikely that the introduced cats have forced this change in the birds' habits. Large bulky nests of sticks and twigs are often made and the same nest is often repaired and used many seasons in succession.

Frequently one finds bits of shell and coral in nests as decorative additions apparently for it is usually but a small proportion of nests in any given locality that exhibit this trait.

Sula piscator.

The red-footed booby is of common occurrence in the western Pacific, nesting in colonies on many islands of French Oceanic and in the Galapagos and Revilla Gigedo groups. On Clarion Island, one of the Revilla Gigedos, the birds nest in bushes in the center of the island, using the same nest year after year and under some of the oldest nests several sacks of guano might be gathered from each nest, though the entire quantity is hardly sufficient for commercial utilization. On this island the great majority of

nesting birds are in the white plumage, while in the Galapagos, a thousand miles south, the gray phase of plumage predominates.

In the Tuamotus, from Ducie the extreme eastern island to Matihiva the extreme western, the gray birds are prevalent, though here a white tail seems to mark the oldest birds through a great part of the extensive region.

On Hatutu Island, the northwesternmost of the Marquesas, the red-footed nests largely in clumps of trees near the top of the island, a few only using the bushes nearer the shore.

In nest building time the birds fly about in the vicinity of the nest looking for pieces of sticks and twigs, and frequently lighting in low bushes and on the ground to break off branches and twigs which are carried back to its mate who remains at the nest and takes the material from the carrier to carefully place it in position on the home site.

On Hiti Island, one of the Tuamotus, frigate birds (*Fregata ariel palmerstoni*) were nesting in the trees in close conjunction with the boobies, but a few feet separating the nests of the two species, and here the frigates seemed to harry the boobies much less than at some other points where I have observed them. Near Typee Bay on Nukuhiva

Island, one of the Marquesas, a colony of boobies and frigates live together and the boobies suffer much from marauding frigates. Young birds frequently make very small nests and the egg can be plainly seen from below looking up through the sticks.

Squid and flying fish are two favorite foods of the boobies and they often fish thirty or more miles from the nest. Between the islands of Tahiti and Moorea, of the Society Group, red-footed boobies are usually seen fishing and these birds are mostly from Tetiaroa Island, thirty miles to the northward. Flying fish are sometimes taken in the air by chasing boobies but most of the food of the birds is secured by diving for it in the schools of fish as they are driven to the surface by larger fish from below.

Red-tailed Tropic Bird.

Though this species is often noted along the Pacific Coast of North America from Lower California south, the nests have not been encountered on the Revilla Gigidos or Galapagos Islands on the four or five different trips I have made to this region. A hollow is rounded out in the sand or amongs the coral rocks, and one bird of the pair will usually be found dozing or sleeping on the nest except from ten to three in the daytime when the pair change places. The birds coming in from the sea sail about over the colony

calling loudly and they are often joined for a spell by the setting bird, both flying around in the vicinity of the nest till one settles and the other goes out to sea. At Oeno Island, 80 miles north of Pitcairn Island, of Bounty Mutiny fame, the birds find nesting sites all over the island, under trees, bushes or grass, wherever a sheltered spot is found. About the eastern Society Islands this species seems to be replaced by the yellow-billed tropic bird while in the Marquesas group both species are found. At Hatutu, the northwestern island of the Marquesas, the birds nest high up along the tops of the cliffs, choosing sites usually on a ledge or at the base of a large rock where but a step or two is necessary before the bird can launch into the air. But a single egg is laid and in a large series there is great variation in size and coloration.

The long red tail feathers of the tropic bird are much admired by the Polynesians and in Papeete, the capital of French Oceania, one can usually tell when the nesting grounds of the tropic birds have been visited by a schooner, for many of the tail feathers can be seen adorning the hats of boys and girls on the streets. Usually no harm is done to the bird in plucking the two feathers and agile natives frequently pull feathers from sleeping birds without scaring the bird from the nest.

Savaii Island, Samoa,

April 30, 1924.

Reached here this morning with a new crew, having sent all the Tahitian crew home by a Raymond Whitcome Excursion steamer 'Resolute' from Apia. Got permission from the manager an hour and a half before the steamer left, crew packed, were paid off before the customs officer, and the American Consul on the steamer satisfied himself by questioning each one as he went aboard. Gave the Governor in Apia 33 specimens for his museum and he gave me a good letter to the Resident Commissioner, G. Bigg-Wither.

Have just seen the Commissioner and am now headed for Safuni Bay where we will stop and try to get into the interior which is mountainous and runs up to 6000 feet or thereabouts. Lack of water may interfere with plans. A tropic and a couple of fairy terns are the only birds seen as we near the island. A shrike noticed about the Commissioner's residence but I did not go away from the house on the beach. I caught 40 in a cyanide bottle one night after entering the net and 20 or so inside the next morning. Most of them full of our blood. Went up a pigsticker's trail to 2500 feet and found thrushes and redbreasts above 2500 feet, so went up with Ryan and Mrs. Beck and made camp at some waterholes in the rocks at 2500 feet. Here it was difficult to find wood dry enough to burn and that found wood furnished continually to make a fire. At 2500 feet the wood dried out on a rainless day so we could easily burn it but no dry wood is available above 2000 as rain is almost inevitable during

Safune, Samoa,

May 1 - May 15.

Found here the family of R. J. Flhaty who is making a picture of Samoan life on the lines of his Eskimo picture, 'Nannook of the North'. Has been here since May and has some months yet to finish. I watched him filming a bit of tattooing and surmise that he should have some very instructive pictures to show when he is through. He projected some of his film at night and had some fine views of sievas, fishing, etc.

Was out into the woods and find pigeons common; also saw a couple of bluebirds in the forest, tho' these seem to be more green than Upolu birds. Got one and another day heard a couple weakly calling and saw the pair flying around through the trees on the trail. I shot two and presently another called from the same tree and then another. Possibly it was one family. On the 5th we took outfit and went up to taro patches and into a native hut where 100 flies ranged by day and as soon as it was dark the flies settled and 1000,000,000 mosquitos came forth to make the night hideous with their vibrant wings about the net. I caught 46 in a cyanide bottle one night after entering the net and had 20 or so inside the next morning, most of them full of our blood. Went up a pighunters trail to 2900 feet and found thrushes and redbreasts above 2500 feet, so went up with Bryan and Mrs. Beck and made camp at some waterholes in the rocks at 2900 feet. Here it was difficult to find wood dry enough to burn and that found needed fanning continually to make a blaze. At 1300 feet the wood dried out on a rainless day so we could easily burn it but no dry wood is available above 2000 as rain is almost invariable during

every twenty-four hours. We cut a trail from 3000 to about 4000 feet and found no other birds than those lower down. Pigs were not rare. I find no babblers here. They were the most common night birds at Malololelei.

Three large boils are worrying Mrs. Beck greatly and we spent a few days back at the taro field, letting Correia and his wife return to the ship. I found a nest of redbreast on treefern 6 feet up where other fern forked off nicely. The nest was nicely made of green moss, and I saw three others in similar locations on other trees in the forest. I also found a nest of thrush in the roots of a fallen tree, 4 feet up. This was of green moss lined with a few dry bits of leaves. Correia shot a rail near a swamp. It was different from the vea and the only one seen. We got three or four blue pigeons, tho' the lupe were very common. We left on the eve of the 14th and sailed around to Salailua Bay where we find birds common; pigeons are abundant although they are hard to see in trees overhead. A ground dove was purchased at Safune which had flown into a chief's hut to escape from persecuting warblers and a pighunter said that he sometimes saw them in high hills. I did not see any, however, during five days' hunting in the pig country. Suitable ground here at Salailua and I go up to the top tomorrow to look around as Bryan got up there yesterday and on my trail none were discovered at 3000 feet. Heard and got one babbler(?) or fuie which was less loud in its calling than the birds of Upolu.

Savaii Island, Samoa (2)

Salailua Bay, May 18.

Broadbills are at sea level here and also a fantail was taken close to shore while the thrushes were seen at about 1500 feet and I think I heard several toothbill pigeons. Only a single blue pigeon was seen yesterday while a dozen lopes were calling at the same time. Swifts are abundant, flying about tree stumps catching insects as well as sweeping over the grass in forest clearings. Cocoanut and cocoa trees are little cared for now but taro receives attention at 500 feet and above, horses being used to convey it more often than at other places visited. I saw a couple of plotus boobies and a single wedgetailed shearwater as we neared here, flying along low over the water. Sea-birds are scarce here; although high in the air a tropic bird and a few fairy terns were seen.

May 19

Made camp at 2500 feet and worked up to above 5000 feet onto the top of a ridge. I found a small yellowish bird in flocks at 4000 feet and above and got several of them, feeding in leafy trees high up at times. Fuias were heard most commonly in the forest around 3000 feet. Correia got one green bird and I saw one fly over camp. Swifts nest in lava tunnels near the beach where bays congregate. There is not so much rain here as at Safune. We leave on the 25th for Apia. 'France' leaves Apia on the 28th for Suva and Mrs. Beck and myself leave on the 30th on the Tofua, seeing no shearwaters until nearly at Suva when a single aestrelat flies along near reef.

June 3

1924

We arrived at Suva and find minahs common about town, and swallows flying over the water close to the steamer picking up flies(?) seemingly. Rectirostris terns were flying over the bay and I saw a few lesser noddies when nearing port.



THE ROSE SERIES P. 10000
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A NATIVE VILLAGE, FIJI



NATIVE WARRIOR, FIJI.

HARRY GARDINER

FRIDAY, JUNE 5, 1925.

THE FIJI TIMES AND HERALD.

The France

A BIRD COLLECTION.

FIJI'S BEAUTIFUL CONTRIBUTION.

Just prior to the sailing of the schooner "France" for Tonga yesterday our representative had an opportunity, due to the invitation of the leader of the Whitney Scientific Expedition, Mr. Rollo Beck, of inspecting his collection of birds, secured while the France has been in Fiji waters.

The specimens have several pronounced and interesting features. There are many different kinds of the same bird, i.e., the one kind of bird with very varied plumage. Then we have young birds, able to fly, in no way dressed as either of their parents are. In fact, looking at these youngsters, the layman would never guess they belonged to the same species. Again the same coloured bird, let's say a parrot, will be found on islands A and C, while those on B in between have quite a different plumage. In all his wanderings Mr. Beck has never found the nests nor the eggs of either the cuckoo or the curlew. The latter migrates with what is locally called a snipe from the far away northern spaces. The collection is a most interesting one, and while there are most probably a few birds, not yet discovered, the collection should nearly cover all local species.

Prior to Mr. Beck's visit, scientists claimed there were some 50 odd species specially incidental to Fiji. Mr. Beck and Mr. Correia have so far discovered about eighty. Of these, 39 kinds were found on Viti Levu. They also discovered seven kinds of terns, two boobies (such as one seen sitting sedately on top of a beacon), a tropic bird and the king of all, the Frigate Bird.

Going through the many trays makes an intensely interesting study, the various species having so many varied colourings and markings.

In order to give some idea of the variety we noticed the following.

The Tropic bird is a lovely creature of white, with red tail, and was caught in the Taumotos.

In parrots, there was the well known blue and red Viti Levu parrot and also the glorious big green fellow, with breast flaming in yellow and orange. Then came the well-known Kadavu variety, known to many homes.

The Vanua Levu bird has a green back, with a deep reddish brown head and breast, with a collar of brilliant blue. The Taveuni bird is like his cousin in Vanua Levu, only he lacks the collar.

There were ten varieties of doves five coming from Viti Levu, whose feathers were speckled grey, green and yellow, and the pretty orange doves from Taveuni, Vanua Levu, Qamea, and others of the smaller islands.

The ground pigeon is brown and has lovely tints of purple of peacock ultramarine, with dove coloured necklets. These are found also in Samoa, Tonga and other groups. A pretty dove is found on some of the small islands. It has a pale dove collar necklet and a pronounced mauve or claret coloured crown.

The cuckoos, with their streaky white, brown and grey plumage, are reputed to lay their eggs in the nests of the tern, but Mr. Beck has never found such a case in his travels.

The Fly Catchers are dear little chaps, mostly found high up in the dense forests. There are specimens from Vanua Levu, sweet little birds of a rich dark blue with a delicate pale blue crown.

The starling is brown, with a grey streaked breast.

The Fantails are also pretty little chaps, well known to all frequenters of our gardens. In Kadavu only a variety is found of brown, with white breast. Others, better known, have brown bodies with dappled breasts, and another is grey all over in varying shades.

The swallow is there with his brown throat band and his fine cut shape.

The Levuana Pest.

The swift, often mistaken for the swallow, is black, and of much finer and slimmer build than the swallow.

Mr. Beck says the greatest attention should be given to this swift, which should be cultivated, as he believes it will prove of great value in controlling the Levuana moth. He found many of them flying round the crowns of coconut trees.

There were curlew and snipe (really the Wandering Tattler), and then came

the Ruddy Turnstone, red streaked with white breast, touched with orange and red legs.

The sparrow hawk is a well known nuisance to poultry farmers. It has a brick colour, ring of reddish brown and a dove grey back. Its young is coloured brown, the feathers edged with lighter brown, the breast whitish and streaked.

The Shrike thrushes are brown, some being black-throated with a grey spot behind the eye. They are found on the four big islands.

The Honeysucker is a well known bird. It has many garbs, the one with canary touches through the feathers being not only found on Ongea Island in this group, but also in Samoa and Tonga. The one from Rotumah is of black with vivid carmine splashed back and breast—a most unique marking. The Matuku and Viti Levu variety has a red crown, red under throat, canary and grey breast and black back, with reddish splash near tail.

Among the gayest of the bright plumed birds are the Thickheads, not a pretty name for such a pretty bird. They have bright canary breasts and

black. The ones from Viti Levu, Beqa and Kadavu have white throats with a narrow black ring. The Lau specimen has a thick black ring; the Taveuni bird has a yellow throat with a big black ring. The thickhead from the island of Vatu Vara, near Mango, is unique as it has a dark orange breast, but when young is of a dirty brown and spotted.

The Thrushes are a big family. Those from Gau are black, while those from Viti Levu have a greyish brown neck and reddish brown down the breast, and with brown back. The Taveuni species are black, with dove grey throat. The Kadavu kind have a yellow brown neck and black. At the Yasawas, the thrushes are like those on Viti Levu, only they have a deeper colour on the breast. The young are mostly spotted, some nearly black.

The Hawks are all brown, or have whitish breasts.

The collection shows how richly endowed Fiji is with lovely songsters and other birds, and every effort should be made to preserve them.

We are indebted to Mr. Beck for pleasant afternoon.

Suva, Fiji Islands,

June 7, 1924.

The 'France' got into Suva this morning and has to wait for several days to get on the slip. We have to replace the forward rigging as one side gave way in a squall off Savaii. We are waiting to hear from the Governor regarding permits. We met Mr. Martin and Mr. Belcher who helped Dr. Casey Wood while he was here.

June 14.

We met the Governor and had lunch with him. He seems favorable but wants me to make a written request for the permit and asks how many birds we want. I suggested 20 of each kind and said that I am willing to take less of rare birds.

Evidently fear of public opinion prevents full, unlimited permit such as the British Governor gave in Apia, Samoa and the French and American Governors in their islands. When the permit arrived it allowed 20 of all but insectivorous birds and 10 of those. He asked me about the goats put on Henderson as some English writer had sent him a letter asking if he could send a vessel to Henderson (3000 miles east of Suva) and kill the goats I left. An article in the Condor published in California had started off the Briton. Public opinion is freely expressed in Suva by means of the daily paper, the editor of which is always on the lookout for newsy items regarding anything.

July 1

Correia has gotten some birds in the last two weeks including two species of cuckoo and a string of parrots. Every bird here seems

to differ from the Samoan ones and a number not found in Samoa are present. We leave at sundown for the Lau group 200 miles to the eastward.

July 2

There was a light wind from the Northeast and we made thirty miles by sunset. We saw one shearwater, lightbreasted and dark above, not white-breasted. Kandavub Island is in sight.

July 3

Matuku Island

I went around to the chief's house for permission to hunt about 10 A. M. and found a couple of white traders. I saw four small white terns, the same as those taken on Rose Island, on a small rock near the houses. The men just coming in, later, said that there were many about. "I saw a swallow chase a heron over the water, and saw swallow nests under a jetty," said a trader. I saw only a couple. I went up to the top of the island in the rain and saw a pair of large hawks; got a small bluish one. Correia got five going up a trail to the other side of the island. Honeyeaters and browneyes are common. Wattled honey eaters are common everywhere and small ones are also abundant. A Southeast wind started with a gale at night and we dropped the second anchor, dragging but little.

July 4

I went over the ridge and up in the forest on the north side, but found no fantails, nor doves. Correia heard a couple of doves. A flock of forty or so browneyes were near the top in bushes. These differ but little from yellow-eyes in Samoa, seemingly. A thousand or

so big bats in a few trees near the top, were seen, but there were no caves for small ones perhaps, as we see no swifts which nest many times in caves with bats. We saw a pair or two of large hawks along the top of the ridge, but they will not fly close to me. A small one sits in a tree and calls rapidly. We saw both honeyeaters from the shore to the top of the island at 1200 feet. We got a few paroquets in coconuts and a couple in a flamboyant tree. These are not rare. Pigeons are frequently barking quite like a dog. I called one to me in the forest and shot him with aux; then the female flew close and lit and I got her also with aux. There are a few shrikes, but I miss the kingfishers and swifts and the large aplonis. A single swallow is flying along the ridge before a rain squall.

Matuku Island was reached July 3 at 10 A. M. See above.

On the lower mountain sides and on ridges running up to the main ridge, one sees much plume grass. Some of the native houses are built of this grass. One house entered had many mats well woven, but with a heavy border of red yarn attached. In another house a woman was stencilling a small design on a piece of tapa cloth, the stencil being a piece of green banana leaf in which the design was carefully cut. A black paint is the usual thing for marking. We saw several herons along the shore--all dark; also a couple of golden plover and a tattler. We did not see any terns except the four of the new kind taken in Samoa. This was on the first day. Corroin saw no doves today, nor did he hear any. The wind moderated toward night. I saw a couple of swallows on top of the ridge where I saw them yesterday.

July 7.

We went ashore early and I went around the island to the westward finding a good trail all the way, and villages with coconuts and bread-

Matuku Island, Fiji Islands.

July 5, 1924.

There has been a high wind from the southeast since yesterday and squalls during the night. I went ashore early and followed the shore eastward to find a marsh where ducks were reported to have been seen. This marsh which is on the east side of the island covers about five acres and a pair of ducks arose and left when I fired a shot. The ducks are evidently the same as those throughout the islands in French and Samoan waters. A well-kept trail, free of grass and leaves ran for miles even far away from the dwellings. We passed three villages of fifty or more inhabitants each. Each valley was well stocked with cocoanut trees, although these were growing haphazard and only a few seemingly had been planted. On top of the ridge there are forests, but on the lower mountain sides and on ridges running up to the main ridge, one sees much plume grass. Some of the native houses are built of this grass. One house entered had many mats well woven, but with a heavy border of red yarn attached. In another house a woman was stenciling a small design on a piece of tapa cloth, the stencil being a piece of green banana (?) leaf in which the design was carefully cut. A black paint is the usual thing for marking. We saw several herons along the shore--all dark; also a couple of golden plover and a tattler. We did not see any terns except the four of the new kind taken in Samoa. This was on the first day. Correia saw no doves today, nor did he hear any. The wind moderated toward night. I saw a couple of swallows on top of the ridge where I saw them yesterday.

July 7.

We went ashore early and I went around the island to the westward finding a good trail all the way, and valleys with cocoanuts and occas-

ional patches of yams. I saw a rail similar to the common Samoan rail fly ahead of me, and got a small, young, common kind of hawk with plumage somewhat like Coopers or sharp-shinned hawk. About four pairs of the large hawks live and fly about the higher parts of the island, while the smaller ones live all over the island. Correia is not sure now whether or not he really heard the doves the first day, but natives say that they are seen sometimes. The hawks probably keep them thinned out. The wattled honey eater is the most common bird on the island, while the small honey eater and the flycatcher are found frequently all over the wooded area. Pigeons are not common but can often be heard barking, sometimes three or four near each other.

Some of the warblers is a striking feature in the island, i. e., the wattled honey eater or honey eater.

July 10

Went around the shore to the west and in a heavily-wooded tree saw several white-eyes, as well as brown-eyes, eating the berries. Two of these trees are in the village where my hut is which a number of people are living but the birds are not disturbed by them. Leaf warblers are common along the mangrove bordered shore but no white birds were seen. Parakeets are not very common but flycatchers and honey eaters are to be seen from the shore to the top of the island; also, fantails are in pairs about the forests. I saw two yellow-billed terns fishing in the lagoon one day, and a couple of lesser frigate birds about high in the air. A couple of roseate were heard in the forest; they are reported as common on the island, but not on this side. Only a few whitehead pigeons were noted. One gallinule was seen but not secured. The women fish with small nets at the reef, but there is no fishing outside of the reef.

Maola Island, Fiji Islands.

July 8, 1924.

We sailed for Maola and arrived at one P. M. with a high wind blowing. Went ashore and found a gray fantail, but no warblers which were common birds on the last island.

July 9
We went up to the top of the island which has a fern-covered area over some of the upland and is easily traversed. The wind was strong. We saw, but did not secure, a couple of white-eyes. Pigeons, barking, are abundant. There is water in all the cañons and the absence of warblers is a striking feature to us, i. e., the wattled honey sucker or honey eater.

July 10
Went around the shore to the west and in a berry-covered tree saw several white-eyes, as well as brown-eyes, eating the berries. Two of these trees are in the village close by huts in which a number of people are living but the birds are not disturbed by them. Reef herons are common along the mangrove bordered shores but no white birds were seen. Paroquets are not very common but flycatchers and honey eaters are to be seen from the shore to the top of the island; also, fantails are in pairs about the forests. I saw two yellow-billed terns fishing in the lagoon one day, and a couple of lesser frigates flew about high in the air. A couple of roosters were heard in the forest; they are reported as common on the island, but not on this side. Only a few whitchin pigeons were noted. One gallinule was seen but not secured. The women fish with small nets on the reef, but there is no fishing outside of the reef.

Totoya Island, Fiji Islands,

July 15, 1924.

I arrived here at 9 A. M. after a rough night from Moala Island twenty-five miles away, and went about four miles along the lagoon shore toward the east but found only a few birds. The small honey sucker was the most common and brown-eyes were flocking in the mangroves under a large tree on which they were feeding. This was the same kind of tree in which the doves were feeding in Samoa, and there were three or four doves here at Totoya, eating with the brown-eyes. A male of the crimson-capped species was shot. Up high in the tree where the birds were feeding was a hawk's nest. Both large and small hawks were present and a single pigeon was heard. Black-headed fly-catchers are here as on the last two islands. We also heard a gallinule. Several lesser noddies and a couple of small white terns were seen just inside the reef as we entered, and a frigate sailed over, the species of which I was not sure.

July 16.

I went to the east side of the island and to the top of the ridge where I saw a half dozen swallows feeding. Also, three swifts flying about and feeding near the shore of the lagoon. I got one swift and three swallows. Pigeons of both kinds were seen but no doves, although the place where one was shot yesterday was examined twice. A nest of the small hawk was seen fifty feet up in a large tree near a native village and among cocoanut trees. Both birds flew to the tree while I was near but both flew away. The female came up with a lizard(?) or a stick but flew away while the male was at the nest. Large hawks fly high over the top of the island. A colony of two hundred or so fruit

bats were hanging in trees near the top of the island. A white heron was seen and secured by Correia; herons noted up to this time in Fiji have been dark colored. We lost the anchor in trying to hoist it and having already lost the stick of the other one at Moala Island, we have to start for Suva to replace them, with a head wind.

July 19

We reached Suva this morning having had a head wind all the way. I met Belcher, the artist, who showed me an Aestrelata that a man sent him from the east side of Kandavu Island. He was told that the natives got others there. We did not see one on the trip to Moala and other islands although we were less than fifty miles from the spot where these birds were secured.

July 21

July 21
The France
Times & Herald

LOSES AN ANCHOR.

A SEMI HURRICANE.

The Captain of the auxiliary schooner "France" reports that the little vessel, which returned to Suva on Saturday, has had a very trying experience since she left port on July 1. On Thursday, July 3, we anchored at 9.30 a.m. at Matuku in 17 fathoms, said Captain Stenbeck.

During the afternoon the wind increased to a gale, and at one a.m. I let go the port anchor, and paid out all the cable.

The squalls came down with hurricane force, and by daylight had dragged the vessel fully a hundred yards.

At noon the wind increased and it was still blowing strongly when we sailed for Moala.

On heaving up the anchors, I found that the port anchor had lost its stock, and it was evident that some of the links of both cables had been badly strained.

We had a rough trip to Moala, and anchored in 12 fathoms at 1 p.m. on Wednesday, July 9.

Again we had heavy squalls, and I had to fix the port anchor by lashing the kedje to it as an anchor stock.

During the night, we dragged close to the reef.

On Sunday, July 13, we hove up anchor, and made for Totoya, where we dropped our starboard anchor and run out 60 fathoms of chain in 16 fathoms of water, in Isthmus Bay.

On July 16 the wind hauled to the west, and as it looked like freshening, we decided to weigh anchor, but on heaving up, I found the cable had become fouled round a rock, and it snapped, leaving us with the loss of a good anchor and a good quantity of cable.

We had a good, although rough, passage to Suva.

The little vessel will have her ground tackle overhauled while in port.

July 26, 1924. *Fulanga.*

July 28, 1924.
We left Suva on the 23rd with 108 fathoms of new chain and a new anchor, a portion of which we expect the insurance companies to pay for. There was a light, fair wind yesterday, and the day before a heavy north wind in which the double-reefed main and the reefed foresails were used. Now we are sailing on the east side of Fulanga at the south end of Lay Group and are ready to enter the lagoon at Ongea Islands. A yellow-billed tropic bird this morning is the only bird noted near the island although a couple of frigate birds were seen 100 miles east of here. The absence of noddies is strange for we saw a flock near Moala in a heavy southeast wind when nearing that island the first time. No fairy terns have yet been seen in Fiji. Fulanga is heavily wooded all over the east side and a grove of cocoanuts is seen in a bay. 200 feet high or so is ridge. We went ashore at 10 o'clock on Ongea Ndriti and found new birds not found on Moala. The large pigeon is like the Samoan instead of Fijian and other birds are different from those taken previously. The island appears to be upraised coral and a trail across to small patches of cultivated ground in nooks of forest has been made by the natives, who were seen working in gardens. Some cocoanuts and papayas as well as small breadfruit trees and a couple of orange trees with nothing on them were observed. There is but little soil in the low places while on rocks, the trees and vines grow in cracks. Tracks of a large rail were seen and a single bergii tern flying over the lagoon, fishing. Before entering we saw a few red-foot boobies, sooty and noddy terns, fishing a couple of miles off the reef. There is fine anchorage near the island. The small rocks and islets are undercut by water into mushroom shape. Only two of the small honey eaters were seen and

secured. A yellow or two were seen, one alongside of and islet, and the

Ongea Islands, Fiji Islands,

July 26, 1924.

There is fine anchorage near the island. The small rocks and islets are undercut by water into mushroom shape.

July 28, to August 3.

We went over to Ongea Levu a mile to the north of the first anchorage and found yellow-billed tropics nesting in holes above the high water mark on small islets off the shore of the main island. There were young birds in four of the nests examined. Natives went to an island a few miles away and picked up about thirty lesser frigate birds, young; also a few red-footed boobies, young and old; and plotus booby. These were dragged looking specimens, being wet from spray and were intended for sale to us. They were in poor condition, however, so I did not buy any and the lot was thrown overboard from the canoe, since the natives do not eat them. A couple of bergii terns are flying about the bay or lagoon but no noddies are seen. Pigeons are common here but the black ones are seldom seen. I struck one tree where the yellow doves feed and got a few; also found a tree in which the yellow doves were feeding with the yellow-eyes. I found a warbler's nest of fine cocoanut shreds and holding one egg, fifteen feet high in a small tree in the forest. I shot what I supposed to be a parent bird as it came off of the nest, but it proved to be a young bird. Yellow-eyes eat the papayas before they are ripe and the natives have to pick them green, or they do, at any rate. Grey fantails are more rare than the brown ones and live in the older parts of the forest. Paroquets are not very common and feed largely in the cocoanut trees. Only two of the small honey suckers were seen and secured. A swallow or two were seen, one alongside of and islet, and the

other in the village. Swifts are common. Broadbills are also present in large numbers. Most of the small birds seem to have nested although some are ready again. The yellow-bellies are common, sometimes four males vying with each other in singing when I call them together in the forest. Only a female or two are present. Kingfishers are everywhere, in the forest as well as in the open, and shrikes also, although the latter keep to the high trees more than some birds.

August 4.

Went across to Fulanga this morning and the captain of a cutter came out and piloted us through the narrow pass and up to a protected anchorage, charging us a pound in and ten shillings out. The lagoon is studded with islets of various sizes but we collected only on the large island and that on the west end. No fantails were found and only two yellow-bellies. A couple of sooty flycatchers were taken and two or three others heard. Doves and pigeons of both kinds were common and a couple of large hawks were seen. One of these came down to my calling for birds and was missed the first time but came back for my second charge when I called again. This hawk had a lizard in its stomach. Swifts were common and yellow-eyes also, but the latter do not seem to bother papayas as they do on Ongea Islands, for I saw several ripe papayas and yellow-eyes right near them. The herons are white and blue as well as blue. Four white terns of new Rose Island species were flying in the lagoon as we came out and a couple of bergii terns were seen. Broadbills are not rare but are not as common as at Oenga.

A young yellow-billed tern was brought to me by a native but was too dirty to take. Shrikes were more common than on Oenga and feed in

in the same trees with the yellow doves and yellow-eyes. Wattled warblers were common and one of the small honeysuckers was secured from a cocoanut tree. A single swallow was in the village and lit on posts on the main street, thereby saving its life. We left on the 7th for Naiabo Island and spent three hours ashore.

August 7.

We left Fulanga at 10 oclock this morning and reached Naiabo Rock or Island of three or four acres and found plotus, red-footed boobies and lesser frigates nesting. Of several colonies of lesser frigates I have examined in the last four years this was the tamest by far, as I was able to photo the birds at close range and they came back to the nests at once after the gun was fired. Some young frigates were a week or two old while others were just hatched and a couple of dozen eggs or so were fresh while four dozen or more were incubated. Plotus boobies were mostly beginning to nest although there were several young just hatched, and only a hundred or so young flying or ready to fly. These two species were nesting on the ground while the red-footed boobies were on the low trees which cover the center of the island. The eggs were mostly in the red-foot nests which were from six feet up to fifteen or so, the trees not being over twenty feet high. A couple of ruddy turnstones were flushed as I walked along, but having a camera instead of my gun, I did not bag either. Correia caught red-foot boobies on nests and a couple of shots got ten lesser frigates. There were several herons around the island but none were taken and a few sooty terns were heard flying overhead. No noddies were about. We reached the island as the tide was falling and had but a couple of hours before safety demanded that we leave, since water was falling on the reef and the channel was

narrow and tortuous. This island was visited last week by natives of Oenga Levu who caught a hundred or more birds and brought them to us for sale, but they were too dirty. Little evidence of their visit was discernable except for a lot of loose frigate eggs in one part of the colony. The birds themselves were not disturbed and the plotus boobies were tamer than at Rose Island in American Samoa where the Naval vessel calls once a year. We leave at four o'clock and try to reach anchorage at one of the islands of Yagasa Cluster before dark. While nearing the island a dozen or so boobies circled about us but after leaving, no birds were seen.

August 8

We skinned birds until noon, Correia and I doing 6 lesser frigates and three red-foot boobies by 12 o'clock. After lunch Correia skinned the half dozen remaining and I went ashore. I caught a couple of snakes, both being sluggish and in shade. Gray fantails were the most common in the forest, occasional sooty flycatcher and, rarely, broadbills. Small honey suckers were not rare and both kinds of doves were heard; the large pigeon was also in evidence. A few swifts and three kingfishers were seen. No warblers were seen nor any yellow-bellies. A yellow-bill tropic bird flew from a cliff about 1 P. M. and three herons were flying along shore. Only a few cocoanut trees are here and there are no natives. There is good anchorage from the south and east winds.

August 9

With Bryan we went the mile or two across to Yangasa Levu Island from Navatuiloma Island where we are anchored and found the same birds present. Went to the top from the east side but found it impracticable to get over as deep holes and cliffs where we ascended the four hundred

feet made the ascent difficult. We saw a grove of forty or so cocoanut trees in a hollow on the east side and went to them, finding that the natives visit them occasionally. The trees are out of sight from the water in a hollow and a few trees are on the south corner where we landed. There is a well of fresh water there also, but lined with crab-holes, as well as by a few rocks placed there by natives. Gray fantails are most common here as on the other island, while on Ongea Islands they were rare. A white-capped tern was taken from a point of rock when we were returning and another was seen; also saw a Bergii tern. Got a shrike and Correia got a couple. Mine came to a tree where a few berries remained that are the food of the yellow doves. I saw some of the yellow doves there and shot a common dove in the same tree. Sailors caught a couple of snakes during the day, perhaps of two species. Weather is good and little rain lately. Fishing is poor, only one rare fish having been caught.

August 11

We went to west island in the morning and found a single ground dove in suitable ground. Other birds are as on other islands. I heard a rail on Yuvutha.

August 14

Went across to Yutha in the morning and ashore in the P. M. finding some about, some large pigeons, but there were a flock of black ones in a dead tree in a clearing. There is little forest and on the top of the island there are rounded hills with a small grove of trees. There were fantails on Yutha, but few parakeets and broadbills. No weedy vegetation, but again we found carriers.

Namukai Lau Island, Fiji Islands.

August 11, 1924.

We reached here at five P. M. from Navutuiloma of the Yangassa Cluster which we left at 1:30 P. M. We ran in slowly to good anchorage in about two fathoms close by a cutter near the trail over the hill. Several other islands are in sight. This one is steep on the north side and wooded, long and narrow. Birds were about the same in proportion on the four islands of the Yangassa Cluster, nearly all being heard on each of the four principal islands, which I visited, although the ground dove was seen on but one side. They cannot be plentiful or more would have been noted. I expect them on an island near Lakemba if my informant was correct in his statement when I saw him in Suva.

August 12

Went ashore and to the northwest end but found no yellow-bellies; on the 13th went in the other direction and found the center of the island largely cleared and planted to various crops. Correia found a dove's nest ten feet up in a small tree.

August 14

Went across to Mothe in the morning and ashore in the P. M. finding doves absent; also the large pigeons, but there was a flock of black ones in a dead tree in a clearing. There is little forest and on the top of the island there are rounded hills with a small grove of trees. There are no fantails on Mothe, but few paroquets and broadbills. No sooty flycatchers, but again we found warblers.

August 15

I sailed down in a boat to Karoni Island and found a few doves of both kinds and gray fantails; also thirty or so whitecapped terns sitting on rocks in the lagoon. A couple of Bergs terns were with them. Herons of dark and light plumage are common. Honeysuckers are not uncommon. Islets are several in number and covered with trees. Six canoes were seen in the afternoon coming across from Fulanga as the day is fine and the wind not heavy either today or yesterday. Another canoe is coming up from Kambara way. Sails of matting are seen on the canoes which are seaworthy craft. The inhabitants of this island are more intelligent and better looking people than on some other islands. Correia saw a few ducks outside a mangrove patch and spent yesterday and today after them but was unsuccessful.

August 16

I took a small boat and went to mangrove swamp for ducks and managed to get two. In the afternoon I sailed over to Oneata Island. It appears to be low and open country. Went ashore at Oneata for a couple of hours and got a couple of hawks, several of which were seen. Squeaking called both of them to me. One was sitting on a dead pandanus in a swamp and sailed toward me when I called. The swamp was of about 100 acres with a lot of reeds and a few scattered trees. Saw several ducks but well out, although a couple flew from shore in the evening, possibly from nests. One hawk had a rat in its stomach and the other one the feathers of a rail. At an elevation of two hundred feet, or a little less, there were open cleared hills with sandstone in places and ironwood and pandanus trees prominent. The north side has groves of other trees. The village has a large church. A heavy wind last year downed some of the houses.

We noted warblers, shrikes, kingfishers, gray fantails, paroquets and large hawks.

August 18

I got a couple of sooty flycatchers and Correia got one, while Hicks ran across a ground pigeon. I went through a lot of suitable country but saw no pigeons. Both kinds of doves are common but pigeons are scarce due to restricted forests. Nearly all the suitable ground has been cleared at some time or other and that not in use now lies idle for a while and is recleared and planted. Manioc and sweet potatoes are food crops although a lot of papayas and some bananas are grown. the chief gave a dance this evening and first the men, then the girls dressed in fancy headgear and wreaths and gave their versions, all of which were good. We staid until 11 o'clock but the crew did not get aboard until daylight. Women in the farther village were making a large tapa today, thirteen of them working at it while seated on the floor, using sweet potatoes for gluing the pieces together. Coloring matter is permanent as used on graves and does not fade in the sunlight. The tapa is spread over the graves and a cup or a dish placed upon it. We shall stay a day longer. Correia got a half dozen white-capped terns along the shore where they were driven by the heavy wind. We saw several plovers fishing outside the reef as we were in yesterday, and herons are common here. We have seen no noddy terns since arriving in the Lau group this time, tho I am expecting to see some at Marauho Island this week or next.

August 22

We left for the south in a heavy wind and squalls at times obscured all the islands, but we reached Koroa at 3 P. M. and anchored, but the

Komo Island, Fiji Islands.

and came around to anchor August 20, 1924. We set at dark as anchorage was not safe, and lay off the island.

We left Oneata Island this morning at daylight and anchored at Komo Island about 10 A. M. Went ashore and found birds very scarce, the small honey sucker being heard more often than the others. A few kingfishers, scattering swallows, a few yellow-eyes and four or five hawks constitute the bird life, although Correia saw a Tahitian cuckoo trail and found two nests of fantails close by the trail and three or four and I shot a dove on the small island to the west of Komo. Very few forest trees remain, practically the entire island being cultivated then to photograph on Monday. We saw a pigeon light in a tree and try though not all of it the same year. Manioc and sweet potatoes are the principal food crops and cocoanut trees are found growing about the coast in suitable places. The village has a hundred or more inhabitants and is now filled with visitors from Namuku who are here for a wedding of a big leafy tree. In the afternoon, as I was coming back, I saw a bird on the nest but I doubt if I can get to it without climbers.

There are no paroquets August 21. Saw fantails, but there are other small landbirds and a hawk or two. Big fields of manioc and sweet potatoes on the plateau above the village supplies three settlements.

We expected to leave this morning but a heavy southeast gale started this morning before daylight and will prevent our working the next island, so we shall stay a day longer. Correia got a half dozen

white-capped terns along the shore where they were driven by the heavy wind. We saw several plotus boobies fishing outside the reef as we went ashore and photographed the two fantail nests found along the trail on Saturday. Hicks got one of two or three hawks seen. I came in yesterday, and herons are common here. We have seen no noddy yet a couple of chickens in the forest. They seem not uncommon. Terns since arriving in the Lau group this time, tho I am expecting to see some at Marambo Island this week or next. Yellow-eyes, broadbills, kingfishers, doves of two kinds and the two

Birds are also here. August 22

August 23

We left for the south in a heavy wind and squalls at times obscured all the islands, but we reached Kambara at 3 P. M. and anchored, but the

wind came around to northward and we pulled out at dark as anchorage was not safe, and layd off the island.

August 23, 1924.

We came in to anchorage but a westerly wind prevented anchoring until after we went ashore to collect. I went across the island on a trail and found two nests of fantails close by the trail and three or four feet up in small trees. The birds staid on the nests and we left them to photograph on Monday. We saw a pigeon light in a tree and try to pull off twigs and finally getting a long one it flew off across the small clearing where I followed, stopping until it flew back again to the tree for more twigs; then I saw a nest fifty feet up, in the outer limbs of a big leafy tree. In the afternoon, as I was coming back, I saw a bird on the nest but I doubt if I can get to it without climbers. There are no paroquets here, nor brown fantails, but there are other small landbirds and a hawk or two. Big fields of manioc and sweet potatoes on the plateau above the village supplies three settlements.

We have seen no tubinares lately.

August 25..

Went ashore and photographed the two fantail nests found along the trail on Saturday. Hicks got one of two or three hawks seen. I got a couple of chickens in the forest. They seem not uncommon. Warblers are absent here as well as paroquets. Gray fantails, honeysuckers, yellow-eyes, broadbills, kingfishers, doves of two kinds and the two pigeons are also here.

August 26

We left at daylight for Marambo, ten miles from anchorage and arrive about 9 o'clock. Saw a few shearwaters and boobies fishing;

obscurus and a couple of dark ones, either cuneatus or noddy terns but am not sure which. I found a man and two boys on the island who had failed to reach Fulanga from Komo. They wanted a knife and some tobacco and refused transportation to Kambara. Warblers were common and a few gray fantails and yellow-eyes. Shrikes were common but no honey suckers were noted. Both pigeons, but only the common dove was heard. Few kingfishers; swifts common. Saw a heron's nest in a hole in a cliff a few feet above water--an old nest. I returned to Kambara for the night. We got some tobacco for the castaways; also a knife and they waited for a favorable wind to Fulanga which is in sight.

the inside and a trail runs in which the natives use to visit trees.

August 29

We were ashore until ten o'clock and I got a couple of ground doves, while Corveta got a barn owl and I saw a couple of rail. Shrikes are common; honey suckers are rare. I saw a yellow-eye come from a rotten pandanus about seven feet up and found a nest begun about fifteen inches down in the center. We left for Ten Island at 10 o'clock.

Wangava Island, Fiji Islands.

August 27

We ran over here this morning from anchorage at Kambara and found a brackish lake in the center of the island. This was about a mile long. Yellow-bellies were here but warblers were absent. Honey suckers, sooty flycatchers, shrikes, both doves and pigeons, kingfisher, but no black pigeons were seen although they are quite likely present. Bryan saw several chickens and Correia heard one. Small fish that roost on mangrove roots, with heads out of the water were in the lake, but no other fish were seen. Orange trees as well as quite a few cocoanuts were in the inside and a trail runs in which the natives use to visit trees.

August 28

We were ashore until ten o'clock and I got a couple of ground doves, while Correia got a barn owl and I saw a couple of rail. Shrikes are common; honey suckers are rare. I saw a yellow-eye come from a rotten pandanus stub seven feet up and found a nest begun about fifteen inches down in the center. We left for Aiwa Island at 10 o'clock.

September 1

Went ashore again and got a few ground doves and found another nest with two young a couple of days old in a nest four feet from the ground in a thicket. The parent flushed and flew off a short distance into a good cover. Three rail were secured but a couple of hawks, the latter coming often in answer to squeaking. No nest over to Lakemba is

Aiwa Island, Fiji Islands.

August 30, 1924.

We went ashore on east island and found ground doves more common, getting eight while Correia shoots at several on the west island, getting none. I flushed a bird from its nest on a pile of dead limbs

four feet off the ground in the jungle, and going back in the afternoon with the cameras, took photos in situ, but failed to secure the parent

which, although seen a couple of times while we were at the nest, kept well within cover. I got an owl, and a hawk kept high over the island ironwood trees. The doves and pigeons are in patches of forest near calling at times--a whistling call. A kingfisher sat on rocks a foot above water on the coast watching for fish. We got several large lizards, and one of the big green ones, which stirred in the bushes

as I passed. I also got a sea snake which was curled in a hole on the shore ten feet above the water. Yellow-bill tropic birds fly along the rocks at three P. M., five or six together. Bryan brings a fantail nest with two incubated eggs and the two eggs of the ground dove were incubated also. No honey suckers or paroquets were heard here but other small birds are present--warblers, yellow-eyes, kingfishers, gray fantails, broadbills, sooty flycatchers, a few swifts, but no swallows. A couple of plotus boobies flew across the lagoon to the northeast toward colonies twenty miles away.

September 1.

Went ashore again and got a few ground doves and found another nest with two young a couple of days old in a nest four feet from the ground in a thicket. The parent flushed and flew off a short distance into a good cover. Three rail were secured and a couple of hawks, the latter coming often in answer to squeaking. We went over to Lakemba in

the afternoon. And I got four. We saw a couple of nests in small cavities in the rocks today September 2 at Lakemba. were plentiful;

also Went ashore and found warblers, yellow-eyes and swifts common.

Honey suckers are rare and paroquets scarce, not over five being seen.

In the hills they are the same as Moala birds. Bubbles nesting in numbers—perhaps five-hundred pairs of plates and lesser frigates, and less than a hundred red-footed boobies. A couple of hawks were seen by

September 3

Correlia; also two yellow-eyes. We saw a few cocoanut trees in bearing;

Went ashore and, going to the top, found a few shrikes about the also papayas and a half-dozen banana trees, in the few square yards of ironwood trees. The doves and pigeons are in patches of forest near suitable soil. A few trees furnished nesting sites for red-footed boobies the beach, none being heard nor seen in the strips of forest near the low while the others nested all over the place, although the frigates upper parts of the island.

kept to the west end of the islet which did not cover more than three

The forest is scattered in strips in some of the cañons, while areas. Young frigates of all ages were found, while red-footed and on the ridges and hillsides scattered ironwood trees are common. Gray plates boobies' young were very small and there were still a great many fantails were not found although the natives reported a few and I hunted fresh eggs.

in suitable places. Kingfishers are common and I saw a yellow-eye building

September 3

ing a nest in top of a decayed cocoanut stump and found a few coarse rootlets for a foundation in a hole fifteen inches from the top. The male bird staid on top of the hole as a lookout while the female took in a bit of lining. Later I flushed a yellow-eye from the hole in an old pandanus stump, but she had only begun work. Pigeons are scarce, both species and both doves being present. Most of the interior of the island has been burnt over but along the coast, cocoanut groves extend around the island. One of several lesser boobies flying by the is-

land. Broken eggs of red September 4 and on this rock. This is evi-

dently not the nesting season for terns although scattering pairs are

We went ashore at 7 o'clock and got a dozen bats from a cave nesting. Several sea snakes were picked up in holes along the cliffs near shore; also a couple of loads of water before leaving for Argo and a turtle was seen. Golden plovers in very small numbers, are here Reefs where sea birds are expected. Several swallows were seen along

the shore last and I got four. We saw a couple of nests in small cavi-
ties in the rocks twenty feet up, out of reach. Swifts are plentiful;
also mosquitoes. A hawk was secured and several others seen. We left
at 10 o'clock for Argo Reef, arriving at Vanua Masi Islet at 2 P. M..
We found lesser frigates, red-footed and plotus boobies nesting in num-
bers--perhaps five-hundred pairs of plotus and lesser frigates, and less
than a hundred red-footed boobies. A couple of hawks were seen by
Correia; also two yellow-eyes. We saw a few cocoanut trees in bearing;
also papayas and a half-dozen banana trees, in the few square yards of
suitable soil. A few trees furnished nesting sites for red-footed boob-
ies while the others nested all over the place, although the frigates
kept to the west end of the islet which did not cover more than three
acres. Young frigates of all ages were found, while red-footed and
plotus boobies' young were very small and there were still a great many
fresh eggs.

September 5

Went ashore at Vanua Masi Islet for a couple of hours to do a lit-
tle photographing and then went across to another rock a mile to the
west where a few dozen nests of plotus booby, and a couple of nests of
noddy terns were found. A couple of dozen noddies were about this rock
and ten or so white-capped terns were resting on a rock off the west
end. I managed to get six noddies and a couple of white-capped terns,
and last night I got one of several lesser noddies flying by the is-
land. Broken eggs of noddies were found on this rock. This is evi-
dently not the nesting season for terns although scattering pairs are
nesting. Several sea snakes were picked up in holes along the cliffs
and a turtle was seen. Golden plover, in worn summer plumage, are here
again and I shot one at Lakemba--the only one in a flock of a dozen.

Latei Viti Islet, Reid Reef, Fiji Islands.

Tatlers are also becoming common.

September 7, 1924.

September 6

We remained at anchor over Sunday. There was a little rain last week. We raised anchor at daylight and left for Booby Rock in Reid Reef, reaching there at 10 o'clock. We found plotus boobies abundant, with dozens of young of all ages. A single sooty tern was seen on a nest under a rock, stowed away out of sight, but it flew away and I am not sure that it was not a sick bird. A few noddies were nesting and several young were found. We ran across to Latei Viti Islet--a pile of rocks sixty feet high and sixty feet wide by about a hundred yards long. We saw two turnstones, two herons, plotus boobies and terns nesting, fifty or more noddies and as many terns. Booby rock has about 25 terns and possibly 500 boobies. Fly across to Viti.

September 9, 1924.

Went ashore until noon and then left for Vavai Island where we stopped a couple of hours, finding a half-dozen noddy terns getting ready to nest. A wandering tattler flew around the islet which is 200 yards long with a few stunted trees on it but no land birds. It has a very rough coral top and walking is dangerous. At four o'clock we resumed our journey in a calm sea, with the engine going, to Taveuni Island ten miles north where we anchored close to the reef.

September 10 and 12

Malau

We went ashore on the north side and walked around to the village where we found a trail into the interior, and going on to the top of the island we found cultivated ground and quite a lot of coconuts. The interior of this island looks like a crater, but there are coral out-

Latei Viti Islet, Reid Reef, Fiji Islands.

September 7, 1924.

We remained at anchor over Sunday. There was a little rain last week but a good breeze most of the time and good weather. Sea snakes are common on these rocks, where they are found resting in holes. I found a tern's nest lined with a shed skin from a large snake, and a couple of boobies' nests in which a little snake skin had been used. We heard a couple of sooty terns passing over last night in the dark, and four white-capped terns were seen on the rocks as we came here. Instead of Booby Rock, our first stop here was Latei Viti where we anchored over Sunday. Booby Rock is only a small rock with nothing noticeable on it. Boobies and terns drift in at sunset to rest and a couple of young red-footed boobies fly across to Viti.

September 9, 1924.

Went ashore until noon and then left for Vekai Island where we stopped a couple of hours, finding a half-dozen noddy terns getting ready to nest. A wandering tattler flew around the islet which is 200 yards long with a few stunted trees on it but no land birds. It has a very rough coral top and walking is dangerous. At four o'clock we resumed our journey in a calm sea, with the engine going, to Tuvutha Island ten miles south where we anchored close to the reef.

September 10 and 12

Naiaua

We went ashore on the north side and walked around to the village where we found a trail into the interior, and going on to the top of the island we found cultivated ground and quite a lot of coconuts. The interior of this island looks like a crater, but there are coral out-

Vanua Vatu, Fiji Islands.

croppings all over. There are a lot of pandanus trees in one section.

We saw three pigeons and two doves, but there were no flycatchers, broad-

in a patch of twenty acres on the top of this island we found the bills, honey suckers nor shrikes. Warblers, yellow-eyes, kingfishers yellow-eyes nesting. I saw swallows six or seven nests in the hollow and swifts were present (?) but no paroquets were seen. A flock of ten or twelve, most of them cleaned by birds, probably. One nest with golden plover were on the reef in the morning but in the rain in the afternoon they were up on the hill in black soil in a sweet potato patch. of trees ten or fifteen feet, the inside of the stump being hollow for Herons were seen in from the coast hunting lizards or grass hoppers, probably. Hawks are present on every island. Hicks found a dove's nest fresh eggs, two fresh eggs, three incubated eggs, one incubated egg with near the shore ten feet up in a small tree. In it a fresh egg could be a young bird, and two lots of three young each could indicate that there seen from the ground.

is the usual number of eggs laid by each bird. A honey sucker was discovered on a nest only September 10 and 11 Tuvutha blue-eye, that of

Went ashore at the village and climbed the steep hill into the bush. The female sat alone while I stood alongside, and fluttered about interior where we found cultivated patches of ground, and cocoanut groves in hollows which appear to be old craters. There is coral everywhere. Ground doves are not rare in heavy cover and I saw two nests near while I was watching and was added to our collection. Yellow-eyes seemingly better built than those of doves and pigeons but both ten feet above vicinity of nest when disturbed. Black pigeons are the only ones up in small trees. A few red-breasted paroquets were seen feeding in a forest tree, but apparently not in cocoanut trees. No fly catchers nor fantails and broadbills are fairly common, while warblers, shrikes and shrikes, and only one gray fantail, was seen although a lot of country was visited. Three pigeon and three doves were all heard calling at once but only for a moment. Swifts are common. The ground is all cultivated sometimes. Barking dove is most common, but the common dove is heard wherever possible, and we find stones picked up in some places to allow everywhere. Swallows were seen on the coast.

September 13 Washing is done by one woman, in

water in the rocks in the forest. Floors are covered with coarsely saw- We went ashore at Vanua Vatu and found a nice village on the beach to water and the straight street in the village is swept clean, with plants and the interior of the island cultivated in patches all over with patches of forest trees in the rockiest places.

Vanua Vatu, Fiji Islands.

September 13

In a patch of twenty acres on the top of this island we found the yellow-eyes nesting. I came across six or seven nests in the hollow tops or limbs, most of them cleaned by birds, probably. One nest with three young was in a stump only five feet up, but most were in the tops of trees ten or fifteen feet, the inside of the stump being hollow for twenty to thirty inches down and lined with a few leaves or twigs. One fresh egg, two fresh eggs, three incubated eggs, one incubated egg with a young bird, and two lots of three young each would indicate that three is the usual number of eggs laid by each bird. A honey sucker was discovered on a nest only a few yards from the nest of a yellow-eye, that of the honey sucker being only thirty inches or so off the ground in a small shrub. The female sat close while I stood alongside, and fluttered about when flushed, just as doves and other birds do. She flew close to me and feigned a broken leg, etc., repeatedly. The male came over near the nest while I was watching and was added to our collection. Yellow-eyes leave vicinity of nest when disturbed. Black pigeons are the only ones seen and others are scarce, if even present. Both kinds of doves, gray fantails and broadbills are fairly common, while warblers, shrikes and paroquets are absent. Hicks got a cuckoo and we see them on many islands, but only for a moment. Swifts are common. The ground is all cultivated wherever possible, and we find stones picked up in some places to allow cultivation. In one spot the soil was heaped up among coral rocks for one plant, the sweet potato, to grow. Washing is done by one woman, in water in the rocks in the forest. Floors are covered with coarsely woven mats and the straight street in the village is swept clean, with plants and breadfruit trees lining it on either side.

September 14. Sunday.

We left for Thithia as anchors drag on the reef here and have to be replaced. There was a heavy east wind blowing as we left at 10 o'clock. Arriving at 3 P. M. we anchored on the north side.

September 15

Went ashore and after seeing the chief, went over the top of the island and down on the southeast side, finding few birds but getting a set of incubated yellow-eye eggs from a pandanus stump on the hillside center of the island. We scared a duck from a rivulet in the hills but failed to find her in the brush. There are no warblers, shrikes, parquets, nor sooty flycatchers. Small hawks are here and a magpie (?). On a plantation I saw fifty or so minahs which were introduced from India. I saw none of these except near the plantation buildings which were being taken care of by an East Indian family, the ~~rest of the~~ laborers being absent on another plantation some miles away. Gray fantails and broadbills are frequent in the brush and honey suckers are common. The wind was blowing and it was raining most of the day and birds were scarce. A couple of large hawks were seen and Bergii terns flew over the reef. The interior of the island is grassy and a few pandanus and ironwood trees are scattered along. Forest in patches and cocoanuts cover the shoreline and extend up into cañons for a mile or two.

September 16

Went eastward to the plantation of Mr. Bragg (?) or Crabb and met him. Minahs and crows were introduced to combat pests. The minahs were taken to the east coast but worked around to the west and soon protected that side. Crows move around the island on plantations of English-

men, but are not seen in the natives' places.

September 17

We left Thithia at 2 A. M. and reached Mango at daylight, going ashore at seven and meeting the owner, Mr. James Barron who has practically the whole island planted to cocoanuts. It was first planted, years ago, to cotton; then sugar, but it now produces five-hundred tons of copra yearly. Seven-hundred cattle and a lot of horses range the hills; also flocks of turkeys which are bothered by hawks. We killed six hawks today and saw others. There was a flock of twenty ducks in a pond, undisturbed by the owner. I shot only three although I had a chance to kill more. I secured three rail near the pond; also six swallows of a number which lit on a fence by this pond. I found a broadbill's nest in open plantation fifty yards from the forest.

We left at three o'clock for Manathia Island where we arrived at seven and when we went ashore we were met by the manager who refused us permission to shoot on the island. We explored the island, however, and found that there are no fantails nor paroquets, but there are broadbills, kingfishers, swifts, swallows, hawks, yellow-eyes, black pigeons, and honey eaters. We saw two doves and found swallows nesting along the shore in small caves—one nest to a cave, eggs fresh, and two nests incomplete. The nests are of mud lined with feathers and each with two or three eggs.

September 20

At daylight, we left for Vauva, Malak Island, anchoring at the northwest point where we went ashore and found but few birds. Hicks got a yellow dove, but Warren and I did not hear a dove of either

Mango Island, Fiji Islands.

September 17, 1924.

I found a nest of yellow-eyes in a gatepost but could not get the eggs as the wood was hard. I saw a cuckoo and heard three species of pigeons and both kinds of doves. Fantails and broadbills are frequent, as well as kingfishers and swifts.

September 18

We got three hawks and one of them had been eating eggs--probably those of the turkeys. Mr. Barron presented us with a turkey as well as a couple of small pigs, and came aboard to see us work in the evening. There are about five-hundred tons of copra exported from the island yearly.

September 19

We left at three o'clock for Kanathea Island where we arrived at seven and when we went ashore we were met by the manager who refused us permission to shoot on the island. We explored the island, however, and found that there are no fantails nor paroquets, but there are broadbills, kingfishers, swifts, swallows, hawks, yellow-eyes, black pigeons, and honey suckers. We saw two doves and found swallows nesting along the shore in small caves--one nest to a cave, eggs fresh, and two nests incomplete. The nests are of mud lined with feathers and each with two or three eggs.

September 20

At daylight, we left for Vanua, Mbalavu Island, anchoring at the northwest point where we went ashore and found but few birds. Hicks got a yellow dove, but Correia and I did not hear a dove of either

species. Small hawks occur and I got a pair. Gray fantails, yellow-eyes, broadbills, swifts and honey suckers are seen. Rough, rocky ridges and coral rocks form this end and Ngillangilla Island has but few trees, the rocks being bare of soil. The nest of a broadbill was found over the water, but there were no eggs in it.

September 22

We shifted over to Avea Island yesterday (Sunday) and went ashore today, finding three pigeons, a dove, gray fantails, broadbills, swifts, small hawks, and honey suckers. A nest was being built by broadbills five feet over the sea and in a cove. I pulled the nest over to look at it, with the water up to my knees. A family of broadbills was seen with the young flying; also gray fantails.

September 23

We moved across a mile or two to Vanua Mbalavu Island and went up to the top of the highest peak, finding ground doves calling commonly, and getting four. Wild chickens were heard and a couple of hens were taken. A bulky nest was being built near the top of the island, by gray fantails. The female came with some fine material and tucked it in the nest and pushed it down with her body. The male(?) came along with her and stood near by. I did not hear any doves, but Correia got two yellow ones, from a fruiting tree. Small hawks were seen and one large hawk. No warblers, nor paroquets were noted here. There are heavy forests in places, but natives clear some of it yearly--the part suitable for raising food. Most of the forest is on the higher parts and the south part of the island is largely grassy.

September 24

September 24 Lomaloma.

September 25, 1930.

We shifted down to Lomaloma this morning and upon going ashore, found the storekeeper, his wife, and sister to be the only white persons present although there are perhaps a few settlers in other parts of the island. Warblers are heard about the village, but none are seen nor heard away from there, although we passed through other villages. I shot a small hawk in its nest sixty feet up in a large tree near a village. The nest was on a small limb and I could not get to it, but the bird had not yet laid her eggs, although her calling from the nest was what attracted me to it. A barn owl flew out of a tree when I shot the hawk. This tree was in a cocoanut grove a hundred yards from the beach. Correia saw several small green herons near mangroves, and got a couple. A few swifts fly about and rail are heard in the moist ground. A pair of swallows have a nest under the veranda and to reach it have to enter through the open windows. They reared a brood last year. Only a few yellow-eyes are seen but the kingfishers and honey suckers are common. Gray fantails and broadbills are also common in suitable places, but warblers and paroquets are absent. Wild chickens are common but are hard to get a good look at. There was a pair of hawks about of which I got one by calling. Swifts were common. Kingfishers had started to dig a hole for a nest in a stump less than two feet from the ground, and another nest, nearly completed, was seen in a rotten stump, eight feet up, near the top of the island. The island is well planted to coconuts and more suitable ground is gradually being cleared. One hundred and fifty to two-hundred tons of copra are being produced yearly.

Munia Island, Fiji Islands.

September 25, 1924.

We left Lomaloma this morning and anchored here at 7:50 in the morning, going ashore and meeting Mr. Steinmetz on the beach where he had walked to meet us. He is the owner of the island and gave us permission to collect. Both doves are common as is too, the black pigeon, but the others come here only occasionally from other islands when certain fruits are ripe. A couple of male black pigeons are tame at the house of Mr. Steinmetz. The older of the two birds lit on my finger, took a piece of manioc from my hand and ate some pudding from my spoon, being perfectly fearless and letting me stroke its back and lift it up without showing any fear. It flies out around the house and back inside at will. The other staid in the cage although the door was open. A pair of swallows have a nest under the veranda and to reach it have to enter through the open windows. They reared a brood last year. Only a few yellow-eyes are seen but the kingfishers and honey suckers are common. Gray fantails and broadbills are also common in suitable places, but warblers and paroquets are absent. Wild chickens are common but are hard to get a good look at. There was a pair of hawks about of which I got one by calling. Swifts were common. Kingfishers had started to dig a hole for a nest in a stump less than two feet from the ground, and another nest, nearly completed, was seen in a rotten stump, eight feet up, near the top of the island. The island is well planted to cocoanut and more suitable ground is gradually being cleared. One hundred and fifty to two-hundred tons of copra are being produced yearly.

Thikombiai lau Island, Fiji Islands.

September 26, 1924.

We arrived from Munia at eight o'clock and went ashore, going around the shore to the village where we saw the chief, and Bryan, coming around the other way, arrived about the same time, so the chief guided us to a cave near the top of the island where fifty or so skeletons were laying about the floor. I counted about forty skulls and Bryan dug out a few more, taking a series of the best ones. I hunted about the top as Correia did not get up. I found three pigeons, and three doves, the ground dove being seen and heard. A few yellow-eyes, honey suckers, and swallows were seen. Kingfishers and swifts are common. On the reef were a lot of Bergi terns, a single white-capped tern, a pair of lesser frigates hung over them and a couple of herons stood with them on the reef. Hicks did not show up at dark and we still thought that he might be lost as there are pockets everywhere in the rough country. We heard shots from him at three o'clock. He showed up at ten that night with several natives. He had become confused and came out on the other side of the island and the natives had brought him around after dark.

Sova Rocks

September 27, 1924.

We came here this morning from Thikombiai lau Island. Bryan says that it is the home of a certain kind of palm, found nowhere else than on two of the islets. This palm may be on the other islet but we did not see any. Bryan figures that three-hundred trees or so comprise the total. One hundred and fifty or so plotus boobies are roosting on the islet with the most palms, but they go to sea when we approach. A

A flock of five turnstones and a pair of plovers were seen. A few yellow-eyes, kingfishers, broadbills, honey suckers, a swift, with an owl that flew out with a flock of bats when the anchor was let go, comprises the birds.

September 28, 1924. Afternoon. The day started with

Came across to Kimbombo Islets and anchored.

September 29

We went ashore on the largest island and found very rough going. The island does not cover over ten acres. Yellow-eyes are common and doves, black and Samoa pigeons, kingfishers, and a few broadbills are present. Six or so swifts were seen. On the middle island, which is volcanic the going is good. Only a few swifts were flying about. We got away at 9 o'clock for Wailangilala Island and arrived at 1 P. M., going ashore and finding a white lighthouse keeper and an Indian servant, both with families. Noddy terns are nesting in cocoanut trees about the buildings--several nests in a tree.

Wailangilala Island, Fiji Islands.

September 29

We saw quite a few lesser noddies before five o'clock, then they came drifting in. Quite a few live on the island. One was seen on a nest in a thick tree forty feet up. Lesser frigates hang about the island and rob the noddy terns as they near the island, but not over a half-dozen frigates seem to be present at one time. Golden plovers, wandering tattlers, and several ruddy turnstones are along the beaches.

One flock of five turnstones and a couple of singles were seen. They are wild and we shot only two. A yellow-eye had a nest in a fifty-foot cocoanut stump which she entered from the top, but we could not get at it. A half-dozen white-capped terns rested on the end of a sandbar and a single sooty tern flew over us as we rowed ashore. There was a heavy rain in the morning but it cleared in the afternoon, but started with heavy squalls at dark and blew hard all night. One anchor dragged but we dropped the other and both held.

September 30

We went across to Naitamba Island and looked it over, finding a fine home with lawn-like yard all about the house. The owner and his wife gave us tea at five o'clock when we returned from hunting. Paroquets were seen here-- a couple or so, and several swallows flew along one ridge hunting insects. Gray fantails were common; also saw three pigeons and two doves. Broadbills were in the forest and one hawk, of the three seen, was taken. The hawks bother turkeys, said the owner, Mr. Henning. We tied up with a kedge near the reef.

October 1

We went across to Yathata Island where we landed and went to the top, finding old house sites of stone, right on the top. There was evidently quite a settlement there in the past, and seemingly in an easily protected place. Sooty flycatchers appear here again; and a small number of shrike. Three pigeons and two doves were heard in the forest and a yellow-eye nest was found in the usual place--a pandanus stub, eight feet up, the nest built of twigs and a few feathers for lining. No gray fantails were noted, though paroquets were present.

Broadbills were taken but they are not common. We ran over to Nukutolo Islets to anchor for the night and reach there at dark. The anchor dragged off before the watch noticed it and at two o'clock, when the anchor was aboard, we sailed for Vatua vara Island which is ten miles to windward.

October 2

We reached Vatua vara Island at eight o'clock, went ashore and I followed a trail across the island, finding a ground dove. Several yellow-bellies, different from those farther south were discovered in the interior but were not plentiful and were not singing except in one case, so we have to hunt carefully for each one. Shrikes were more common here, two being taken on the beach and others in the forest. Sooty flycatchers were not rare although Correia failed to find any. I shot only a couple or so but could have taken a number. Pigeons were common, Samoan more so than the barking. Gray fantails were rare, only three or so being noted. As Nukuyolo Islets showed no seabirds about at dark and were not suitable for many landbirds, we left at dark for Suva.

Oct 6, 1924

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THE FIJI TIMES AND HERALD.

Yacht France

TOUR IN LAU GROUP.

FIJI'S BIRD LIFE.

The motor schooner France arrived on October 3 from the Lau group, where she has been since the latter part of July. Beginning at Ougea Ndriri in the south, the scientific party visited practically all of the islands of the group as far north as Wallagilala Island.

Mr. Beek said the most interesting feature of the bird life was the impossibility of telling in advance what the next island would have in the line of birds. The common bird on one island might be absent from the neighboring islands, twenty miles or less away, and then appear again on other islands further along in the group. The most striking example of this phase of the study was noticed at Marambo Island, which lies only six miles from Kambara Island. The Wattled Honeyeater, which is a common bird of the Tongan and Samoan Islands, as well as many of the Fijian Islands, occurs on Marambo but was not seen on Kambara, where conditions seemed as favourable for it as on other islands of the Lau group where it does occur. Another example of the variation in bird life on adjoining islands was noted on Wangava Island where a common "Thickhead" lives, though on Kambara only three miles away none were discovered.

NESTING HABITS.

Variability in nesting habits was exhibited by the Noddy Terns encountered on the trip. At Vanna Masi and Latei Viti they nested on the ground and bare rocks with the boobies, while on Wallagilala Island they built bulky nests in the coconut trees round about the lighthouse and keepers cottage.

THE ROBBER HAWKS.

On productive Mango Island, where herds of cattle and flocks of turkeys range beneath the extensive coconut groves, which reach from seashore to mountain top, the large hawks have taken to robbing turkey nests instead of hunting rats as they should.

The party was received everywhere with the utmost courtesy by white residents and natives alike. The owners and managers of private estates, so far as they were able, opened these to the collectors and rendered every assistance possible. The natives assisted materially in pointing out trails and then keeping out of the way, thus making the survey of the group much more thorough than it might otherwise have been.

COLLECTING.

Mr. Bryan expressed great enthusiasm over the plant and insect collecting. Concerning the islands he reports as follows: "The Lau Group is made up of two types of islands or mixtures of the two. They are so entirely different from each other that one can distinguish them as far as they can be seen. The islands of upraised coral limestone are irregular in outline, with the highland generally toward the edge and the center a basin. They are covered with a dense growth of characteristic vegetation: trees up to thirty or forty feet high, the same forty or fifty species throughout the group, and an under growth of wagawa (Piper), rokete (bird's eye pepper), ferns, herbs and numbers of vines. The surface of the ground is unbelievably rough; we called it the "badland formation." It is eroded into deep potholes and little ridges so jagged and sharp that the points penetrate the skin when one rests his weight on hands or knees. When these rocks and depressions become covered with vines and herbs, as they generally are, progress becomes very difficult, even dangerous, and as for

shoes and clothing: should an attempt ever be made to colonize any of the limestone islands a good shoemaker and a tailor should be included in the first shipment. The beaches of these islands are predominately rocky, with an undercut ledge. Ongea, Wangava, Aiwa, etc., are entirely of this type.

In contrast to this there are the islands of volcanic material, smooth in outline, easy of access, and covered with grass, ferns, scrub (stunted, bush-like trees), vandra (*Pandanus*) and *Casuarina* trees (cau or nokonoko). The beach is generally sandy, with a fringe of common, widely distributed littoral trees, such as dilo, vetau, vutu, evu, evuevu, nawanawa, tatqia, vedu, drala, tavola and groves of coconut palms. Mothe and Komo are typical examples.

Most of the larger islands, however, are a mixture of limestone and volcanic material. This typically takes the form of a ring of limestone hills enclosing a basin of volcanic material. Vanua Mbalavu is a chain of volcanic hills tapering off into limestone at both ends. On some of the islands, such as Katafanga, the transition between the two is as sharp as if cut by a knife.

There is a sameness about the plant and insect life, which is quite inferior to that of the larger and higher islands of Fiji, but even at that collecting was good. There is an interesting rapid and progressive increase in the number of species to be found, from the small bare rocks, such as Latei viti and Bacon Island, with two or three kinds of plants and a dozen species of insects to the luxuriant forests of Kambara, Mango, etc., alive with gorgeous butterflies, moths, beetles, lively leafhoppers, flies, wasps and spiders. Very few of the islands were badly infested with mosquitoes at this season.

BIRD ENEMIES.

Except for the birds and domestic creatures, the largest animals consisted of rats, several kinds of lizards, including the large green vokai, snakes, and crabs. Of the latter there were several land forms, the large red-brown coconut crab, less ferocious looking smaller species, and hermit crabs of various sizes.

CONTENTED PEOPLE.

The people of the islands, a mixture of Fijians and Tongans, appeared industrious, contented and healthy. They cultivated their little gardens of manioc, yams, taro, bananas; caught fish and sell fish; beat out masi fiber into attractive bark cloth; wove mats; did a little carving and canoe making; and harvested sufficient copra from the extensive groves at hand to satisfy their humble wants.

The coconut palms appeared fairly free from pests. The effect of the scissor-like jaws of the mimimata (*Phasmid* stick insect) was everywhere to be seen, and in places the lower leaves were browned by the burrows of the beetle miner, but these appear to do but little damage to the crop. No serious diseases of bananas or taro were noticed other than the usual rust spotting. On some islands guava and other weeds such as the air plant (*Bryophyllum*) and the purple flowered verbena were widespread, while other islands were quite free."

GOOD SEA BOAT.

Captain Stenbeck reports fairly typical Fijian weather throughout the cruise: Short spells of trade wind, with a blow in between accompanied with rain. The "France" proved herself very fit for the work and covered a lot of ground. But it is due, he says, to the scientific gentlemen aboard that all this ground has been covered in such a short time, as they are persistent workers and have been at it in all sorts of weather, proving that the work must be to them most interesting.

Despite imperfect charts and occasional heavy weather, Captain Stenbeck has brought the schooner back without mishap, and in better condition than that in which she set out.

Ovalau, Fiji Islands,

October 14, 1924.

We went ashore, over the hill, and hunted high up on the inside of the island. I found a nest of sooty flycatcher, eight feet up, in a small tree in the bottom of a cañon. There were two eggs in which incubation had begun. In a nest in a similar location one young bird had just hatched. Twenty yards from this latter nest was a golden dove on a nest twenty feet up in a small tree. Egg shell was seen in the bottom of the cañon and, looking up, I saw the nest. The larger part of the the eggs shell was dropped over the side of the nest instead of being carried off. A nest of yellow-eye was seen in a dead stump fifteen feet up, and a tree pushed over broke three badly incubated eggs. These were lightly marked on the large end and were not nearly as heavy as eggs taken in Lau Islands.

A single brown-breasted thrush was seen and secured as were a couple of yellow-bellies. A male yellow-belly seen in the same place was not bagged. These were the only three seen. White-eyes were seen and Correia shot some but could not find them. A single ground dove was taken and another heard. Golden doves were common, calling with a single bark. Barking and Chile pigeons, and a couple of kingfishers were heard. Broadbills were not uncommon, and I secured one of two hawks seen. Gray fantails are rare and swifts are common in spots but fly too erratically in the evening to shoot.

October 15

We went up again into the same country but found no more thrushes, and saw but one family of yellow-bellies, getting a single young bird. A couple of white-eyes were seen but not secured in the highlands; the

common kind are lower down and I shot one and heard several. Fine view

October 15

I left Correia here for a week to try for the rare birds while I visit two near-by islands. I left port at noon for Wakayai Island ten miles off.

October 17

We went ashore and to the farther end of the island. Deer are plentiful and I saw several, but none right for a shot with the 20-gauge. A couple of hawks and a few yellow-eyes were seen. Common doves are abundants, but there are no golden doves and ground doves are heard and one was seen. Black pigeons are reported, and barking pigeons are present at times according to Mr. Gibbs, the manager. Sooty flycatchers and broadbills are the most common birds, although honey suckers are quite common. White-eyes are not rare. Yellow doves are scarce. I secured a nice nest of the broadbill, from a fork of a small limb twenty feet up in a forest tree. There were two fresh eggs in this nest. I saw another nest in a breadfruit tree near the copra shed in the open flat.

October 18

Bryan left this morning in the cutter to catch the steamer for Honolulu. I went ashore and secured three ground doves. I saw and heard others; also saw four black pigeons together, of which I shot one. This island belongs to Mr. Delmoncey(?) and will produce over two-hundred tons of copra this year. It will produce more later, when properly taken care of. Wild pigs and goats, as well as cattle and deer are present in the woods. On the tops of peaks are the remains of stone forts, and a long stone fence runs down from one peak, along the bottom

Malakal Island, Fiji Islands.

of the cañon, marking an old boundary, perhaps. There is a fine view of several islands from the top of this one. Wild lemon trees abound in the forest, but I saw very few oranges. Neither warblers, nor fantails are seen, nor swifts although these abound on most islands. Two or three swallows were noted and paroquets are not rare.

Coconut trees are strung along the beach and up into the valley while Karibar back in depressions on the hillside, thick groves of grass trees contrast sharply with the grassy cleared areas. Some three-hundred patients are living here and, in looking at them from the boat when we rounded shore, we saw no sign of disease although several of the children had bandaged feet where possibly cuts were healing. A sister of mine came down to the beach where we stopped and directed us around to the doctor's house, which is perched on a hill, with a fine view to the south, east and west. Doctor Gilvao readily gave me the desired permission to collect, and showed us a beautiful collection of marine shells from near-by islands. A small herd of white Malakal cattle surprised us with their brilliant colors. Mr. Gilvao had a pleasant home nearby and his gentleman offered room, and horses for the journey away. It was very convenient, however, to start on foot through the forests, so I accepted tea, fresh eggs, and milk from Dr. Gilvao and returned to the vessel. Several herons were along shore on a rocky point, and a flock of yellow-billed terns rested on a reef. The island is more sparsely forested than others and shows little of the Karibar. Only two families are in charge, and one of these is the very doctor of the island. Monkey noises are heard and three hounds were seen about the manager's house. We saw eagles, and heard croakings and whistles.

Makongi Island, Fiji Islands.

October 19, 1924.

We arrived here at noon from Wakaya Island and found clean looking houses, nicely painted white with red roofs, and nestled in a beautiful little bay with Wakaya Island to the north and a pear-shaped isle on the west. Cocoanut trees are strung along the beach and up into the valley while farther back in depressions on the hillside, thick groves of green trees contrast sharply with the grassy cleared areas. Some three-hundred patients are living here and, in looking at them from the boat when we rowed ashore, we saw no sign of disease although several of the children had bandaged feet where possibly cuts were healing. A sister of mercy came down to the beach where we stopped and directed us around to the doctor's house, which is perched on a hill, with a fine view to the south, east and west. Doctor Ogilvae readily gave the desired permission to collect, and showed us a beautiful collection of marine shells from near-by islands. A small boxful of brilliant beetles surprised me with their metallic colors. Mr. Mc Nair had a pleasant home near-by and both gentlemen offered room, and horses to ride during my stay. It was more convenient, however, to work on foot through the forests, so I accepted tea, fresh eggs, and milk from Mr. Mc Nair and returned to the vessel. Several herons were along shore on a rocky point, and a flock of yellow-billed terns rested on a reef. The island is more heavily wooded than many others and shows little grassy area. Only two families are in charge, and one of these is the only doctor on the island. Common doves are heard and three hawks were seen about the manager's house. We saw swallows, and heard broadbills and white-eyes.

October 20, 1924.

I went ashore and found the going good as the island is volcanic. A pair of quail ran across the trail and I got a female. Three hawks were secured. They are very troublesome to the turkeys, according to the manager. Chickens were crowing about the forest and I shot a half-dozen, the cocks all being largely of one coloration, and some of them showing a little white in the tail. I found a sooty flycatcher nest in the top of a small tree in the forest, and a nest of yellow-eye in the usual location--the limb of a pandanus tree. Kingfishers, white-eyes, and honey suckers are common.

October 21, 1924.

I secured a wood swallow and saw three or four others in the evening as they circled about over the hillside. I also got a small barred cuckoo sitting on a limb in the forest. Just before getting the cuckoo, I secured a set of three eggs from a yellow-eyes nest in a stump only twenty inches high, and the eggs were not more than a foot above the ground. One egg was of a different ground color and differently spotted, and when I was blowing it, I wondered if the cuckoo was a parasitic species and if the egg could be that of a cuckoo. The Mother Superior at the village told me in the evening at the village that a heron had begun to capture their guinea pigs which were running loose about the shore and were using some old ruins for shelter. One large guinea pig gave the heron much trouble before it was dispatched. The rail are also detrimental, as they go into the chicken ^{house} and eat the eggs. Mr. Mc Nair also said that they often broke his hen eggs. The same story was heard on the other islands. A swallow had a nest under the

eaves of the house and I saw one resting on a window sill at the leper settlement. I saw no noticeable cases of leprosy, except that of one man who had lost one leg and was walking on a wooden one. The Chinese had a nice garden and I saw a lot of tomatoes and other vegetables in the enclosure. There are nice lawns about the houses and they are better kept about the settlement than about other villages on the islands. Three sisters requested passage to Levuku and I agreed to send a boat at six o'clock in the morning for them. An American leper here would not go to Pango, but went into the forest when a ship came for him, because this is a better place to live.

Levuku, Ovalau Island, Fiji.

October 22, 1924.

I arrived and found that Correia was still in the hills in a native village.

October 23

I went up to and over to the central part of the island and after noon saw a thrush which lit near me as I called and sat on the ground for some minutes. I am not sure whether it was another that I heard some rods away, but it was impossible to see in the forest. I saw no yellow-bellies. I secured a hatching egg of a barking pigeon from a nest on a leaning tree in the bottom of a cañon near the top of the island. This nest consisted of a few small twigs on top of a tree trunk sixteen feet from the roots and only ten feet above the sloping rock in the bottom of the gulch. The bird flew off the nest and lit near by. It later flew away and came back, remaining above me until I left. Correia came back and reported no luck with the thrushes and

yellow-bellies during his week in the hills. He got one of the white-eyes that we wanted and several of the common ones. He found a few swifts' nests a short distance above the town and left to get photos.

October 24

I rained all day and nothing was done except repair the engine which necessitated the taking the exhaust pipe down to the shop, and replacing it. In the afternoon Correia went out and got several of the swifts' nests with the eggs. Fantails, sooty flycatchers, and

October 25

We sailed for Kandavu Island and in the evening saw several small shearwaters; also a couple of larger ones which might have been cuneatus, or some larger species. All were bound south, two or three miles offshore, from the light east of Suva. The small birds were apparently gray-backed, although none came very close to the ship.

October 26

We anchored at north island in the reef north of Kandavu, and while sailing south and into anchorage, we did not see a single bird. The weather was good yesterday and today.

October 27

We went ashore on Vanua Kula Island and found a variety of birds for such a small island--fifty acres or so. I found a yellow-belly's nest close to the ground and secured five birds in a half day. A few gray fantails and a sooty flycatcher were seen. Correia saw a couple of ground doves and a hawk, but got only a couple of small birds.

I secured seven white-eyes which are common, shooting them as they were eating a ripe papaya at which the yellow-eyes had also been busy. Hicks shot four black pigeons and a cuckoo, and I got another cuckoo. Both cuckoos were barred. Correia saw three owls yesterday when ashore but none today. After lunch we motored across to Ndravuni Island where I went ashore, leaving Correia to skin some of the birds. I got an owl, and called a hawk to me, but allowed him to get too far away before shooting. Paroquets are common about the village and are likely nesting in the big cocoanut trees. Fantails, sooty flycatchers, and ground doves are not here as there is very little cover for them, but I saw three swifts and shot one of them. Several lesser frigates sailed over the island slowly to windward in the evening, but they do not stop here. Both of these islands are volcanic and traveling is easy in comparison with the Lau Islands.

October 28

We raised anchor in the morning and went around to Yakuve Island where we found a few men from Ndravuni Island working at clearing ground and making copra. Few paroquets are seen, and only a single fantail, although a couple of others were heard. Broadbills and white-eyes are common, the latter eating papayas on the tree, and some ripe ones on the ground. Honey suckers are also common. Yellow-eyes and kingfishers are few.

Yakuve Lailai Island, Fiji Islands.

October 28, 1924.

I came across to this island at 11 o'clock from Yakuve and staid three hours. I saw a pair of swallows nesting, and got a fantail although there are probably not many of the latter here. Three hawks flew along the ridge but the one I shot at was too far away. Black pigeons were calling here and at the last island. Broadbills and honey suckers were common. On the north end of Yakuve Island, on top of the ridge, is the site of an old village with rock foundations of houses still in evidence.

Vuro Island

October 29, 1924

Went ashore there for an hour and got a small hawk and a fantail. The island has a few cocoanuts and has been burned over for planting, although it has rocks close to the surface. White-eyes and honey suckers are common. A yellow-eye and a yellow dove were heard. Two or three swifts were flying about. At 8 A. M. we left for Ono Island a couple of miles away. There were a dozen or more frigates high in the air as we went ashore this morning.

Ono Island

October 29

We went ashore at 8 o'clock and found a small village among cocoanut trees, and a trail over the hills to other villages. I followed an old man who was supposed to show me where shearwaters nest but he took me a couple of miles into the hills, showed me a couple of possible shearwater burrows in the side of the trail, then worked along until he reached his taro patch under a high hill. I left him and went

over the top of the ridge, down through a steep cañon, and up another cañon where doves and yellow-bellies were heard and seen. Fantails, white-eyes and barking pigeons were also heard and seen. A small hawk sailed over one cañon and a pair of large hawks sailed along the top of the ridge. On top of one peak were evidences of old fortifications. The central ridge is very steep with many spurs in different directions. The north side of the ridges are barren, with ferns, as fires have gone over most of it, but on the south side forests appear on the top at least. The cañons have some old forests in them, usually near the top. The houses are covered with grass from top to bottom, thus differing from Lau group. The last island with a village had a lot of plants growing from which to make mats--more than were seen anywhere else, and a lot of mats were seen in the houses. The prices were higher than in Lau, however, so I did not purchase. Rain started to fall at 2 P. M. while we were miles from the vessel but we were all aboard at 5 P. M. There is wind and rain as I write this at bedtime.

November 1

October 30

Rain fell all the morning and we remained on board as it is necessary to go a couple of miles before finding birds. There was a heavy wind from the northeast at dark and squalls tonight. Seventy frigates were hanging over the bay at dark looking for fish (?). They drifted back and forth, some high and one or two low down. I found a new fantail, a brown-capped, small bird, and a thrush. The latter is common. A large nest made largely of green moss and lined with dry leaves and grass, with the entrance on the side was perhaps a thrush's nest as a thrush sat near it. This nest was twenty feet up in the top of a palm tree near the top of the ridge. Yellow-breasted

Ono Island, Fiji Islands.

October 31, 1924.

I went ashore and up to the top of the ridge, finally, after following an old man for hours searching for shearwater nests. None were found although several natives say they are here. I saw a pair of parrots on top of the ridge, by a stump which they were preparing to use for a nest as some twigs with green leaves were in the hole, about fifteen feet up from the ground. One flew on way, calling once, and the other flew in a different direction. A couple of ground doves were seen near the top of the ridge but they are not common. Yellow-bellies and green doves, and a few yellow doves were seen and heard. Judging from the number heard, broadbills are not as common as elsewhere. White-eyes are frequent, paroquets common, and a few sooty flycatchers were noted. A couple of big hawks, the same of swallows, and a dozen or more swifts flew along the ridge in the evening. Yellow-eyes are frequent.

November 4
November 1

I went across to Kasaleka Bay to find shearwaters but discovered that they leave here in August, coming ashore in March to nest. Whether one or more species nest here, I cannot tell as the natives say there are some black and some white. Doves are common on the trail up to the top of Mt. Challenger, and I got a brown-breasted cuckoo singing in a tree well up on the mountain. I saw two or three red-breasts, found a new fantail, a brown-capped, small bird, and a thrush. The latter is common. A large nest made largely of green moss and lined with dry leaves and grass, with the entrance on the side was perhaps a thrush's nest as a thrush lit near it. This nest was twenty feet up in the top of a palm tree near the top of the ridge. Yellow-breasted

White-eye is common in the hills. Rail are common about the village and a small heron was taken on the beach as I came to the boat in the evening. Birds are plentiful. Parrots and paroquets are seen in the forest as well as in the village. Yellow doves, green doves, and parrots are heard from the vessel. I secured one large sooty flycatcher and the small ones are not uncommon. The cuckoo had but two notes in his call, but these were repeated every half minute or so. Taro is mostly grown in the water, in terraces, but some is planted on the steep hillsides also. Two black shearwaters were seen during the day but I am not sure of the species. I hardly think they were Sooty.

November 3

Bandava Islands

I went again to the top of the ridge and found a black pigeon's nest only two feet from the ground. This nest, from which the male bird flew, was near the top of the mountain and was well built of small twigs. Another cuckoo was taken in the same place from which I secured the other one.

November 4

I went up another trail in the afternoon and found thrushes common.

November 5

I went up a trail toward Korolevu and found a red-breast's nest of green moss stuck on top of a small limb fifteen feet from the ground. There were two fresh eggs in it. Correia found a warbler's nest with one incubated egg. I went ashore, where the chief told me that two birds nested on the point of land within a half mile of his village. So I went to the place and I saw cavities under the rocks and boulders.

November 6

We pulled out to sea at noon to see if there are any shearwaters about, but saw none in the first five miles, during which time this was

written. Birds are common at low levels here, a thrush being seen at not more than fifty feet elevation, and a ground dove heard at one hundred feet. Parrots and pigeons are about the villages. Shrikes seem to stay around villages and to light over the houses. A yellow dove lit in a breadfruit tree over the house.

November 7

There is a light wind and we are sailing back toward the west end of the island. Two black shearwaters were seen during the day but I am not sure of the species. I hardly think they were *cuneatus*.

Kandavu Islands

Before daylight I went on deck when we were about five miles off Cape Washington, on the east end of Kandavu, and saw frequent shearwaters as they rose above the horizon. As one came close to the stern of the boat I noted that it was a *cuneatus*. After coffee, I got out a small boat and within three hours secured over twenty birds, while Correia got a few more when I had the other boat put out to pick up some birds.

The birds circled about over a mile or two of water and then drifted away out of sight when a heavy squall came up with rain. A school of fish held them in our vicinity. From the flight of the early birds, etc. I judged that they had come from the land at daylight, and when we anchored at ten o'clock I went ashore, where the chief told me that the birds nested on the point of land within a half mile of his village. He took me to the place and I saw cavities under the rocks and boulders where birds might nest, and a little later a boy brought me two live birds just captured, while we were waiting for them. From the organs

of the birds, I think it is a little early, though the birds are coming ashore to prepare their nests. At dusk last evening I saw a single white-chinned petrel working toward the land ten miles away. But today in a flock of over a hundred cuneatus shearwaters not a single other species of tubinares was seen. A single frigate and a couple of sooty terns were the other birds fishing with the shearwaters and I secured all three of them.

November 10

I went ashore and climbed upward to within about five-hundred feet of the top but the going was steep and the birds were the same as noted before, so I did not keep on. A fantail's nest of green moss, with no eggs in it was taken at a height of thirty-five feet. There were two or three swallows about the village and I secured a couple of shrikes, also in trees in the village. There is not much cleared land here and the mountains are well forested. We noted a flock of ducks, evidently lighting on Denham Island.

November 11

We moved around the point of Denham Island and anchored at Mbukelevuira Move, the village we visited yesterday. I went well up on the mountain and found the birds to be the same as those previously noted. Correia came back with a dove's nest containing a fresh egg, and another with a young bird in it, while Hicks brought in a couple of white-eyes' nests with young, and the nest and two fresh eggs of the gray fantail. Nests of fantails vary greatly from hill to valley. The hill nest is of green moss while low down the nest is of dry shreds of grass. The white-eyes' nests differ from blossom of plume grass in some to dark-brown weed stems in others.

November 12

Correia and Hicks went ashore for a couple of hours and came back at 10 o'clock with several warblers and a duck which Hicks secured in the swamp back of the village. As we were leaving Denham I saw a flock of ducks lighting there, so I went over in a small boat and found them on bare rocks at the edge of the island. They were wild and left without my getting a shot. The ducks roost on barren lava rocks at the edge of the island, the swamp being two or three acres back of the village. Evidently a pool of water in another cañon or valley also affords them shelter. We left at ten o'clock for the island west of Bhenga. We heard a cuckoo here, in a cañon, but could not locate him. The cuckoos call for some minutes, then stop for a while and begin again.

November 13

Vatu Leile Island, Fiji Islands.

While coming across from Kandavu yesterday afternoon I saw a few *cuneatus* shearwaters and a single small *aestrelata*, several sooty terns, and two *plotus* boobies, most of these being fifteen miles or so off this island. As we approach it in the evening it appears to be covered with forest and its elevation is not over fifty feet. The wreck of a good sized ship lies on the reef at the eastern end of the island. We went ashore at seven o'clock and found quite a village on the upraised coral island, which is not so rough as many islands in the Lau group. Cocoa-nuts grow along the shore and in little pockets through the island. On the northwest end there are banana and breadfruit trees, as well as kumalas and several small patches of good-looking corn--three or four dozen hills in each. Evidently the natives do not use many papayas since we saw them rotting on the trees. The men were building a house in the afternoon;

some making sennet and pounding cocoanut husks, while others tied the reeds to the walls. There were probably thirty men engaged in the work and, in baskets, was their food all prepared for eating. The Samoa pigeon, red-capped dove, black pigeon, and yellow dove were common. Suva warblers and a couple of white-eyes were seen. There were no honey suckers and only a few swallows, swifts, yellow-eyes, kingfishers and broadbills. When going through the forest I saw a female yellow dove fly from her nest twenty feet up and flutter in a small bush ahead of me. There was one egg in the nest and this was one-third incubated. We left at 5:30 for Suva. I saw a flock of twenty golden plover on the beach--evidently recent arrivals, several yellow-billed terns on the rocks near the village, and a couple of sooty terns at sea outside the reef. We also saw a plotus booby or two at sea.

November 14

While beating up south of Bhenga we saw a few noddy terns fishing and a couple of cuneatus shearwaters.

November 15

We are sailing close along the east side of Taveuni Island this afternoon, bound to some small islands to the northeast--some fifty miles. Some noddy terns, several cuneatus, and a dozen small, white-breasted aestrelata were noted this morning, moving southward, the terns fishing. There is a light wind from the east.

November 20, 21, 22

We are still sailing north but not making over five miles a day headway. On Saturday evening we are going into the bay at the northeast end of Taviuni as the weather is rainy and the wind is light.

Sunday, November 23.

It rained all day and the wind blew from the north so we would have made but little headway had we staid outside.

November 24

There was rain, thunder and lightning last night and it looked dark this morning, but we went ashore on the northeast corner of Taviuni and found birds very scarce. I did not get up more than about three-hundred feet as the mountain was too far away to tackle. Small and large hawks, scattering parrots, few swifts and gray fantails, and occasional broadbills were the birds noted. Two or three pairs of white-eyes and kingfishers were heard. We picked up one firetail finch on the ridge when we were calling fantails. We went aboard at four o'clock and moved across to Ngamea Island, hearing warblers singing as we anchored. There is also a swallow swinging around the ship. One hundred and fifty inches, or thereabouts, is the rainfall yearly for this section and the vegetation shows it. There are no very large trees low down, but plenty higher up. Cocoanuts are growing in suitable places along the coast.

November 25

We left Ngamea and saw both lesser noddies and a few boobies swimming along the reef as we sailed to the eastward. Farther along to the east we saw a few red-foot boobies; also noddies. We went ashore at Napuka Lave and secured a Tahitian chicken and a yellow-eye. With the exception of a large hawk only land birds were

Ngamea Island, Fiji Islands.

November 25, 1924.

We went ashore and found birds plentiful, and quite different from those of Taviuni only a couple of miles from here. Why we saw no warblers nor shrikes there is to be determined later. Both are common here. Ground doves are not uncommon as we have heard several. All three pigeons occur. Correia found a black pigeon's nest eight feet high, but did not take the egg which was fresh; neither did he see the parent. Orange doves are plentiful and I located the nest of one by seeing the bird fly to it and settle down, and then I saw the egg from the point where I stood on the ridge. The nest was twenty-five feet from the ground and the same distance from the hillside which is very steep at that place. The nest contained twice the amount of material used by the other Fijian doves in constructing their nests. Correia heard the calls of yellow doves. Broadbills are not common, and no honey suckers were heard. The sooty flycatcher is common, and parrots are everywhere through the forest, and tame. Swallows were flying into a kitchen and roosting or resting in the village. I looked around but could see no nest, but when I went out three or four birds flew in and out repeatedly. Wild chickens were heard and Hicks shot a couple, but they resembled tame ones.

November 26

We left Ngamea and saw both lesser noddies and a few cuneatus shearwaters along the reef as we sailed to the eastward. Farther along to the east we see a few red-foot boobies; also noddies. We went ashore at Nanuku Levu and secured a Tahitian cuckoo and a yellow-eye. With the exception of a large hawk only land birds were

seen. Perhaps three or four pairs of yellow-eyes were present. On this islet which covers ten acres or so quite a few cocoanuts are planted, and it is the first place in which we have seen cocoanut trees with holes in them to catch water. Four trees by the deserted camp have holes in them that would hold from two to four gallons each and all are practically full. The water that I tasted from two of the holes was good. Mosquitoes were plentiful in one. Trenches circled about the trunk to catch all the water that runs down. The trees with these big holes cut in them seem to bear as well as the others. We went over to Nanuku Leilei and found a couple of noddy terns' nests in an open hollow in the center of the islet. This islet, of three acres or so, has no vegetation on it, the growth having been swept away since the pilot-book matter about it was written. I shot a couple of white-capped terns that flew and lit on the point of the islet, and saw several others. Off the south point of the reef, as we left, lesser noddies were flying north after the day's fishing south of Ngamea Island. I presume their roosting place is thirty miles or so north at islands we shall probably visit tomorrow. At five P. M. a single aestrelata neglecta (?) flew around the vessel and off to seaward. It was blackish on the back and white underneath, with a seemingly blackish collar broken on the breast. At 5:30 a flock of a dozen blackish shearwaters swung southward a half-mile away. Judging by their flight, I think they are dark-bodied, and not cuneatus.

November 27

We arrived at Nukumbasanga Island about and went ashore, finding a few pairs of fairy terns flying around over the island. From the twenty, or less, birds shot I secured three good enough to skin, but

Correia and Hicks did not get any. Clementine's doves, a few Samoa pigeons, and plenty of yellow-eyes were the land birds. There are quite a lot of cocoanuts, and papayas are thick over the island which covers thirty acres or so. Hicks found a yellow-eye's nest in a pandanus stub fifteen feet up but dented all the eggs. Saw the first fairy terns in Fiji. Noddies and lesser noddies were common.

Nukumbalate Island, Fiji Islands,

November 27

I came here at noon from Nukumbasanga, found a hundred or so red-footed boobies, and a few dozen lesser frigates. There were several boobies flying about with a lot of noisy and white-capped terns that young of each. I saw three or four dozen bats hanging in trees and a young booby sitting on top of one tree with bats within a couple of feet. When the wind swung one bat near him regularly, the booby opened his mouth a trifle but did not budge. I saw several old lesser noddy nests, but no new ones. Three or four yellowbills in their winter

plumage were seen in a flock of white-capped terns, sitting on the beach. The first island also had a flock of white-capped terns, on a sandy point. We left anchorage here at 1 P. M. and sailed over to Nukusemanu Island, where I went ashore alone for ten minutes, getting a Tahitian cuckoo, three lesser noddies and a couple of white-caps. Three or four golden plover were in the center of the islet among thick trees, and had difficulty flying out because they had to rise slowly from the ground. They had probably walked in, as the islet is small--not over two or three acres, perhaps twenty feet high with steep sides and at the west end a lot of rocks from the beach piled up by hand. The island seems to be washing away except on the east end where a sand spit extends out a short way. We left at 3:30 and reach the inside of the lagoon at Ngele Levu by dark.

November 28

We went ashore at 8 o'clock and found a village with twenty-five people. There is plenty of cocoanut here. The only land birds seen were Yellow-eyes, Samoa pigeons, and Clementine's dove, all of which are common. I secured a fat, bristle-thighed curlew standing near a pile of drying copra. This was the first seen in Fiji. Correia afterward saw another. The small patches of tobacco and watermelons are doing well in the rough coral interior. It rained in the afternoon, with thunder and squalls.

I went across to Taulalia Island and found a half dozen plotus boobies flying about with a lot of noddy and white-capped terns that were getting ready to nest, but I found no nests. There are low bushes over part of this islet which is of rough coral. A single pigeon and a couple of yellow-eyes were also noted, as well as a couple of yellow-billed terns and a few herons.

November 29

We went over to Vataua Island and ashore, finding a few honey suckers, yellow-eyes, Clementine's doves, and Samoa pigeons. These were the only land birds. We saw a few plotus boobies and herons; a flock of twenty sooty(?) shearwaters were seen working west. They were overhead, a few lesser frigates; and lesser noddies were getting ready to nest on the west side of the islet. A few nests were started but there were no eggs. There were plenty of noddies, and nearly a dozen pairs of fairy terns flying overhead and going to sea. Golden plovers, tattlers, and three ruddy turnstones were seen. There was rain last night and tonight, with squalls during the day.

December 1

We sailed to Thikombia Island but found no anchorage so laid to until this morning when we went ashore at the west end and found birds scarce. The small birds seen were a single yellow-eye and a broadbill; a small hawk was heard. Barking pigeons were common and several Chile pigeons were heard. I went about five miles through the forest but saw nothing else. There is a village on top of the island, a mile or so from the east end, and the storekeeper gave me a cup of tea during the few minutes stop I made there. We left at five o'clock for the south, again with a head wind.

December 2

At daylight we saw a scattering flight of sooty, or slender-billed, shearwaters working across the wind to the westward of Vanu Levu. They were in singles and companies of eight or less birds. As we reached Vanu Levu shore a large flock of lesser noddies were seen fishing, and with them are a half dozen obscurus shearwaters--the first seen in Fiji. We started to put the boat out but the flock swept away and we had no use for so few shearwaters. In the evening, in the mouth of Natuva Bay, a flock of twenty sooty(?) shearwaters were seen working west. They swung about and probably went finally back to the point.

Rambi Island, Fiji Islands.

December 3, 1924.

We anchored here at eight o'clock and waited until ten to see the boss who gave us permission to hunt. This island belongs to Lever Bros. Company and is the only island owned by them in the Fijis. There were swallows about the buildings, and a half-mile away, I saw several wood swallows sometimes lighting on the trunks of cocoanuts. I went to the

top of the island and found a few birds--fantails, yellow-bellies, and a single yellow-eye. Small hawks and broadbills were also seen.

December 4

I went to the top again and saw several ground doves. They seem to get along well with the mongoose which is plentiful on this island. I saw four of them yesterday. Yellow-bellies were singing in numbers in the cañon today and I saw many of them. The females were more scarce than the males, and seemed to be nearer the top of the island, although males were also seen at the top. I saw four or five ground doves walking under the heavy forest trees. I also saw a small hawk light at a broadbill's nest and shot at it, but the nest had nothing in it when I went up. Orange doves were not common. Two warblers were seen, one of which was shot. Paroquets are about, but no parrots. Yellow-eyes are scarce. I saw a pair of ducks flying, and people say that there are a few about the island. I left at four o'clock for Kio Island a dozen miles to the south. We anchored at sunset and saw parrots flying.

December 5

We went ashore and found a few pineapples and bananas by a cottage which belongs to a man living across the strait who came over this morning. Parrots with blue on the back of the neck are common here but paroquets are rare. Warblers are rare as is the small streaked fantail.

Gray fantails and white-eyes are common and a few shrikes are seen. I secured a white-eye's nest, with three eggs hatching, fifteen feet up in a tree near the bottom of the cañon. The sooty flycatcher is common. I found a nest in a small tree six feet up, with two fresh eggs in it. Birds are common. I shot a large hawk. There are plenty of chickens and Hicks got five. The roosters were all just the same color, and the

two hens shot were each of the same color; also the four small chickens taken.

December 5, 1924.

December 6

Weather was clearing at 6 o'clock so we raised anchor and headed for the shore. Rained until noon and after, but went ashore awhile and got a few birds. "Kak kak" is the parrot call and as we are but a hundred yards from the shore, "kaak kaak" is plainly heard on the deck. "Queeuk queeuk" is the warbler; "tweet tweet", the broadbill. The Island is bright green after the rain. There is mangrove all along the shore. Cloudy and calm but the wind is blowing from the northwest and the weather is probably clearing. Moving across to plantation of commissioner for this district--three miles to Vanu Levu side of the strait. He owns the island but has no time to care for it. Wild pigs and chickens are plenty. "Kik kik kikkik" repeated dozens of times sometimes is Kingfisher, slower at the finish(?).

December 10

Vanu Levu shore has cleared patches along in the inlets but thick green forests come to the water's edge elsewhere. This forest runs up to a thousand feet or so a couple of miles back from the coast. A white painted cottage in a small clearing is the only sign on this island of people. There are more patches of bamboo scattered through the forest here than on the other islands. The average yearly rainfall here is 150 inches or more. Lever Brothers dry their copra in a dryer. The manager said that it is in the dryer twelve hours.

December 11

December 8

Ashore at Wairiki and up a couple of thousand feet, finding birds. Went ashore at the place of Mr. Fisher who owns Kioa Island and a large plantation here on Vanu Levu. Found the little black flycatchers scarce. Two fantails, and other birds same as at Kioa. Both white-eyes common. Barometer low and plenty of rain but no wind.

Vanu Levu Island, Fiji Islands.

December 9, 1924.

Weather was clearing at 8 o'clock so we raised anchor and headed for islands in Budd Reef. Arrived at Thombia at 2:30 P. M. and went ashore at once and top of island which is an old crater with the north side open. The interior is deep water and the sides are steep, covered with trees. Kingfishers, broadbills and Clementine's doves were the birds seen and heard. I also saw a couple of swallows flying around over the top of the island, and one flying across from the island a couple of miles south of here. Left at 5:30 and anchored close to other islands, Yamutha and pre- Saw a few red-footed boobies fishing as we neared the Budd Reef but no other birds were about. Saw patch back of the mission a little way.

December 10

Went ashore on Yanutha Islands and found birds scarce. A few honey suckers, yellow-eyes, kingfishers, broadbills, and several Chile, or black pigeons. Correia went on small isle to the east and found broadbills and saw a couple of Suva pigeons. Left at noon for Taviuni Island with a northwest wind and hunting anchorage at 4 P. M. Many lesser noddies flying north close to the water and a half-mile offshore. and another with-
out bars--both with enlarged sex organs. Males were calling all about

December 11th (?), for I found the barred female near

Ashore at Wairiki and up a couple of thousand feet, finding birds plentiful. Thrushes, shortwings, and fantails of two kinds are common; gray fantails are rare. Longbills are not rare. Their calling is like that of warblers.

that of warblers.

December 13

Went up again to 2500 feet and found a wren nest four feet up in a tree--the nest bulky, made of moss and lined with feathers. Also a thrush's nest made of moss and lined with dry leaves and grass, seven feet up in the side of a tree. A blue-capped flycatcher's nest was of moss and three feet up in a small sapling. There was one young bird in it. Found an old and a young ground dove on the ground, the young nearly ready to fly. Judging by tracks up high, wild pigs are common. Got lost coming down and came out a half mile from the entrance to the forest. Broadbills are absent from the forest where the blue-capped flycatchers are seemingly present. Rained up high until noon, but only enough to keep me wet. Got a duck which flew out of taro patch back of the mission a little way. Ninety girls and seventy-five boys are here at a Catholic school. Small hawks seen but large are scarce, tho' I saw one high up.

December 15, 16, 17

Went up again and on the 17th up 3500 feet or so--practically to the top. Birds same as below but found few red-breasts anywhere. Four, five or six cuckoos were calling together and I heard a couple of others which had females with them, or near. Shot one barred female and another without bars--both with enlarged sex organs. Males were calling all about these. Has the female two plumages(?), for I found the barred female near where males were calling on Kandavu also. Cuckoos seem to be above the 1500-foot level mostly and are heard commonly at 2500 feet and above. Correia got a yellow dove and saw others. I got a firetail finch in the forest with a flock of yellow white-eyes. Taveuni on the west side is lined with cocoanut groves along the shore and on top reminds me of Galapagos, by the crater peaks.

December 18

Lifted anchor and stopped an hour at Mr. Tart's place, seeing four kinds of imported doves flying about the beautiful grounds and on the lawn in front of the house. Magpies are useful checking pests and minahs are abundant. Magpies began nesting in 1894. A pair of crowned, or crested pigeons are nesting in the aviary and have young birds fledged.

Koro Island, Fiji Islands

December 19

Went ashore on the northwest side and found a white man clearing land, with some cotton already planted. I went a mile along the coast and up the trail to the top where a few thrushes and thick-heads are found. A thrush's nest is located in the thick cover, the nest of the usual type but with nothing in it. It was eight feet up on a sloping tree trunk. A nest of pinarolestes (?) is near-by with four eggs--more than found in any other nest, up to date. A little later a single young bird was found in a nest with two eggs. All the nests were eight feet or so above the ground with the usual rootlets and dark twigs for material. In a bush ten feet up, in the forest, a small nest was seen containing four plain bluish eggs, of white-eye. The parent was not seen at all for fifteen minutes, when it lit by the nest and was collected. The nest was suspended like that of the honey sucker. The thrushes were in thick cover. A couple of broods of young were seen and a specimen taken. The old birds are wary as elsewhere. Small honey suckers were fairly common, a few broadbills were seen, and kingfishers were present; a couple of yellow-eyes were heard. No warblers nor fantails were noted. Wild chickens were common and Hicks got roosters which vary somewhat in color while Kioa birds were all the same. Ground doves are here and a couple of small

hawks take the chickens of the settler.

December 20

Went up the hill again and got a few more thrushes and thickheads. Correia found none. He shot three pigs but was unable to hit them hard enough for the men with him to catch them. The weather is fine and clear. Parrots here are similar to those of Taviuni, with the addition of feathers in the back having a lot of red intermixed. A single paroquet was taken.

December 22

Rain started at seven o'clock in the morning but I went up again and got a few more thrushes and thickheads; also picked up four parrots fearing Correia would not get any, which fear proved to be well grounded as he got none. He did, however, shoot three chickens and a couple of sooty flycatchers. I got a set of two sooty flycatchers with one runt egg, 11 by 15 mm. while a normal egg was 17 by 24 mm. Old thrushes are very wary and hard to get while young ones will sometimes come when called hard enough. Correia got a large gecko, new to us, but I must have picked up a dead one and pickled it at Taviuni thinking it was a frog. Hicks got a snake and a set of two ground doves. Left at dark for Suva. 12 by 15 mm. is the size of the eggs of the honey sucker.

December 23

Southeast of Ovalau, I saw four ^{pacificus} ~~cuneatus~~ shearwaters fishing with a couple of yellow-billed terns. Reached Suva at dark.

December 30

Off Bhenga Island this forenoon, I saw a few ^{pacificus} shearwaters sitting on the water, and heard a sooty tern or two last night after dark. Light wind and calm all day. We were off the south side of Viti Levu at dark.

December 31

Sailing with fair wind and anchor at dark in lee of reef on Viwa Island. 25 or more plotus boobies are on a rock on the weather side of Viwa on the islet, and a small white tern was also noted flying there.

January 1, 1925.

Lifted anchor at daylight and went around the reef several miles to the southeast side of the island, put out a boat and went ashore over the reef leaving Correia on board to finish healing a sore foot. Found kingfishers, but there are no other land birds. We flushed a heron on the shore. The island has a string of cocoanuts through the middle for a couple of miles or so and the natives bury manioc as the Marquesans do breadfruit. Saw 2 small pits three feet deep and wide being filled by old women. Bananas, manioc and kumalas are the food. There are quite a few ironwood trees along the west coast, close to shore. A hundred or more people live in two villages on opposite sides of the island. We left at 3:30 for Yasawa. Fine weather which we hope will continue until we finish, as this section is unsurveyed, hence there are no charts for it. The captain was told that he is a fool for coming out here in hurricane season which has now begun.

January 2, 1925.

Went ashore at Matathoni Island and found a few black pigeons. Kingfishers, honey suckers and white-eyes are common and shrikes are scarce. A couple of hawks were seen and Hicks got one. I went to the top and found no yellow-eyes. Got a gallinule and saw a couple of swifts, several swallows, and three wood swallows, one of which was secured. Bananas are raised in some spots and cocoanuts grow all around the shores of several near-by islands. Forest is mostly of small trees. There are few large trees and much grass (?). The island is frequently burned over probably.

January 3

Lifted anchor at daylight and went around to Yasawa Island. Went ashore and up to the top along a cañon. Walking along the beach I heard a warbler and when looking for him heard a thrush which I got a few yards from water right at the beach. I also heard another there. Went on and saw another thrush at the beginning of the cañon and saw others along the cañon but saw none in the open forest near top. Found a few in dry forested hillside near cocoanut grove at fifty feet elevation. Similar to Koro birds but wing is shorter. On top, a duck hawk circled about and came near me but the safety set on my gun delayed me and my shot went wild, for the hawk came back to look me over after shot at. Then it went off toward islet where I think terns are nesting. White-eyes and kingfishers are common. Also saw several pigeons in the trees on dry hillside. Three wood swallows were seen circling near the top and swallows feed along the top as do a few swifts. Shot one light hawk which fell in thick grass and saw another dark red one near the top. Hicks got a thrush nest with two fresh eggs.

January 3, 1925.

January 5, 1925.

I went across the harbor to an islet thirty yards in diameter and found twenty or so pairs of bridled (?) terns with nests under the boulders to protect from hawks. One young and two eggs found. One egg was fresh and two heavily incubated. Kawakawa Island had no broadbills calling, but swallows, wood swallows, swifts, kingfishers, warblers, white-eyes were seen; also a hawk which later flew to a tern colony, circled, lit, and flew away without catching anything. Correia shot at a duck hawk but failed to kill it. Hicks got one thrush.

January 6

Reached Round Island at noon. A flock of plotus boobies circled around as we neared it. I went ashore by jumping on rocks and found it difficult to get up as the slope is toward the sea from all sides. The island is part of an old crater, the eastern side being gone. Bushes, a lot of pandanus, three or four young cocoanut trees, and thick grass cover the parts where the soil occurs. A couple of dark hawks (circus) flew around overhead while we were on the top of the island, and a half-hour after we left they passed us headed for Yasawa Islands. A half-dozen or less bridled terns flew from the island, part of them appearing to be young. A single tattler was seen and shot, the only bird taken. Left for Yasawa again at 12 o'clock, stopped at Kinsick Island and found a nest of bridled (?) tern under a rock on the top of the islet. Only three or four pairs were noticed, but a dozen pairs of white-capped terns were here and likely nesting, though we could find no nest. One bird shot had just laid, but the hawks are visitors here and disturb the terns. Not a single land bird other than hawks was seen or heard here. We left Kinsick and went on to Timboor Island, where we went ashore in a rough sea. Heard a kingfisher but could not see him. I saw a plotus booby

resting, and a couple of pairs of white-capped terns about a rock where they were perhaps nesting. Left for Yasawa to try tomorrow for more thrushes.

January 7

Sent Correia and Hicks across to other island, but Correia thought the landing was too rough when they arrived, so they came back and spent the time on Yasawa, getting the common birds, though Hicks secured a yellow-eye which is rare. I found a nest of yellow-eyes in a pandanus stub, but did not secure the old bird at which I shot. There was only one young in the nest, ready to fly. I got five thrushes, and Correia secured a thrush's nest with two fresh eggs in it. He saw a fantail but did not get it.

January 8

Sent Correia and Hicks back to the other island today and they got ashore without any trouble. Found no thrushes there and got no shrikes. I went to Asawa Ilau Island in the afternoon and found the thrushes, getting one. Kingfishers, broadbills, white-eyes, and honey suckers were present, and swifts were evidently nesting for birds were passing back and forth to the Yasawa shore. This islet is upraised coral and has tall, upright cliffs as well as pot holes of all sizes. It looks like the place for the duckhawk's nest but I saw no hawks about.

Correia got a couple of young small hawks on Nathoulla Island. The stomachs of these hawks contained lizards.

January 9

Went down to Naviti Island and ashore but found no thrushes nor

warblers there. Hicks said that he heard and saw thrushes, so we stopped over to try tomorrow for them. I explored a fine cañon with heavy cover today but found birds scarce.

January 10

Went ashore with Hicks, but found no thrushes and think he was mistaken. Sailed in strong wind at 2 P. M. for Waia and anchored at six o'clock in a protected bay at the south end of the island, with high hills and cliffs to the west of us.

Waia Island, Fiji Islands.

January 12

Went ashore and up on top, finding thickheads in the upper forest. One or two would often be with a small flock of white-eyes and other small birds. Firetail finches were with the honey suckers, and others were feeding in the blossoms of a red flower that was on large trees. Though excellent country for thrushes, none were found. Shearwaters of obscurus coloration were said by natives to nest in June around the peak of the island. The three or four obscurus shearwaters that were noted in the flock of terns off of north Vanu Levu were the only ones that I have seen. Gallinules are heard and flushed near cultivated ground, and rail are heard. No swallows have been noted, but wood swallows and swifts were seen; also large and small hawks. Young male thickheads resemble the females in color and most of the adult males were not breeding, though a couple were in song with swelling sex organs. Large hawks hung over the thick forest trees in the strong wind, looking for lizards, and a small hawk was seen on a burnt log near the ground on the lookout for lizards.

January 13

Went up on the island again and got a few more thickheads. There was a good trail between two villages about four hundred feet above sea and then over the ridge to a village on the north coast.

January 14

Went over to Sail Rock and found quite a colony of bridled terns, a couple of noddy terns, a few white-capped terns, plotus booby, and a couple of large hawks hunting for eggs and young birds. A dozen white-capped tern's eggs, mostly broken, were found in a pile on top of the island, placed there, probably, by a native. Many eggs of both kinds were found broken by the hawks. Two young bridled terns were caught under rocks, but only the young were seen. Grass in bunches a foot high was hardly protection enough for small terns, though several broken egg shells were seen in it. A dozen bridled eggs were secured under rocks where hawks could not see them from above, but several would have been discovered before hatching. Left at 10 o'clock for Vomo Island. Went ashore at 12 o'clock and found birds very scarce. Heard one honey sucker and three broadbills. Saw three swallows and three wood swallows. Hicks got a rail and two swallows; Correia a couple of yellow-billed terns, and a big sea snake that had two eels in its stomach when I put it in pickle. Fine bananas, papayas, and manioc seen here. Three or four families here and a clearing in the forest on the flat. Lack of birds does not injure crops. The island is about a mile long and a few hundred yards wide. Of this perhaps two-hundred acres are suitable for cultivation. The rest is a sandstone hill with a trickling stream of water at one point on the west side. Three frigates were seen flying over the point of the island and we lay here all night as the barometer

dropped ten hundredths in a few hours and the hurricane season keeps the captain in fear of being in a bad position, when one might start.

January 15

Rain and wind all day but we got across to Navandra and Baldwin Islands at noon and went ashore, I on the former, Correia on the latter island. I got a cuckoo, a kingfisher, and broadbills while Correia picked up a rail. We left at three o'clock for islands a few miles south. At Camel Rock a few bridled terns were flying about and doubtless a few nest there.

January 16

I went over to Mondriki Island to look for shearwaters as natives say that they nest there, but I found no signs of holes. I saw a couple of owls and heard a small hawk, a pigeon, white-eyes, broadbills, honey suckers, and other birds. Correia worked Yunuya Island and saw duck hawks. Minahs are common and have been here a long time says the chief. The village came on board to look at the ship and Correia and Hicks head for Tavua Island after lunch. After they left there was a heavy squall with heavy rain.

Tavua Island, Fiji Islands

January 16

Correia and Hicks got three gallinules, a kingfisher, and a couple of firetail finches; they reported minahs on the island but no warblers nor fantails.

January 17

We moved down to Ngualito Island and anchored. Correia worked that

while Hicks and I went across to Malolo Island. Malolo has been burned over and has little primitive forest except in small patches in two or three cañon heads. I went around the coast for a couple of miles and then over the top and through the woods, finding only the kingfishers, broadbills, and white-eyes. Found a rotten egg of a yellow-eye in a pandanus stub, but saw no birds. Swallows and wood swallows were noted. A wood swallow sailed past me and caught, in the air, a grasshopper I had flushed, took it to a near-by tree, stripped off the wings and tail, and gave it to a young bird that sat near-by fluttering its wings and cheeping for it. Patches of mangroves and cocoanut plantations are around the coast of this island, but the entire hilly center is mostly barren with frequent ironwood trees, some ferns, and grass patches on some ridges. On a small islet a quarter of a mile from the island a colony of white-capped terns were nesting, the first nests I have seen of this species. Some had two eggs and several one egg. Several young were about. A hawk flew past the island, and why the young birds were not bothered by hawks, I don't see, unless the colony is too large for their peace. Less than a hundred birds were seen. There are a couple of pairs of bridled terns nesting, probably, as the birds hang over some large boulders. A fresh nest of heron with two eggs was found on the ground by one boulder. The nest was well made, largely of grass stems. Several yellow-billed terns flew around also and may nest nearby. I went to ship a mile away and got the camera but drizzly weather may prevent my getting good photos. Took photos at five P. M. It has been rainy for the last few days.

January 19

Yesterday (Sunday) was rainy all day, but this morning came out sunny and at 6:30 I took a small boat and went over to the tern colony to get a few pictures, since I was not sure that those taken Saturday evening

January 22

would show. I secured several white-capped terns' nests, and a single lesser noddy left the bunch of bushes on the islet, having rested for the night there. A couple of young terns went into the water and swam off from the islet though I was not near them. Seemingly the hawks do not bother this colony much. The two pairs of bridled terns likely have young ones stowed away under the boulders. A couple of yellow-billed terns were about but did not have nests. We are now heading northeast toward a couple of low islets and then up toward Vanua Levu. We stopped at Navini Island a few minutes and got a white-capped tern sitting on a rock near the shore. No land birds were heard. Went on to Lovuka Island and ashore where we found honey suckers, kingfishers, and broadbills. On the sand cay a few hundred yards south a colony of white-capped terns were beginning to nest and I saw three sets of three eggs each, as well as numbers of two eggs each; also a lot of singles, some of which had incubation started--one to three days. The nests were mostly of a few pebbles and some were scratches in the hot sand. Hawks do not visit this island as they do some in Yasawas--perhaps the colony is too large. We ran on to Lautoka to get some gasoline as head winds in many places have necessitated using the engine instead of sails. The north side of Vit Levu shows barren hills until well toward the summit of peaks at 1400 feet or so. Waterfalls can be seen ten miles inland, in high forested country. Large sugar plantation here is owned by the Colonial Sugar Company.

January 23

Lautoka Island, Fiji Islands

Minahs and bulbuls are the only birds noted in a walk up to the store. Minahs fly back and forth across to small island three hundred yards off-shore.

January 20

We left at 6 A. M. with fine weather and used the engine along the coast until 2 P. M. when we anchored at Malaki Island and went ashore for the afternoon. The country on the Vitu Levu shore is grassy up to 1500 feet and used for cattle, while near Levuka it is used for sugar. There are wooded sections high in the upper ranges and one or two islands along the coast show considerable woods, but there is practically none on the mainland. Malaki Island is barren to a great extent but we saw a wooded patch or two and a lot of ironwood trees as we approached. Went ashore at 2 P. M. and found a few gray fantails, broadbills, swifts, and a couple of wood swallows, while Correia shot a black pigeon. The weather is hot and calm. Flock of platina boobies were present and likely nest on the

January 21

We started out about six o'clock and when off the east end of Malaki went on a reef to port as we were a trifle too far over that way. George reported rocks on port side just before the vessel struck. Luckily it is low water and we are likely to get off at high water in a few hours. The captain was on deck but there was no man at the masthead. As the coral is soft there is probably no damage done. The bow was out of the water eighteen inches after she struck and only the bow is holding her as there is deep water astern.

We got off at noon and anchored at Yendua Island at six o'clock.

January 22

Went ashore and to the west end, then back to near the village on the north side. Shrikes and yellow-eyes are scarce. Clementine's doves were heard in all patches of woods but the yellow ones were only noticed in the thick patch of woods near the top of the island. This patch was the

January 22

only one of its kind although along the shore some big trees were seen in valleys and in cañon beds. Few black pigeons and no small hawks were seen but we did see two big hawks. This island has been burnt over. It has one village of few houses. Cocoanuts in several valleys. Broadbills, white-eyes, and honey suckers are common. w-eyes and black pigeons were disturbed and some yellow loaves taken. Wood swallows were the most common birds. 330 swallow was

January 23

Lifted anchor and went over to Sail Rock where I went ashore for a couple of hours. Noddy, bridled, and white-capped terns had eggs and the last two a few young, while there was also a flock of lesser noddies on the rocks. A flock of plotus boobies were present and likely nest on the unclimable part of the island. A few large boulders and the upright rock a 100 feet or so are set on a reef of five acres or thereabouts. At least a thousand birds were about and we caught several large fish between Yendhua and here. Went on and anchored at Yanganga Island at one o'clock. Went ashore and found both fantails and warblers while yellow-bellies are not uncommon. No sooty flycatchers were heard, but I found a nest with a rotten egg and a broken one. This nest was like that of sooty flycatcher, but it may have been a thickhead's. It was four feet up in a bush in a cañon bottom. Both hawks were heard, and white-eyes, broadbills, and honey suckers were seen. on to coconut and other trees alongside the

January 24

Lifted anchor at eight o'clock as the sun was in our eyes dead ahead and rocks were plentiful. Saw a couple of reefs yesterday not down on the chart. Reached Kia Island at 5:30.

Went ashore soon after six o'clock and up to the top of the range 2300 feet high, through plume grass whose razor-like edges cut my hands

I went around to Solia Islet and found a flock of 25 plotus boobies resting on a cliff. A few bridled terns are flying about and I saw a broken egg shell on the island. A couple of old herons' nests were located and two pairs of herons circled anxiously about. Went on to Kia Island and found birds scarce. A couple of yellow-eyes and black pigeons were disturbed and some yellow doves taken. Wood swallows were the most common birds. One swallow was also noted. Yellow-billed terns were in high plumage but not nesting apparently. There is an old cañon on the top of the cañon. We left at 3:30.

January 27

Mathuata Island, Fiji Islands

On top of Kia yesterday I saw long walls of stone--fortifications, well built, and a pool of water in a big rock. All over the top there are wild pineapples growing as well as a few lemon trees. Went ashore early and after seeing the chief I went around the island to the west end, up on top a half-mile and down again. Shrikes were not uncommon and white-eyes were in flocks. Warblers were common and broadbills scarce. Three black pigeons were seen and a small hawk heard. Saw one large hawk. Warblers seem to frequent the mangroves here as several were seen and heard in them, though they return to cocoanut and other trees alongside the

mangroves very often. Shrikes usually use the ironwood trees. We moved at four o'clock to the Vanu Levu shore, a mile distant, where a few miles back from the coast the mountain is 2200 feet in height.

January 28

Went ashore soon after six o'clock and up to the top of the range 2200 feet high, through plume grass whose razor-like edges cut my hands

and face in numerous places. Heard several wrens well down on the ridges as they go much lower here than on Yaveuni or Kandavu Islands. I succeeded in bagging only one though I shot at a couple of others. They do not come as frequently to calling as other birds. They were not uncommon in the plume grass from the lower edge of the mountain but could only be located when they sang and the first one that I followed for a half-hour moved always ahead when I neared him through the high thick grass. The wing seems to be a different length from that of the Taveuni bird, which in turn differs in the color of the crown from the Kandavu one. Two pairs of blue-capped flycatchers were seen but no blackbirds. Two or three parrots were heard while I was on top but none came close. Barking pigeons were heard. Thrushes were not common though I got four. Correia heard none. Shrikes are common but only one kingfisher was heard. Honey suckers were scarce; warblers were common. Though I told Correia and Hicks to get three or four warblers, Correia managed to get only two, but these seem to me the same size as Mathauta birds a mile away though some former collector thought the small island had the larger warblers. Few paroquets were seen in the cocoanuts, broadbills were not plentiful, and I did not determine whether both white-eyes were present, though the one that was present was very common. Sooty flycatchers were not rare. Gray fantails were not as common as the other species.

January 29

Calm
Left in a ~~clan~~ for Mbua Bay. Have had to use engines practically all the way from Yasawa Islands as there has been very little wind since we left there. On a couple of small, upraised coral rocks on the west end of the island a dozen or less pairs of white-capped terns were nesting and I went over and got a downy young one from one rock; also saw a nest or two on each islet. Two young cocoanut trees were growing on each rock which

had a few square feet of rough surface. A light, fair wind takes us slowly toward Mbua Bay. As we get ready to anchor, with the captain in the rigging, we go lightly on the reef, head-on. Luckily, again, the tide is rising, and with the kedge out, so haul off in an hour and anchor.

January 30

Went ashore and walked about five miles to the entrance of a cañon which I go up to 2000 feet or so, to the top of the highest point of the ridge. Heard a few thrushes and got four. Wrens were not common but I secured two. Both were near or in plume grass along the ridge. Two parrots were heard but none of the little blackbirds were seen. Capped (crested ?) flycatchers were noted and three taken. Common fantails were present and white-eyes were the most common. Gray fantails were not common.

February 2

Vatu Ira Island, Fiji Islands

January 30

We reached here from Mbua Bay about noon using the motor all the way as the wind was light and ahead. Went ashore and shot a young cuckoo, recently from the nest and sitting, I think, in a tree where lesser noddies were nesting. A hawk flushed was the only other land bird I saw but Correia said that he saw a Tahitian cuckoo also. Perhaps five hundred pairs of noddies were nesting. Fresh eggs to young ready to fly. Noddies were seen and a couple of eggs taken. Also a half-dozen eggs of white-capped tern. Bridled terns were probably nesting also as forty or so were seen. Natives (?) were here the last few days cutting down some trees, in clearing for cocoanuts, where the noddies nest, though only a few dozen trees fill the space.

I photographed a few nests and we left for Vatu Ithake fifteen miles away. A half dozen lesser frigates hung high over Vatu Ira Island, where they roost perhaps, but there are no nests. Reached Ithake Island at four P. M. and dropped Hicks and Correia on the island while I went to the islet to look at terns' nests. The others found no land birds but ran into a number of wasps' nests and Correia returned to the boat with swollen lips and face. White-capped terns were nesting on the islet and a hundred or less bridled terns flew about and twenty plotus boobies came in to roost at night on the cliffs.

February 1

Left Vatu Ira and sailed across to Nanema Island where we anchor until tomorrow.

February 2

Went ashore and found rail quite common as we got five and saw a number of others. A few Clementine's doves were heard and I shot a couple of young. Hicks got a Samoa pigeon; the black pigeon was also present. I shot a number of sooty flycatchers which were common. I also shot a few large yellowish lizards which were frequent. We saw a couple of small rats but they were too nimble at hiding for us to get them. Left Nanema about 10 A. M. for Savusavu Bay arriving at 4 P. M. and took the cook to the hospital, since the doctor advised that he was sick.

February 3

Went across the bay to Wailev River and ashore at 8 o'clock. I went up Lambassa trail about five miles finding nothing unusual in the birds, but the ridges are all so precipitous that little collecting can be done on them. Wrens and thrushes were taken, and we thought we saw four small

paroquets fly across the river. The hospital as the doctor said that

February 4

Mr. Cooper took us over a trail and up into the forest where ground is better for getting about, but the two birds for which I am hunting are not found. The Cooper Brothers who have a large plantation here say that they have seen the large keekow, as the warbler is called ('longbill' in our notes) but

The blackbird which we found on this island near Kioa has not been seen at the other three collecting points though we went higher each time than we found them on the east coast inside Kioa.

February 5

Two of the sailors are laid up with influenza and I do not feel as lively as I should to go ashore and wade around in the wet so I remained on board, telling Correia where to go with a good chance of finding the wren which is our obtainable desiderata here. I got three yesterday. Correia saw three but did not bring any aboard. We have had a change from the fine weather of the last two weeks and if it is rainy tomorrow there will be small chance of getting the longbill here.

Vanua Levu Island, Fiji Islands.

February 6, 1925.

Correia and Hicks went ashore and returned with one warbler and a few other small birds. Showers during the day and the captain sick in bed groaning with influenza.

February 7

The captain is sick and we took boat back to the vicinity of the doc-

tor and sent the captain to the hospital as the doctor said that he would recover most quickly there. The cook returned on board well after his five days in the hospital. Showers during the day but barometer rising.

February 8

Sunday. Rainy all day.

February 9

Clearing today and went ashore in the P. M. but see only common birds

February 10

Went up the valley to the head and top of the ridge toward Natawa Bay to eastward. Got several of the wrens which are scattered everywhere there is thick cover. They are close to tidewater here while on Taviuni they were found above 1000 feet.

February 11

Called on the captain and found him convalescing but not ready to leave the hospital so I took the schooner and went back to Wailey River, an hour's run from here

February 12

Went up the river a couple of miles and up a ridge but find nothing out of the usual

February 13

Hicks and Ah Sin slept at a native village two miles inland

last night and went early this morning to the top of the ridge in the center of the island to look for large honey suckers, or long-bills, as I call them in my notes. They returned after dark with a half-dozen birds which seem a little larger than those of Taveuni. I went up to about the central ridge, and to the same height but did not find any of the desired birds. Heavy rains at 11 o'clock and afterward cuckoos were heard, of which I secured one. Parrots are scarce, because of the mongoose say the natives and settlers. Rats eat a lot of pineapples which grow in a long string along the ridge to which I went. Cocoanuts grow for several miles inland along streams, and villages are scattered along every two miles or so.

February 14

Went across the bay and got the captain from the hospital and sailed for Naira Island.

February 15

Sunday. We anchored at Naira after being on the reef for 10 minutes because of a worthless look-out who was at the masthead and did not report the shallow water ahead. No damage was done so we started the engine and started off.

February 16

Went ashore, up to the top, and along for a mile or so, finding and white-eyes, honey suckers, broadbills common. Flushed a ground dove and heard a couple of kingfishers, of which I secured one. Saw a rail while Hicks got a black pigeon and a wood swallow. Correia shot

four white-eyes. I was surprised that we saw no gray fantails or sooty flycatchers as there were large patches of woods along the top of the island. Saw no swifts nor swallows. A large and a small hawk were seen. I bought some bunches of bananas for a shilling each, and taro, six for a shilling.

Ngau Island, Fiji Islands

February 17

We reached here at 8:30 from Naira Island. I went ashore and up to the high ridges, but saw no thrushes, though the country looks good for them. Yellow-bellies and sooty flycatchers are here but no warblers were seen.

February 18

After a lot of talk in the village where none of the old men wanted to go up, the chief finally went with me to the top of the island where I understood that shearwaters nest, but when we stood on the top, after a rough climb, he pointed down to dense cañons on the far side of the island, saying that the birds nest there. I secured two thrushes on our trip up but saw no more though the cañon was traversed for a long distance.

February 19

I took Correia and Hicks up into upper country to look for thrushes, and each secured one while I got only two. Correia's flew up on a limb for him when he shot a parrot. They are molting now and are on the ground all the time, seemingly not wild and probably run to one side or the other as we approach and are only seen when suddenly alarmed, when they fly up.

February 20

I sent Correia and Hicks up again for thrushes, while I went along the coast a couple of miles and up into the forest at another place. I saw two thrushes, which I secured but heard no others. The boys got none. The entire top of the island on the ridges, above 1000 feet or so is heavily forested and I was rather surprised that the redbreast is not here as the country is suitable. Parrots, bark-ing pigeons, and white-eyes are common. Yellow-bellies are common and sooty flycatchers are not rare. Several small herons were about the mangroves near the village and we got a couple. One I shot was well away from the trees out on the edge of the reef, at low water, where scared by boys walking along the edge of trees. Several white-capped terns rested on the reef at low water, too, near the village. One parrot's call reminded me very much of a hoarse raven's call but most were "ka" rather than "caw".

February 21

Lifted anchor at daylight and motored over to Mbatiki Island with dead calm. A flock of lesser noddies and a few ^{*pacificus*} *cuneatus* shearwaters were sitting on the water a few miles off Mbatiki and flying about fishing. Went ashore and I went up to the top of the island up a well-wooded cañon, but white-eyes are common, with honey suckers in the flock with them. A couple of kingfishers were seen, and a large hawk which Hicks got later. A few broadbills were heard and a rail. This island is mostly grassy with few forested cañons. We left at dark with calm, for Mbenga Island.

February 23

We were a few miles from Bhenga when the motor went wrong, so

with favorable wind, we ran into Suva to fix it, and had to spend all day, the 24th, with a man from the shore, working with it.

February 25

We left Suva at daylight and reached Bird Island at 11 o'clock and found not a single bird on it and no evidence of birds. Only an acre of coral sand with a few low buro trees on it. We went across to Yanutha and anchored a few hours, finding birds few. I got three gray fantails and three broadbills while Correia got a couple of small hawks. I saw a couple of black pigeons and heard several honey suckers. We left at 5 and anchored at Bhenga at dark.

My bird, at times, when certain trees are fruiting, the colorful plumage of the mating dove is the most attractive sight upon which the vulture to focus his eyes. Two species of honey suckers and an ever-present flycatcher can be seen at all times of the day. Flitting about the trees, while overhead is marked the erratic flight of wall swifts that are a help in keeping the insect population within bounds.

When one gets farther afield, however, foreign birds are not conspicuous, except in a few islands where the owners of large plantations have imported them for various purposes. At Thindia island, for instance, I was amused to see how closely about the house and out-buildings, on one plantation, a considerable flock of minahs staid. In fact, most of them were on the sheds and the dwelling house itself. Some were more than a hundred yards from the house and I was told that a dozen or more taken to the opposite side of the island, to another plantation, returned in a few weeks to this preferred home.

With the Birds of Fiji

In Suva, the capital of Fiji Islands as in Papeete, the capital and principal port of French Oceania, one interested in birds observes the presence of the introduced minah before the short walk from wharf to hotel is completed. As the visitor stands on the hotel veranda it is quite likely that the pleasant notes of an Indian bulbul, or the cooing of a dove, two other imported birds, will be heard before the first native Fijian bird is seen. When, later in the day, he strolls through the green-swarded Botanical Gardens several native birds may be seen and heard. The blue-backed kingfisher is, perhaps, the most noticeable as he attracts attention by his unmistakeable cry but, at times, when certain trees are fruiting, the colorful plumage of the nutmeg dove is the most attractive sight upon which one cares to focus his eyes. Two species of honey suckers and an ever-present flycatcher can be seen at all times of the day, flitting about the trees, while overhead is marked the erratic flight of small swifts that are a help in keeping the insect population within bounds.

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On our arrival in Fiji in June, it was deemed desirable to work some of the out-lying islands first, and leave the two largest island, at least, until later, when the hurricane season was due.

In this decision, the Lau group over one hundred and fifty miles to the eastward of Suva, seemed the logical place to begin, so we headed out in that direction and dropped anchor first at Matuku Island, in a sheltered bay on the south side of the island. It was a pleasure to find a trail completely around the island and a matter of surprise to see the weeds closely cut its entire length, even miles away from the villages and over portions of the track seldom traveled.

Here began my acquaintance with the barking pigeon, a species that calls quite like an aged, well-fed, medium-sized dog barks. Woo woo' woo woo woo' one might write it. Like other birds of this region, the pigeon can sit up in a tree calling regularly while a hunter can peer and look and search in vain for the author of the call. In Suva, during the hunting season, pigeons are often seen for sale on the streets, but in the outer islands they are seldom molested and are abundant and tame.

For birds of such strong flight as pigeons it would appear to be an easy matter for them to fly over the water to an island in sight only fifty miles away, but it does not seem to be done by the Fijian pigeons. Forty-five miles separate the islands of Totoya and Kambara, and on each a different species of pigeon occurs, though on both another species is not rare (?). Sixty miles north, Naiaua Island contains all three species and were the barking species so disposed, it could fly by easy stages of sixteen miles or less down a string of islands to

Kambara.

But some of the smaller birds are still more prone to stay strictly on their own islets, in some cases, while in others they have wandered hundreds of miles to become residents of suitable territory.

A clear-voiced whistler, common on Wangava Island, in the south end of the Lau group, could not be found either on Kambara, three miles away, nor on Marambo, six miles away. But why the wattled honey sucker, occurring in Tonga and Samoa as well as on many islands of Fiji should elect to thrive on Marambo and pass up the much larger island of Kambara six miles off passes my understanding; and why, from Marambo and Fulanga, twelve miles away, should it jump over Namuka in Lau, and some smaller isles, and plump down on Mothe, residing there and on a half dozen islands for fifty miles north to the village Lomaloma on Vanua Mbalavu Island, and stop within the confines of the village with ten miles of perfectly good country adjoining the village on the north?

Why leave Kanathea, ten miles west and Naitamba, twelve miles west of Vanua Mbalavu to settle on Yathata Island thirty miles west:

In the Galapagos, some years ago, we found a mocking bird common on a small islet only a mile from the large island of Charles, which contained no mocking birds, but this seemed attributable to cats that had run wild. Here in Fiji, the cat theory will not work for cats are on practically all of the islands.

One charming small bird, widely distributed here, is a sprightly fantail that has a pleasant way of dropping down to interview a forest intruder, flirting its tail about much like a wren and spreading and closing its wings when singing to its mate in the nesting season.

Yesterday I was searching the steep wooded sides of a mountain cañon in search of a supposed amateur songster of an entirely different family of birds. Suddenly over my head the notes trilled out and I spotted a singing fantail giving voice to a neighbor's song.

On one island I found two nests of fantails within a few feet of the main trail between two villages. The birds were so tame, remaining on their nests while people passed on the trail, that on the following day, I went back with the camera and succeeded in getting a picture of the birds on their nests, as both were close to the ground.

The nests of these gray fantails vary greatly in their composition. One found on Kandavu Island at 1500 feet elevation was made of bright green moss, lined on the inside with black hair-like rootlets, with a few pieces of white cocoon fastened on the outside.

Another nest of quite a different make-up was located at a much lower elevation on the same island. This one was of fine dry grass and shreds of bark, lined with the same material, though it also had the cocoons on the outside. The nests of the gray fantail are well-supported by being placed in the forks of small limbs, but the nest of another species of fantail is lashed onto a single small stem, tightly and smoothly swathed in spider webs and with a long festoon of dry grass pendant from the lower end.

The little red-breasted bird, smaller than the fantails and locally called a robin, builds a very neat nest of soft moss and perches it on top of a mossy limb, where its color makes it quite inconspicuous.

The smallest bird in the islands is the pretty little red-capped honey sucker that builds an unstable nest of stringy material and hangs it sometimes close to the ground, attached by a couple of threads

to the green leaves of some low bush. But it yields to none of the larger birds in displaying solicitude for its nest when a collector nears the bush. With seemingly broken wing it struggles just ahead of the disturber and hangs an easy prey in a close-by bush until approached, when it manages to flutter along a few feet farther, to rest with fluttering wings awaiting the next advance which stirs it to try again. It repeats these tactics until the nest is far behind after which recovery is sudden.

The beautifully colored doves of Fiji build typical doves' nests of a few twigs or leaf stems but the ground dove frequently makes a much more substantial nest than the other species.

I obtained a photograph of one well-built nest placed on the dead branches of a fallen forest tree. This one, from which the parent was flushed, contained two eggs and another nest found later contained two young birds. The nests of four other species of doves found on various islands held but one egg or one young bird each.

An orange dove on Ngamea Island, flew to its nest as I stood watching. The nest was twenty-five feet up from the ground and about the same distance sideways from the steep hillside in which the tree grew. This nest was much better built than the nests of four other species of doves in Fiji. The female left when I started to climb the tree but when earth had been reached again, I heard a call and there was the dove hopping around in the tree. To thoroughly authenticate the egg, I collected the bird which was gazing at the place where the nest had been, but judge of my surprise at the skinning table that evening when I discovered that a young male had been the recipient of the shot instead of the supposed female. The same

evening I skinned two other green birds and found them males instead of females. The plumage of the adult male is a bright, beautiful orange with a dull-colored yellowish head. When startled the male will call a tik tik tik every second for a considerable period.

Another note reminded me a great deal of one of the large geckos which sometimes frequented our rooms at Papeete and about bedtime would announce his presence.

A golden dove on Ovalou Island, the seat of the first capital of Fiji, betrayed itself on its nest in the bottom of a dark cañon near the top of the island, by dropping the egg shell, from which the young had just emerged, directly from the nest instead of carrying it away as most birds would have done. This nest, as well as another one found with a fresh egg, was composed of short pieces of a crinkly, curly-stemmed vine that is common in the forest.

The eggs of the Fijian doves vary somewhat in length but little in width, as is evidenced by the following measurements of one each, in millimeters; Ground Dove 33 by 23; Clementines Dove 38 by 22 m; Nutmeg Dove, 33 by 20; Green Dove, 33 by 22; Golden Dove 33 by 22; Orange Dove 34 by 22.

A nest of the barking pigeon, found on Ovalou Island was merely a few twigs ~~xx~~ loosely placed on top of the leaning trunk of a small tree, directly over the cañon bottom.

The Chile pigeon builds a much more substantial nest of twigs and dry stems, judging by one found on Kandavu Island. When taken young from the nest this bird will become very tame as are a couple that are the household pets of Mr. Steinmetz, the owner of Munia Island. At luncheon time, one of these pets flew to a stand back of

me and ate rice pudding from my spoon and a piece of kumala from my fingers.

Inside the veranda of Mr. Steinmetz' home a pair of Tahitian swallows were nesting, entering through one of the always-open windows. The usual nesting site of this bird in Fiji is close along the seashore, in some small cove or nook in the cliffs.

One of the most satisfactory land birds in Fiji, when nests are the desiderata, is a dull-colored starling, that has a penchant for cocoanut or pandanus stubs to hold its eggs. On one island, Vanua Vata, a patch of twenty acres of pandanus trees contained several nesting sites, only two of them revealing eggs, however.

In the cocoanut groves, the oldest and rottenest stumps are the ones most likely to hold nests. Sometimes one sees a bird entering a hole in the top of a seventy-foot leaning trunk and then on the other hand, a stub but four feet high may be the selected spot.

In one case the bird flew out of a hole in a hollow stump and reaching down I found the eggs only six inches above the ground.

When I go birdnesting or picture taking it is the sea birds that get my major attention. The lesser frigate birds nesting in Fiji show more consideration for the photographer than do the colonies farther east in the South Pacific for they stay on their nests until one can almost touch their wings.

The common booby in Fiji, contrary to the habits of the race in eastern Polynesia, seems not averse to having a close-up picture of itself and family taken. Standing proudly erect at the back of its nest it simply invites the photographer to do his best.

The black-naped tern nests right out in the open and still

One sometimes has a chance to try pictorial composition in the effort of photographing red-footed boobies on their nests, but so far my trials have not been as successful as hoped for. In Fiji, as on Clarion Island off Mexico, the greater part of the breeding birds are white plumaged. On some twenty or so islands, where I have found them between these points, the nesting birds show more gray than white.

The haphazard nest of the white-plumaged fairy tern is still a desiderata in Fiji though it was often located in the islands of French Oceania. We visited over sixty islands in Fiji before the first small colony of fairy terns was seen. Two little islands in the Ringgold group in northeast Fiji harbor companies of thirty birds or so and it is likely that these are the only ones in Fijian waters.

On the same islands lesser noddy terns live by the hundreds advantageously, and we saw a flock fishing one day that must have numbered well over a thousand birds.

The noddy tern in Fiji exhibits both its styles in nest-building. On Wailagilala Island, where hundreds live in close proximity to the lighthouse, the nests are well-built structures in tall cocoanut trees, while on other islets the birds place their eggs on the bare rocks, lining the nest with bits of coral or seashells. On Latea Viti Islet bits of snakeskin are sometimes used by both noddy terns and boobies to secrete their homes for the sea snakes crawl up there in numbers to shed their skins.

On the Yasawa Islands, in the western part of Fiji, bridled and black-naped terns are common nesting birds, the former hiding its eggs under rocks and boulders where the pestering hawks cannot reach them.

The black-naped tern nests right out in the open and small

colonies of these suffer also from the ravages of the hawks which fly out from the larger islands to raid the small islets where the terns hatch their young.

The striking variations in color and size in a number of the landbirds which are represented on several of the many islands of Fiji bring a continual asking of the question: What causes such changes in a bird on islands where conditions are so similar?

Personally, I am unable, so far, to offer any satisfactory answer. While a few of the Fiji Islands are uninhabited the greater number have native settlements on them and on several of the small ones scattering white men live, in some cases owning the entire island. We almost invariably found the white owners, or their representatives, possessed of typical oldtime Polynesian ideas of generosity. Horses were always at our disposal had we been able to use them advantageously, and some sort of timely gift was sent aboard before we left the island.

One meal at least, during our stay at an island, had to be eaten on shore and from one island we sailed with two plump little pigs which fattened on board for Thanksgiving and Christmas dinners. A magnificent turkey was pressed on us at another island where the lady of the island served refreshing cups of tea, and home-made cakes under the trees by the water's edge when we returned from our day's collecting. At another island the owner, living some miles away, brought to us in his launch a portion of a freshly killed beef to vary our canned goods fare, while at still another we were invited to help ourselves of a deer, which jumped within range. I saw only

that day.

The native Fijians were always friendly and on Sundays especially, frequently came on board to look over the France and wonder at the work we were engaged in. On three or four occasions the chief of a village brought a party on board to entertain us with their peculiar style of dancing and singing. While the dances and songs themselves did not greatly impress us the marvelous ability displayed in keeping time, and in tune with one another was of continual interest to us.

Though we have spent three of the four months of the dreaded hurricane season working around the western edge of the archipelago, and have run on reefs three times during the last two months of our voyaging, our good fortune still stays with us and we live in hopes that the cruise may be completed without loss of ship or personnel.

A few of them joined the common ones in the pig pen but most of them are seen in the fields where the rice has been cut. They are also about the hotel.

June 11

We went out to the wireless station and saw several large, long-tailed paroquets in the mangrove. They are looking at nesting sites in old dead tree stumps. We secured two birds in three days' hunting for them. Assuming that they are introduced species, we shot no others, as only a half-dozen or so were seen.

June 14

It has been rainy for the last few days but we motored to Van Island where the chief says he has seen in Vana Island, which he owns. I talked with several old natives who said that there are none left. As the island is small and there is a village with

Nandarivatu, Fiji Islands,

May 18, 1925.

We went down the road toward Suva four miles and saw a young duck hawk along the stream where a flock of Chile pigeons were resting. A dozen pigeons and a hawk followed when my shooting scared them. I got a hard shot and injured a hawk, but failed to find it in the thick cover. A pair of small paroquets flew over the road, going fast, and high up, to trees with flowers across the cañon. I got a redbreast parrot the last day out hunting. Saw one or two more.

We reached Nukulofa yesterday and found that the "Framco" had been there since Saturday. May 19, 1925.

We went to Ba and saw plenty of minahs along the road, while at Ba I saw flocks of another kind feeding with the common ones. A few of them joined the common ones in the pig pen but most of them are seen in the fields where the rice has been cut. They are also about the hotel.

June 11

We went out to the wireless station and saw several large, long-tailed paroquets in the mangrove. They are looking at nesting sites in old dead tree stumps. We secured two birds in three days' hunting for them. Assuming that they are introduced species, we shot no others, as only a half-dozen or so were seen.

June 16

It has been rainy for the last few days but we motored to Bau Island where the chief says he has sasas in Viwa Island, which he owns. We talked with several old natives who said that there are none left. As the island is small and there is a village with

with cats and dogs present, it is not likely that there are any birds.

June 22

We went around the bay six miles and up a rocky cañon, where we saw a pair of duck hawks flying and calling, near a high cliff. We had no chance to shoot them. Though it is good country for them, we heard no thrushes.

July 1

We reached Nukulofa yesterday and found that the "France" had been there since Saturday.

July 7

We got a permit today, and Correia secured a few birds. Swifts are common, as are warblers, about town; and we saw shrikes, kingfishers; Berg's tern, flying about the bay, as well as a few black-napped. Red-footed boobies and plotus boobies were seen shortly before we entered the lagoon.

July 8

We started for Eua Island and in rain and squalls reached anchorage, but the west wind prevents anchoring on the west side and we stand out to south where there is a heavy wind during the night.

July 9

Heavy west wind prevents landing at Eau and we anchored off Tongatuba for the night.

July 10

July 10

Went across and ashore while the boat lay to. I saw two each of parrots and pigeons. Shrikes were common about the pastures; starlings are also common.

July 11

Went ashore again and to the top of the island where I shot four parrots, but failed to get a pigeon though I saw them several times flying from one cañon to another. Kingfishers are more common on the top of the island than at any place we have been. Yellow-tailed tropic birds are flying about the forests up high, where there is grass land in places while on top there are small outcroppings of coral. Cañons are steep or precipitous, clothed with jungle where wild chickens range. The east side of the island has cliffs on top and forest jungles on the slopes. We left with a head wind at dark for Ata, which is ninety miles to the southwest.

July 13

We reached land at 4 P. M. and went out in a boat, picking up a red-footed and a couple of plotus boobies along the cliffs where they are nesting.

Ata Island, Fiji Islands,

July 14

We went ashore at 10 o'clock as there was seemingly a heavy, set current to the east, and a light wind. A wandering albatross swung in a wide circle about the ship last night and then away to the eastward. Its plumage was brown, with the head of lighter color. The top of

the island is covered with trees with open stretches in which vines grow. Samoa pigeons were not uncommon and yellow-eyes are common. A small flock of starlings was called to the tree-top above me and a couple were shot. Later, Hicks said that he saw a flock of 30. I saw two more flying, but secured no others. The yellow-eyes ate the papayas when ripe, and wild chickens which were plentiful, ate the bananas before they were half grown. Forty years ago the few people on the island were moved to Eua Island by the Government, as black-birders had taken some of the inhabitants previously. One hawk was shot and another seen. An owl was scared from a tree. Along the top of the cliff, at noon, several red-tailed tropic birds were flying about and undoubtedly nest, as does the yellow-billed tropic bird, of which Correia shot one. Blue-faced boobies nest along the shore at various places, both birds being at the nests usually. We saw one young in the nest with an egg, and a couple of eggs in another nest. Only one young bird is reared, the other being killed or starved by the first born. This is the observation I have made elsewhere of this species. Cocoanuts do well here, a hundred or two trees being seen; also, fine tasting oranges were found as well as a tree loaded with lemons. A couple of frigate birds chasing boobies were seen last evening. We left at dark for the North.

are seen in other places under bushes and on tops of cliffs. A yellow-billed tropic bird was flushed from a hole July 15

cliff near the top, but this hole was in sight at daylight but there was a head wind and we made small progress.

there. Ground doves were seen and sooty flycatchers were common. Kingfishers, warblers and yellow-eyes are common, while a pair of sw. July 16

also about. No swifts were seen. There was a heavy wind from the north and north west. We reefed

down finding ourselves to the eastward of Eua Island all day. Occasional obscurus shearwater and one or two which looked like parvirostris and still others which looked like neglecta, were observed. Two or three sooty terns together, fishing, were seen several times. Twice we saw plotus and red-footed boobies. The wind got around to the west at dark. It has gone clear around the compass twice in the last week which accounts for our spending only three days on shore since a week ago last Wednesday.

Namuka Island, Fiji Islands

July 17

The wind from the southwest was light in the morning and we headed in for Telekitonga Island, ten miles away, reaching land at 11 A. M. The chart was wrong, however, and the captain discovered after we had been ashore, and returned on board the vessel, that we were at Kelelesia Island, twelve miles southwest of Telekitonga Island. This island is of sandstone and has cliffs in some places fifty feet high. On the east end is a grassy open place a few square rods in area where it is evident that shearwaters nest in another season. Only seasnakes are found in a few burrows. Most of the holes are in a patch of grass, but other holes are seen in other places under bushes and on tops of cliffs. A yellow-billed tropic bird was flushed from a hole in a cliff near the top, but this hole was not suitable for egg-laying purposes. A pair of tropic birds were seen flying about there. Ground doves were seen and sooty flycatchers were common. Kingfishers, warblers and yellow-eyes are common, while a pair of swallows were also about. No swifts were seen. Rail were heard.

July 18

We moved to Tonumeia Island in the morning and went ashore for three hours. I got a gallinule and saw several ground doves. Clementine's dove was heard often, though none were shot. A swallow was seen. Kingfishers, sooty flycatchers, warblers, yellow-eyes and ground doves were taken. A couple of tattlers and a golden plover were on the beach. We left at 11 A. M. for Telekitonga, twelve miles away.

Nomuka Island, Fiji Islands

July 22, 1925

We went ashore at the village and found orange trees full of ripe fruit. No orange trees were seen at Nukulofa where the population is much larger. Birds were scarce and no sooty flycatchers were seen. There are only small patches of brush as the entire island is under cultivation. Cocoanuts, and small plots of manioc and yams are grown. The latter are being planted now. The island is two or three miles long and horses and carts are used. A rocky mound is 150 or more feet high in one spot. Hicks got three ducks from a pond, while I saw two more feeding in a fresh-water lake of about two acres. I secured a cuckoo and saw an owl on a rocky hill. Rail were abundant and gallinules were taken. Shrikes, kingfishers, yellow-eyes, and warblers were not plentiful, but were seen. The last are scarce. Most of the houses were frame, with iron roofs. A couple of white men had stores.

July 23

We saw about twenty-five yellow-eyes flying in parties of six to ten, across from Nomukaiki Island. The wind was lighter, so

we ran down toward two small islands to the southwest. We reached the islands at dark and ran close to each, but the water was deep close-up so we stood off for the night. Close by the shore of one of these islands a couple of whales went along beside us.

Parvirostris (?) shearwaters were flying in hundreds over one of the islands, and thousands of sooty terns, as well as plotas and red-footed boobies. At 11 o'clock we went aboard and at 12:30 I went ashore with Hicks on

July 24

Went ashore at 7 in the morning at Hangitonga and found a small colony of sooty terns with young running about and hiding in the grass. Shearwater burrows were everywhere in the soft ground and we sank in to our knees every few steps. One downy young dried specimen nearly ready to fly was picked up. It was probably *P. tenuirostris* as E. W. Gifford in November saw lots of that species ? fifty miles north of here in 1920. In the thick grass on the sidehill I found several young and a few adults of *P. parvirostris*? in nests, and one heavily incubated egg was taken with an old bird. A couple of birds were found together, one in a rough nest, and the other a foot away. Up on the hill several plotas boobies were nesting on the nests were found at the base of cliffs, usually in thick grass. Frequently a bird flew over and along the cliffs, and I shot a couple. They were all in the same plumage and in this respect differed from the Ducie Island birds.

July 24

Correia climbed up to the top of the island, past one ticklish After a couple of hours' work with the camera I took the gun feet which I decided not to tackle, as there was enough work below and went into the forested area, where I found a lot shearwater with a camera. He found ground doves plentiful, and took Clementine's

and Clementine's doves were heard. Hicks shot a couple of black

all the first we have encountered since Samoa. I saw several of doves, as well as Samoa pigeons. He also got yellow-eyes, warblers and sooty flycatchers. Red-footed boobies were nesting there and below where we landed a number of plotus boobies were beginning to nest. Greater frigate birds were flying about--a couple being seen with nesting material. I shot five of them but most of them were along the inaccessible cliffs. A couple of rail ran ahead of us in the grass near tern colony. At 11 o'clock we went aboard and at 12:30 I went ashore with Hicks on

Hangihapai Island

I took the camera and worked toward some nesting red-footed boobies while Hicks went over the hill into the forest. Several thousand sooty terns were nesting in the grassy area where the ground was honeycombed with shearwater burrows, and we went in to our knees, sometimes several times in succession. Many downy young terns a day or two old were seen lying dead and there were very few live ones in comparison with the other island. A number of red-tailed tropic birds were flying about and we found many nests under pandanus trees, usually with young birds though I did pick out one fresh egg. Up on the hill several plotus boobies were nesting on the ground close to trees where red-footed boobies were sitting on fresh eggs. A obscurus shearwaters were seen toward evening, while several sooty terns and a couple of red-footed boobies headed toward

July 24

After a couple of hours' work with the camera I took the gun and went into the forested area, where I found a lot shearwater burrows. A kingfisher was shot, and a few yellow-eyes, warblers, and Clementine's doves were heard. Hicks shot a couple of black

rail, the first we have encountered since Samoa. I saw several of the common ones, and noticed that they will fly as quickly as run if suddenly frightened. Several shearwaters were flying along the top of the ridge and a couple were secured with the aux as they passed over my head. Some cocoanut trees are scattered about in the forest at different places and as there is little brush, the walking is good. In the hour or so that I spent in the forest I secured five sooty flycatchers. The red-footed boobies were just beginning to lay eggs and several were standing on empty nests. Plotus boobies were standing under the trees where they were protected from the hot sun, in some cases, but most of them were in the open. We went aboard at sunset and left with a light wind for the north.

July 25

We have had calm or only light wind all day and are not far from the islands left last night. Got seventy-five birds of all the different kinds from the two islands, and a few eggs. There were plenty to booby eggs but we took only a couple of settings each. We finished the skinning at 2 P. M.

July 26

We reached Tofua Island by dark and stood off during the night. Two or three obscurus shearwaters were seen toward evening, while several sooty terns and a couple of red-footed boobies headed toward Hanghapa.

July 27

We sailed around Kao and tried one landing place but there was too much swell so we ran over to Tofua and anchored at 8 A. M. going

up to the top and around it a few miles. There is a smoking crater on the west side, and about a thousand feet down a large lake. The north side of the crater is heavily wooded with ferns growing along the top, inside and out. Two nice orchids were seen growing among the ferns. Three single paroquets were seen near the top and Hicks secured three near the beach. The island is 1600 feet high. Pigeons and both kinds of doves were taken, but no ground doves. We saw shrikes, warblers, yellow-eyes and a few swifts.

July 28

I went up into the forest in the crater, but saw no new birds. Secured six sooty flycatchers. I saw a hawk and Correia shot one. There are some cocoanut trees, but the people live on the other islands. There is a strong southeast wind, and showers.

July 29

There was a strong wind from the east but we went ashore on Kao Island and I proceeded to the top, finding low ferns high up, but saw no signs of shearwater nests though E. W. Gifford, in 1920, heard obscurus passing over while he was camping, later in the year, at 1500 feet. I secured a pigeon and one each of three doves; also paroquet, shrike, swift, warbler, and a few yellow-eyes and sooty flycatchers. We left at dark for Hapaii Islands with strong wind and our sails double reefed.

July 30

We made a bad landing at Fotuhaa at 10 o'clock and spent four hours getting a few birds. Hicks got cuckoo, sooty flycatcher, a few paroquets; warblers and yellow-eyes were also taken, all of these birds being common. Kingfishers and shrikes were not common but we secured some. I saw three rail and heard others. We left at 3 o'clock and at dark anchored at Pudupudua Island. This small islet of an acre or so has a few tohunu trees. We saw one tree each of pandanus and cocoanut. The wind was light in the afternoon.

July 31

A bergi tern was flying around the island last night. Fotuhaa was a high plateau of 200 feet and with the exception of small spots was all cleared and planted to cocoanuts.

Pudupudua Island, ~~Fiji Islands~~, *Tonga*

July 31

We went ashore at sunrise, and just before landing I called over and shot a curlew which flew up. I shot three golden plover on the beach and reef, just down from Alaska and in their summer plumage. I also saw a tattler. A couple of Bergi terns and a single black-naped were on the beach. I got the black-naped and one of the Bergi. A single warbler was heard in one of the few trees. We sailed across to the next island, Haaefa ? at 7:30 A. M. and went ashore until noon. We secured specimens of the usual birds with the exception of the sooty flycatcher. Rail were heard and Hicks saw a duck but he and Correia were bothered by numerous natives who followed them. I went around to the village to see the chief but did no collecting.

We left at noon and stopped for an hour at Teauba where I got a sooty flycatcher and saw another. Shrike, dove, kingfisher were heard and yellow-eyes and warblers were common. There are few pigs on the island. It is uninhabited but is only a mile away from islands that are inhabited. A couple of dozen fruit bats were seen, some hanging on cocoanut trees. We left at 4 P. M. and anchored at sunset at Tongva Island. At dark several dozen fruit bats were seen coming across from Kito Island a mile to the westward. The weather has been fine yesterday and today with a light north wind. Fifty eight cocoanuts fallen from one tree and saw over fifty more still on the tree. While there are probably not over two-hundred

August 1

We went ashore early, Hicks and Correia collecting at once while I went across the island to see the chief. There is a small village strung along the east side of the island and women were

seen doing the week's washing under the shade of ironwood trees. They were using galvanized iron tubs and washboards, and water from the roofs of the houses caught in cement tanks. There is a fine pulpit in the church. It is constructed of cocoanut wood and is railed off with finely turned fence of hard wood. Five steps lead up to it. The boys secured

The boys secured four sooty flycatchers. Paroquets, warblers, yellow-eyes, kingfishers and doves were taken; and rail and gallinules were seen. We left at 10 o'clock for Tokulu which we reached at 11:30 and I went ashore, getting a black-naped tern of a dozen seen. We secured an adult sooty tern of several seen flying over the islet, and found a couple of dozen young a few days old, taking two of them. A finely plumaged golden plover was taken from a flock of six, and a ruddy turnstone that was with them was bagged--the first

we secured at Tonga. We left at 12:30 for Fonuaika Island, arriving at 1:30 and went ashore for an hour, getting a couple of dark herons. Warblers and kingfishers were the only land birds seen though three rail were seen running through the underbrush. We left at 3 o'clock and arrived at Beabea at 4:30. I went ashore for an hour getting a warbler and hearing a rail. On Fakahigo, a couple of hundred or so yards to the eastward, I got a warbler and heard a dove, a shrike and a kingfisher. There were also dozens of fruit bats. I counted ninety eight cocoanuts fallen from one tree and saw over fifty more still on the tree. While there are probably not over two-hundred cocoanut trees on the island, they all seemed to have a fine crop of nuts. Oua, a mile to the eastward, is the main island.

August 3

We left at 6 o'clock and stopped at Funafuti until noon, where we went ashore at 7 o'clock and found rail very common. Gallinules were taken. No sooty flycatchers were found but warblers, shrikes, kingfishers, doves, and yellow-eyes were secured. The island is mostly cleared on top, and cocoanuts growing, with open places for raising bananas, manioc and taro. Several Bergi terns, as well as plover, tattlers, and a heron were noted. We left at 11 o'clock for Lima Island where we arrived at 2 and I went ashore for an hour. I found a couple of warblers and heard rail; two white herons, a tattler and four plover were seen.

We stopped a few hours and then I went to Tofana where I picked up a gallinule and a couple of fruit bats from a crowd in a tree. We then proceeded to Uhia Island where we anchored and got parquets as well as other common birds.

August 5, *Tonga*
 Uihā Island, *Fiji* Islands

August 5, 1925.

We left in the morning and stopped at Uoleva where we found the usual birds, and patches of cultivated ground as well as undisturbed forest. We arrived at Lifuka at noon. We went ashore and in the town saw yellow doves, shrikes, and yellow-eyes. There were several large, scattered berry trees and many ironwoods. Correia reported that birds were scarce in the suburbs. Hicks visited his mother, and I attended to various things in town. Birds fly from one island to another, undoubtedly, since only a half mile or so separates them and people walk across between Uoleva and Lifuka.

August 6

We left at 8 o'clock and stopped at Foa Island until noon, where we saw a couple of yellow doves in the village. Several of the large trees with the berries on which the doves feed were seen in the village, and a few of them outside. I saw twenty ducks in a small slough in the center of the island. When one was shot others flew about and lit somewhere beyond the loafing spot. A gallinule and several rail were seen. Warblers and paroquets seemed scarce, and no sooty flycatchers were noted. The island seems to have been entirely cleared, though bits are left for a few years uncultivated, and then cleared again for crops. We left and anchored at Haano for the night. We got a few photos of the women fishing with poison on the reef. The island is all cleared and warblers are scarce. Rail are plentiful, feeding largely from the yam patches, judging from the numbers seen there. Gallinules were seen and Correia got a couple of owls.

August 7, 1925.

We went across to Lauhoke Islet which has an area of about two acres and found the natives clearing it for cocoanuts. We heard several warblers, and saw a kingfisher and a cuckoo. Three herons on the beach were suffering from attacks by three black-naped terns that were ready to nest, perhaps, though no nests were found. The herons flinched when the terns darted. We went on to Moungaone Island and anchored for three hours, finding that warblers are the most common birds there. Doves, yellow-eyes, rail, gallinules, paroquets, and kingfishers, but no shrikes, were seen. Several crested terns were fishing near the shore. Went on to Ofolanga at noon and found the sooty flycatcher not uncommon as there were strips of uncleared woods in places along the beach. Flies were abundant and

the natives who were eating lunch when we went ashore were using fans of green leaves to protect themselves. They come to this island to work, only, and live at Moungaone. We left at 4 P. M. for the north with a light wind.

August 8

We made thirty miles during the night and started the engine at 7 A. M. as there was a light head wind. We saw several obscurus shearwaters at 8 o'clock and put out a boat, but they disappeared before I reached the spot where they were fishing. Correia, who saw some whales from the ship, said that whales attracted the shearwaters. An hour later we saw several other obscurus fishing and again put out the boat. Most of the birds proved to be noddy, lesser noddy and sooty terns but finally a shearwater came close enough to shoot. Only a half-dozen or so were seen.

We stopped at Fatumanga Island but a heavy swell prevented the attempt to land. I shot one greater and one lesser frigate bird, from a half-dozen that were resting on the island. Plotus boobies in abundance, and a few red-footed were nesting. About two dozen lesser noddies were fishing off shore, and several noddies were flying about the cliffs. We landed at Ovaka Island for an hour and found birds scarce. A dove and a shrike were taken, and kingfisher and yellow-eyes were seen. At 3:30 we went on to Vavau through a picturesque channel. Undercut cliffs along the shore and deep water close to the islands, some of which have coconut plantations upon them, and others with the original forest where up-raised coral rock has prevented planting. We tied up at the wharf at 5 o'clock.

August 9. Sunday.

Vavau Island

While taking a walk of a mile into the country, we saw kingfishers, swifts, warblers, yellow-eyes, shrikes and one thickhead. Several more thickheads were heard along the road in the cocoanut plantations where a few leafy trees still remain. The thickhead which we saw sat singing in an orange tree. Oranges grow on several other islands than that noted in the pilot book. A native trader from Neifau Island says that the Malau bird digs a hole in the sand and lays its, then another bird comes along, pulls this egg out, lays in the same hole; then still another, and so on until perhaps fifty lay in the hole, each putting the last egg laid in the bottom of the hole so the oldest egg is on top and hatches first. Another man says that the young birds can fly away as soon as hatched. Interesting, if true!

August 10

We went inland a short distance, finding yellow-bellies, shrikes and swifts common along the road near town. We found no sooty flycatchers, but kingfishers are common.

August 11

We moved down a couple of miles and I walked a long way toward the top of the island by a good trail, with cocoanuts along in the flats while the top of the ridge is upraised coral? with thick forest and vines. A couple of yellow doves were heard and the common ones were calling everywhere. Correia and I each got a cuckoo in the outskirts of the village. The most common bird is the yellow-belly which get into the cocoanut trees, and do not keep strictly to the forest as in the Fiji Islands. Warblers are scarce, at least they were not heard as often as other birds. Shrikes are common and were ready to nest. Yellow-eyes are not very plentiful. Kingfishers are found in most open places where dead trees afford look-out places.

August 12

We went ashore at Kapa Island, a few miles down, for several hours, finding the usual birds; then I went across to Ava Island where birds are common, and secured a swift, as well as several others. Yellow-bellies are not common. The island is the shape of a bowl or crater, being seventy-five feet or so lower in the middle than on the ridge. I went ashore at Euakafa Island where I found an old opened tomb, where I saw yellow-bellies. The slabs of coral which formed the side and top of the tome had been cut from coral at the water's edge, as I discovered when I returned to the beach, where the spots from which the slabs were

removed showed plainly. Upon landing at Maninita Island we found red-footed boobies nesting, and warblers the only land birds. A flock of Berg's terns was noted on the beach. We left at dark for Late.

August 13

I went up to the top of the ridge at Late, finding a half-dozen swifts flying about. The top of this island is a crater broken on the southeast side, and light bits of steam oozing out of various holes. The soil is hot in spots. A small lake was seen near the shore on the northeast side. We found yellow-billed tropic birds and ground doves common. I also saw paroquets, a few pigeons, ~~and~~ a couple of fairy terns, and a couple of black rail of which I shot one. Plotus boobies were nesting, and Correia got a yellow dove's egg. Warblers were abundant, singing everywhere in the morning as we landed and for an hour after. We left at dark for north islands.

August 14

We used the engine for four hours, nearing Toku Island at 11 P.M. ? Landed at 12:30 finding warblers and kingfishers as well as a stray pig-eon. Rail were seen, and a few noddies and lesser noddy sitting on the rocks, while in the large trees on the island are a few fairy terns getting ready to nest. A curlew, a few turnstones, tattlers, and golden plover were seen along the beach. On the southeast side of the island, a few feet off from the beach is a rock thirty feet high with a few stunted ironwood trees on top. In the forest of the main land are many fan palms as well as some cocoanut palms. The landing was not good, as we went in on top of a swell and onto a reef. The wreck of the ship 'Alexander' which was lost a few years ago with a cargo of copra from Vavau is still on the beach in the place where she went ashore.

Fanui Lai Island

August 15

We went ashore at 7:30, but no anchorage could be located and the vessel lay to. There was a flock of noddy terns on the beach and I found a young one among the vines and rocks. In an old inland crater is a pond of five acres or so, and here we came across a dozen ducks and with them, a pintail. I shot four of the ducks and the pintail, the latter proving very fat when skinned. The rest of the ducks flew away to another part of the island. Rail and black rail were seen under the trees, and Hicks got three of each, I got one of each, while Correia saw some, but was unable to bag any. I saw several others, but secured more as they run rapidly away for some distance before stopping.

On top of the ridge I sank into a shearwater burrow, a couple of feet from the entrance, and a black rail ran out and away through the trees. Sooty terns had young on several acres of ground on top of the island and some were close to a smoking crater. The last eruption left little crater but filled it full of lave. Yellow sulphur shows on the lee sides, particularly of rocks. I picked a little on the rocks at one side of a flow where a little smoke still comes out, but I did not go across to the main smoke, which is sulphurous at hundreds of yards from the crater. Red-footed boobies nest in small trees on the sides of an old crater, where smoke drifts across them with the trade winds. A few plotus boobies nest on ridge tops and red-tailed tropic birds are nesting in ferns on the crater side. Many deep fissures line the crater sides and make it difficult to get about. There are several old craters with bushes and trees, the recent one being near the center of the island. There were gallinules near the top of the ridge, and a nest in ferns at

the head of a gully, with a young bird sick nearby.

I counted one hundred young sooty terns walking and scrambling before me in one depression. Over fifty thousand terns were present, without doubt, on the island. One colony is a half-mile long by a hundred yards wide, and a couple of smaller ones were seen nearer the smoking crater. Warblers, yellow-eyes and cuckoos are the land birds. There was a heavy swell on the beach and I lost my gun as we got into the boat. It was washed into deep water by undertow before it could be recovered. We left at 2 P. M. for Niaufau Island.

August 16

Sunday. We neared the island at dark but stand off for the night.

August 17

We went ashore in the morning at a small village and walked three miles to the main place. Yellow-eyes are darker than other Tonga ones. Doves, swifts, and paroquets, with malau, form the land birds. I went over to the lake and saw tattlers and plover, as well as yellow-billed tropic birds, fairy and noddy terns over the lake. Hicks got one malau and saw others.

August 18

We went with guides and found big holes dug at the base of cliffs where eggs have been taken before, but none were found. Then, from this spot by the lake shore, we went back over the hill and across the lava field to the ocean shore where, in the forest, a piece or two of egg shell was dug up. A native, hunting around, showed me a place where birds

had been covering an egg, but as it was too deep to unearth, I tried another spot--a crack in the lava flow, and I soon felt an egg in the dirt and cinders far down in the hole. The soil was warm, possibly from internal heat as it was several feet below the surface. We dug as deep as possible but felt no more eggs. The crack was only a foot wide

and the egg we found was laid against the farthest side of the opening. A native went and unearthed another egg in the same fault in the lava, but near the top of the ground. This egg, too, was covered with soil.

Mrs. Correia was given an egg to eat, and two more to bring aboard, by the Catholic Father at the village. Some holes have already been dug

so deep in the loose lava cinders, by the natives, that we did not dare to dig in them any deeper to hunt for eggs because of the danger of them caving in. The birds run a short distance, or fly, to escape hunters. They are still common, as there are probably many nests unfound, though the natives do hunt for eggs. We left at 4 P. M. for Keppel Island.

August 19

We made a few miles to northward and had a heavy rain in the afternoon, with rain. The sails were double-reefed all night. A few sooty terns were seen fishing before the wind came, some drifting toward the south toward Fenuilal where colonies were nesting.

August 20

The wind was lighter and we made a northeast course, going about at 4 P. M. with the island about a hundred miles to the south-southeast and the wind from the southeast. A couple of yellow-billed tropic birds were seen about and a red-footed booby as well as a couple of sooty terns were seen.

August 21

There is a light wind from the southeast and we are making a southward course. An obscurus shearwater passed in the morning, and yesterday we saw two parvirostris ? about, fishing.

August 22

A couple of yellow-billed tropic birds were seen about overhead for a few minutes. There is a light southeast wind and we are making little progress, being only sixty miles away by noon.

August 23

The island is in sight at daylight about forty miles to windward, and at night perhaps about thirty miles. A yellow-billed tropic or two were seen, but not a shearwater. A single red-footed booby that I saw two days ago flew around.

August 24

We were about twenty miles to the east of the island at daylight, and we started the engine as the wind was light. We saw a few red-footed boobies and sooty terns fishing. We went ashore at ten o'clock and I proceeded to the top of the island--about 2000 feet. Paroquets swung around from the west, ahead toward Keppel, and then dart down a thousand feet to trees on the east side. There were many yellow-billed tropic birds circling about, and some fairy terns. Noddy terns are nesting in the forest, using some of the large ferns as nesting sites. Pigeons are quite common, more so than elsewhere in Tonga. The yellow-eyes and sooty flycatchers are darker than those of southern islands. This is the first time in sixty years that a vessel of the size of the France

has been here. The last one took off a lot of people to Peru ? as slaves. An old blind woman remembers and told the mate of the incident.

August 25

We went ashore, got a few more birds, and then moved over to Keppel Island, ten miles to the south. I went ashore in the afternoon while Correia and Hicks finished the birds on hand. The birds are the same as on Boscawen, shrikes being the most common. We secured a white heron which was in the forest hunting lizards, and later saw others. Herons were common on the reef as we went in, ten white ones and several dark having been seen.

August 26

We went ashore again and I proceeded to the east end, finding a few fairy terns flying above the forest there. I also saw a noddy, and Bergs terns are common on the reef where the herons fish. The herons here differ from those I have noted on any other island in the Southern Pacific in that they are not afraid. When one is shot at it flies only a short distance, and others near-by are not at all alarmed. The reason for this probably is that people are fishing on the reef all the time and the birds are familiar with them. There are rail, gallinules, and a few pigeons here. There are no yellow doves although plenty of their food. Yellow-eyes come about the village to feed in the trees. We left for Suva at 2 P. M., with a light wind.

August 27

The wind is light. A yellow-billed tropic bird was about at sunrise.

August 31

We reached Suva this morning after light and leading winds all the way.

NOTES BY MR. G. T. BARNES, SUVA, FIJI.

JUNE 5, 1928.

Given to Mr. H. H. Buck.

June 5, 1925

Probably what I am now writing will not be new to you, still some part of it may be of interest.

Giant Kingfisher

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JUNE 5, 1925. On the last collection, I was out for it and it passed within twenty feet in front of me. Given to Mr. R. H. Beck.

I was riding down from the village of Navunivatu, Viti Levu Bay, toward the beach and it was from a patch of mangrove ground on my left that the bird arose.

The kingfisher was fully eleven inches long, with the same colored plumage as the small kind only more dingy. The blue was not so bright, and the white feathers on the wings were discolored. The back was nearly black. Its flight was heavy—much slower than that of the small species, and as it flew in a straight line toward the mangrove swamp on my right, I noticed that it held its head in a line with the shoulders.

Natives told me that these giant kingfishers were plentiful in the early days, but as the bird nested in the low mangrove, it has practically disappeared since the advent of the mangrove which is a veritable beach comb, haunting the swamps and beaches. About twenty-five years previously I had seen one of them back of Ovalau, but was told that it was only a stray in that part.

On the second occasion of my seeing the giant kingfisher, I dismounted from my horse and went into the mangrove patch, finding that the bird had been eating the native wild (Job's tears).

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Ordinary Flycatcher

It is generally supposed that this bird is an insect eater, and does not eat fish, but this is not invariably so. As I was coming out of the Wainidoi River, ten miles below Suva, I saw a belo fishing in shallow water, and getting close up, noticed that it had a kingfisher for company. Three times I saw the kingfisher dive into the shallow water after shrimps, then fly onto a rock to eat them.

Saca Megapode

On the Tova Estate (Viti Levu Bay) one day, as I was riding toward the Wainibaka River, I heard a zooming noise on the rocks at my right. I dismounted to ascertain, if possible, what it was, as the place which had no trees, was such an unusual one for a pigeon. The note, too, was different, having a more vibrant tone.

Crawling twenty feet along a runway but keeping myself hidden I came upon an abandoned clearing covered with short grass. The bird was about ten yards away. It was slightly smaller than an English game rooster, had an aggressive head with yellow beak, and a stumpy tail. The coloring which was the same on the head as on the body was a mixed yellow, approaching red, and dingy black.

The bird continued its calling for a few minutes, and was answered from the far end of the clearing. Suddenly it took alarm, and as it flew out of the clearing I saw that under the rudimentary wings there were no yellow feathers. The wings which had no long feathers made a whirring sound when the bird flew. I also noticed that its legs were stout, of yellow color, and that the foot had three toes. On questioning the natives, I was told that about sixty years ago there was a great area of grass country in

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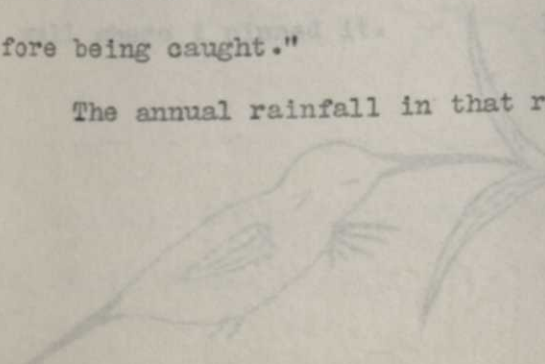
that part, owing probably to a denser population, and also to the fact that the people were more industrious. At that time they used to hunt the bird with dogs and would secure up to fifty in a day. Even up to the coming of the mongoose, these birds were still hunted, but owing to the spreading of the reeds over the country, the catch became small.

The birds nested, generally, under the shelter of the dead leaves of the tree fern, never out in the open, and the birds used to take turns sitting on the nest. The natives described the eggs as being white, quite round, generally one, but on rare occasions, two in a nest. They used to hunt for the eggs, and when all hands were out, as many as a hundred a day would be secured. The eggs were hatched under hens in the village, but the saca always went back to the grass and would not remain in the town.

About two years after I had seen the bird, a dependable native who had hunted the birds in his youth, told me that he had seen a pair about two miles away from the place where I had observed them. Twenty was the largest number that had been observed in one flock.

The natives said that the flesh of the saca was dark, and always lean. Its wings seem to have been of some use for the bird is called in that part "the bird that lands on eight hillocks before being caught."

The annual rainfall in that region averages ninety inches.



Feathers, fine as the
fur of a tiger fox
Body, red
Head and back, darker than
breast
Bill and legs, black

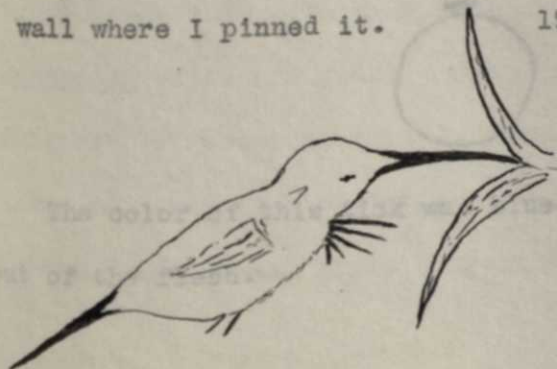
It is commonly said, by whites, that quail are the offspring of imported birds, but this cannot be so for I have tales that run back for hundreds of years mentioning this bird. A Mr. Coster who was one of the first white settlers on the Island of Koro said that quail were present in great numbers when he arrived there and this was many years back.

Humming bird

One evening as I was sitting on the steps, I saw what I took to be a night moth settle on a hibiscus flower. This is a variety of flower with a long, protruding stamen which, at the end, has a bunch of very fine flowers.

The supposed moth kept its wings in rapid motion, while poised before the flower sucking the honey with its long slender bill. I struck the "moth" with a fly switch which I had in my hand, and on picking it up, found that I had killed a small bird. I had seen only the pictures of humming birds but I concluded that this was one. Its slightly curved bill was black, as was the slender, pointed tail; the fine feathers on the breast were a bright red; the shoulders and patch under the tail were of darker tone.

Herewith is a sketch drawn to scale, which I made the next morning, after I found that the rats had eaten the bird from the wall where I pinned it.



1921

Feathers, fine as the
fur of flying fox

Wings, very small

Body, red

Head and back, darker than
breast

Bill and legs, black

Here are some words that show the similarity:

English	Fijian	Solomon
Bad	From tip to tip	tha-gata
is bad	tha-nga	
banana	vudi	vudi
bird	manu or manu manu	manu
boat	waga	va-ka
butterfly	mata-ni-vale	mate-ni-vai
ear	dal-nga	dalinga
father	tama-na	tama
firi	guto = fire	
	wood (Ba)	guto

Personally, I am doubtful if this bird ever existed in Fiji. I remember of seeing a Babito "chief" in the year 1890-1891. The last shooting I did on this river was in 1885-6, and ticks were then plentiful. If a bird was poor, one or two ticks would be found to be the cause of it. I never heard of them in other parts. I was then over sixty years old; now add on the thirty-five years since that time--about Tamavua, Suva, 1886. He had never seen

Ticks on pigeon

Pigeon tick



Perfectly flat

The color of this tick was blue--the same tone as quills pulled out of the flesh. and Fiji, hence the tradition.

Navitileva Bay

Dove

A Fijian brought to me a dead dove which he had shot when aiming at a pigeon. From tip to tip this dove would have measured two and one-half inches; its color was similar to that of the wax-eyes but very pale except on the wings. Its legs were yellow, as was the hard bill.

Yasaca

This bird I have never seen, but from all accounts it differs from the saca. First it was called "Nasataudrau", literally, "in hundreds", meaning that a flock would be of about one hundred. It was said of them that they buried their eggs for the sun to hatch out.

Personally, I am doubtful if this bird ever existed in Fiji. I remember of asking a Sabeto Chief in the year 1890 if he had ever seen one--Sabeto, to the Segatoka River, being the region where the ordinary "saca" was most plentiful. This chief was then a man over sixty years old; now add on the thirty-five years since that time--ninety-five years ago, and he had never seen yasaca. He had only heard the tradition in his youth.

I am inclined to believe that the natives of this region brought the tale with them from the Solomon Islands, where megapodes still are found. See, "A Naturalist Amongst the Head Hunters" by Woodward. Mr. A. Barker has a copy of this book. There is a remarkable similarity of language between that part of the Solomons and Fiji, hence the tradition.

Pig tick



Raised bars

The pig tick is still plentiful in reed country where there are pigs. The ticks are brown in color. They bite horses and humans severely. I have had bites which required three weeks for the hard lump to entirely disappear.

Migratory birds

On the Ra coast, four years' observations; on the Ba Coast, ten years' observations. The small sandpiper "dilio bite" is never absent, the majority of the larger kind leave.

Belos

I have never seen or heard of these nesting on land, although they can be seen at the headwaters of the Wainimala and the Wainibuka. Of course, the headwaters of the latter are, on the average, only five miles from the coast, and of the Wainimala, twenty miles, across country.

A 'piebald bird' used to live around Sabeto for a number of years, but a half caste "Sportsman" shot it. On a bluff near to Sabeto there is a roosting and nesting place where I once counted twenty-nine occupied nests, with the eggs in all stages of incubation. There were generally two eggs in each nest, but I saw only one hatched chick.

An amusing native story about the belo runs as follows:

Once in the olden days, a butterfly was blown away from Tonga and reached Fiji. The butterfly had left a large family back in

Tonga and it wished to return there. After making several vain attempts, it resorted to cunning. Seeing a belo chasing a small shrimp in a pool on the beach, the butterfly accosted him thus,

"Sa gai dua na manumanu balia au sa bau raica e vuravura" "this is the most foolish bird that I have ever seen on earth."

The belo was annoyed, and asked the butterfly why. He replied, "You are chasing one little shrimp in this pool, but in Tonga, where I belong, there would be thousands of danivas in a pool like this and you could eat all day and not finish them."

"Where is this place? Can I fly to it, and will you go with me to show me the road?"

"Yes" said the butterfly, and off they went.

The butterfly, soon tiring, would alight on the belo's back, and stay there while the belo was plugging on against the head wind. Presently, the belo asked, "How much farther to Tonga?" The butterfly flew back a way and replied, "Getting near." "Why are you so far behind?" "Because I am tired."

Back onto the back of the belo came the bebe and this performance was repeated time after time. At last the belo was done for, and asked how much farther off was that foolish land. The bebe replied, "Look! You can see the cocoanuts." "Too late" said Raebelo, and plunked, dead, into the water. Bebe, of course, easily reached the land then. The Fijian did not know the moral, though the man who made up the tale probably had one. Two maxims, or morals can be deduced

freedom, I broke the stones away and allowed it to travel away. It headed straight for the water.

from it; one to make others labor for you; the other that a greedy one will look for trouble and get it.

Crabs

A rare kind of crab, called the "ulia" never exceeds one inch across the back, is soft shelled, brownish in color, and is found in holes on the outer edge of reefs at low spring tides. Kovala, on the Ra Coast is the only place that I know of where it is plentiful. Its flavor is totally distinct from that of any other crab. The first two eaten were sweet, then the second flavor began to assert itself and the last two were not edible--by me, that is, but it in leaves and baking it in a native earth oven. It tastes spicy and a very few satisfies a European, as it is very rich.

Garis

I once had an exceptional opportunity of observing a large crab of this variety, which had cast its shell. I had a small island at the mouth of the Ba River, and at one end, close to the deep water there was a shelving ledge of sand stone, worn into pot holes by the break of the sea.

In poking about this place, I saw a discarded shell alongside a pot hole which was only large enough to hold a flabby red-colored crab. As the hole was covered at every high tide, I built a cairn over it to save it from the mongoose, which, today, do more mischief among the life on the beaches than all the Fijians. I had to pass the crab daily, and it was three weeks before it left the water and I discovered it on the edge of the pot hole. Its shell had not then hardened, it was painfully light, but as it wanted its freedom, I broke the stones away and allowed it to crawl away. It headed straight for the water.

Uga Vuli

I once kept ten of these tethered with magimagi (cocoanut fibre, twisted) for three months, feeding them as much grated cocoanut as they could stow away. I am wrong in stating that I kept them all for three months, for I killed two at the end of a month and two more each succeeding fortnight. My object was to learn if stuffing the food into them would have any effect.

They certainly responded to treatment and grew accordingly. The first two eaten were sweet, then the cocoanut flavor began to assert itself and the last two were not edible--by me, that is, but the native boys relished them. The average increase in weight during the three months was eighteen ounces.

Taming of Kingfishers

At Navitilevu Bay, where I lived upon a hill seven-hundred feet high, a pair of kingfishers came close to the house, toward evening, and roosted on the gate post. I put food there at mid-day, and

since the birds came to it, I kept up the practice for over three years. The last year they allowed me to approach within six feet of them. They used the same nest for the four seasons, the young leaving when fully fledged and not returning.

The nearest water was a half-mile away, down to the valley, and at last they condescended to drink out of the horse cask. The young were never brought to the feeding.

Gela dove

Along the ridge on which my house was situated, there were several clumps of native bush. As I did no shooting myself, I took good care that no one else did, so all the birds became tame, that is, they were tame when I went out alone. I have spent many a pleasant Sunday morning watching the Gelas at play on the ground. The bush there is clear and open and there was usually a flock of eight or ten birds. One bird would strut from one side; then a bird from the opposite; they would meet, then both would retreat. Next, the same pair would advance, but this time they would pass around one another and each retreat to his corner.

This would be the signal for all to advance and take part in the bird quadrille, cluster together, weaving in and out in mimic flight; then suddenly all would stop their play, leave the ground clear and continue their love-making in couples. Then in a few minutes, the whole show would recommence. Not once, but probably a dozen times have I observed this and it seemed to be done always in the same manner.

One day there was a tragedy. I had taken with me a thoroughly trained cattle dog, broken to lie perfectly still, when told to do so, for an hour at a time, with his eye upon me. Suddenly a buck mongoose struck one of the birds, there was a scatter of the covey. A short, quiet "ast" to the dog and he had Mr. Monny, but too late to save the bird.

When the gela was aware of the mongoose, it sprang up straight in the air about three feet, but the mongoose, with a sudden twist, followed, fastening its teeth in the neck. This was enough. I opened up the neck and found the neck bones completely severed.

At any rate I, or the dog at least, had made short work of the mongoose. *so of that of the boy. They must have bred during the*

I was the fool man who had the landing of the first mongoose in Fiji. It was imported from the West Indies by the Rewa Sugar Refining Company, now defunct. The ostensible reason for their importation was that the rats annually destroyed five per cent of the sugar cane. Now, the first noticeable result that the mongoose created was the killing off of practically all the land snakes, which lived in thousands in the cane fields, and whose food was solely rats and mice, devouring the young rodents in great numbers.

The annual loss still goes on. It is now laid to the flying fox, and I have been told that the mongoose also attacks the cane. The mongoose has now turned his epicurean taste to the seeds of 'Koster's Curse' 'Cledemia hirta' and as the hard casing which encloses the seed is indigestible, he is doing deadly work in spreading the curse. *to be the greater mischief makers.*

My place is infested with mongoose, and periodically I have to have it rooted out from under the dwelling house, the seeds having been carried there by the mongoose. From my own observations the imported European rats and mice are as bad as ever but the gentle, unsuspicious native rat "Kucuvi" has practically gone. *flying foxes*

The Kucuvi, in size midway between the imported rat and mouse was of a very affectionate nature and readily responded to kindness. I had a pair (I was living in a grass house at the time) which, on my tapping a tumbler, would climb up, at meal time, a leaning stick that my boy always placed against the food table.

Close to the stick, a plate of food was laid for them, and af-

ter eating they would cruise around the table, not troubling about my presence or that of the boy. They must have bred during the twelve months that I lived there, but though I heard squeaking in the reed walls, they did not bring their young out to dinner.

The late Walter Carew, D. C. on the Rewa had a pair of Kucuci which acted like mine. Mr. Carew was a dog lover and usually had a half dozen dogs in his dining room, but this did not deter the "Kucuvi" from coming to the table.

I shot, over this country, thirty-five to forty years ago, and cannot say that there are less pigeons now, only that the curse does not allow one to travel so fast nor so far, hence the smaller bags. Pigeons are now blamed for the spread of the curse, and they certainly do eat quantities, but when one compares the myriads of flying foxes, each with a capacity at least ten times that of a pigeon, and they are as a hundred to one in number, one cannot help believing the foxes to be the greater mischief makers.

A well-marked case that came under my direct observation, in Navitileva Bay was on the cattle station there. There were two ranges parallel with the coast and the flying foxes used to live in the bush between the first range and the coast. There were two low gaps, or passes, in the ranges, and through these the flying foxes would start, every evening, that is, after the guava crop was finished, to the place where the curse was---some twelve miles inland.

My object, of course, was to keep the land free of the curse, but where it came up only as isolated plants in other parts of the island, through both gaps it was coming up in thousands of plants.

From

From close observation, because I had to spend so much time and money in fighting the curse in these particular passes, I can certainly say that I seldom saw a pigeon pass through. They had no reason to do so for there was always ample berries and water in the two valleys. Why the flying foxes did desert the front and take up their quarters where the curse was plentiful, I can only guess that it was because they did not want to leave the guava area, this being only a four-months' crop, whereas the curse seeds forever.

The cost of rooting out the curse became too great, so I decided to get to the root of the matter. Getting a native, born on the place, who knew where the swarms of flying foxes were, I instructed him how to use a stick of dynamite at the end of a pole. After fixing up three charges he went by special request on a Saturday, the idea being that he would collect the dead and take them to his town for a feast. On Monday morning he turned up to work, calling the muster roll at daylight. I was to leeward of him and I had noticed, before I got near to him, that the other boys were keeping their distance. I got away myself as fast as I could after asking him what had happened. It appeared that the stick was too short to hold at an angle so he got directly below and pushed the pole up into the cluster. He must have caught the best part of half a ton of burst beka over him, and said that he had been washing himself all Saturday afternoon and Sunday. It took over a week to get the pong off of him.

I notice that whereas forty years ago the pigeons nested low, they now select tall trees, their nests, in some cases, being fully fifty feet from the ground. Another instance of birds changing

their habits is to be seen at Madi, where a Mr. Martin put a bank around the low end of a swamp to make a pond for wild ducks.

When the mongoose became bad in that part, the ducks forsook their old nesting grounds on the bank, and now roost and nest in the partly submerged balawa trees that stand on the lagoon. It is very interesting to watch them climb up the now slippery, smooth bank of the balawa.

I have had, at different times, Fiji parrots in captivity. One lived ten years in a large cage, but finally they all died, and upon opening them I found that the livers all had abscesses. The one that lived ten years became a very good speaker and had a lot of sense. I had nothing to do with the training as I was absent from Suva most of the time.

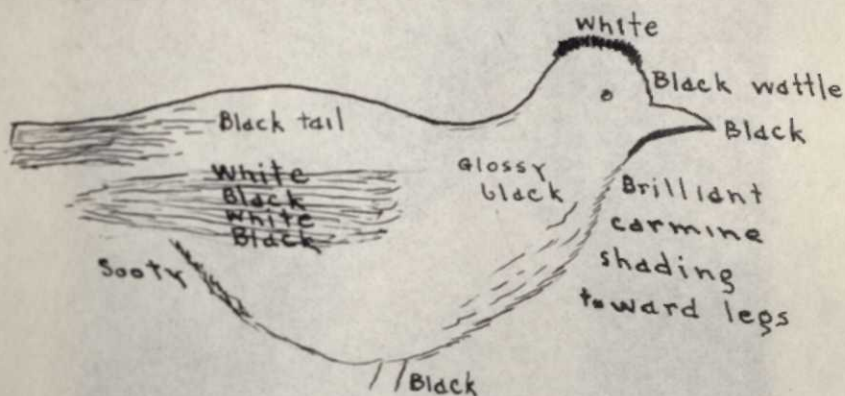
In those days, there was a never-ending procession of natives coming to the door to sell something, and my people had an invariable answer, "segai au sega ni via" and when Fiji turned up with his basket, promptly from the cage came the "No, I don't want it" in Fijian. This bird hailed from Kadavu and was yellow-breasted with dark, or black, rings round its eyes. It had a vocabulary of fifty to sixty words, would imitate a cat, but had a deadly fear of the large cockroach, which by the way, was imported to Fiji in the labor vessels, the indigenous roach being the chap about three-fourths of an inch long.

When the roaches flew into the cage there would be a great outcry, the parrot calling by name for a brother of mine, first running through all his words, then settling down to a study call for my brother.

G. T. Barker, Suva, Fiji Islands.

Nine miles below Suva

1924



Beak, black

Legs, black

Eyes, black, large

Body, shiny jet black

Breast, brilliant carmine

Tail, black

Wings, alternate black & white

Under tail, sooty color

Top knot, white

Length, tip to tip, 3 1/2"

G. T. Barker, Suva, Fiji.



King of Tonga

Wobler!

Bird Notes from Tonga

In an extended survey of the avian fauna of several archipelagos, one begins to feel, after visiting scores of islands, that he has a pretty fair idea of what the next one should yield; provided, of course, it is not too far removed from the studied area.

Having worked the Samoan and Fijian Islands the Tongan group was the next place to visit. As it has one island three-thousand feet high and several others with mountainous aspects, it was natural to expect the birdlife to be quite similar to that of Fiji.

The small 3000-foot volcanic island, however, was found to be barren of trees on its upper parts, and reminded me, above the halfway mark, on the foggy, drizzly day it was climbed, of the tundra covered hillsides in northern Alaska. But even below this treeless zone there is plenty of country that should support both thrushes and flycatchers, two prominent families found in Fiji and Samoa, and apparently wanting in the forests of Tonga.

After a year spent in visiting a hundred islands of Fiji, one is somewhat disappointed when he finds the few species of land-birds that Tonga supports. With one exception, the few species are closely related to Fijian families, but this exception is a notably interesting one. It occurs on only one island in the group and has the reputation of laying the largest egg in the world for a bird of its size. In fact, since I have laid a bird on the ground and placed beside it an egg, I also doubt if any other bird in the world lays an egg as large in proportion to its body as does this one. Its selection of a nesting site is decidedly unusual also.

Before reaching Niaufou Island several persons had told me of the peculiar nesting habits, one informant saying that the several birds using the same nest, always scratched out the lowest egg in the nest and put it back again on top, after her egg had been laid. I had gathered from some conversations that the birds went down to the seacoast and dug a hole in the sand, depositing their eggs to be hatched by the sun's heat, something after the style of seaturtles.

Nevertheless, when my guide on the island headed into the crater in the center of the island, I followed down the steep trail to the edge of the windswept lake where we turned into some bushes to stop before a couple of large holes that had recently been dug at the base of a cliff. The guide got down into one of these and started scratching away the cinders in the bottom but after twenty minutes had dug so deep that his hands were inadequate to stop the flow of material rolling back from the top of the hole. Another native, who had joined us, suggested we go with him and look at some holes that had not been visited recently. We, therefore climbed back out of the crater and passed from the forested hillside across a black lava-covered plain toward some clumps of vegetation near the south shore of the island. Here in the thick forest, the guide divested himself of all clothing and began pulling, with a piece of coconut shell, the soil from another hole, several of which were within a few yards. In a short time he handed up a large piece of egg shell from which a chick had emerged and this was so encouraging that I started off to see if I could not locate a likely disturbance of the ground somewhere.

On the edge of a neglected clearing where a few banana plants

were growing a native joined me and pointing down into a crack in the lava that showed some loose soil, said excitedly "malau", the native name of the bird. A few feet farther along in the crack I tried a bit of digging and, finding the soil loose as if recently filled in, pulled out rocks and pebbles as well as the cinder-like soil. Working in toward the back of a cavity and scratching out the loose soil and rocks, I finally felt a smooth round object and triumphantly hauled out a brown looking egg, somewhat larger than a hen's egg, with a cubic capacity of nearly two hens' eggs the way they run in this region. I scratched out more soil until I could reach no farther into the rockbound quarters that the bird had chosen and then got out and called for the camera, which was resting with the sailor who carried it, some distance away.

In the meantime, the native by had moved on twenty yards and, digging straight down in another opening in the lava, had pulled out another egg, but the nature of that hole prevented search to any great depth. With the camera man, came the first digger, holding an old egg with an open end, quite possibly broken by a bird scratching a rock against it when covering her deposit in the same hole.

Although prohibited by law from gathering the eggs, the natives frequently do it surreptitiously, and one of the ship's members was given one for lunch at the village, and a couple of fresh ones for the Museum.

Having been assured that the bird was rare and seeing the numerous holes where natives had dug for eggs, my first impression was that the bird was on the way to extinction. Further research

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leads to the belief that there is little evidence of scarcity at present.

Our party saw over twenty birds in two days and not half of these were collected. The precipitous walls of the large central crater undoubtedly afford many nesting sites inaccessible to the natives and there are several known holes where the natives dare not dig for fear of the loose surrounding soil caving in on them.

Instead of the heat of the sun hatching the eggs of this bird it appeared to me that the internal heat of the earth was the cause.

The egg I found was over four feet below the surface and the sun's rays touched no place nearer than two feet to the egg.

The soil was warm when pulled out and one would assume from recent eruptions on the island that it is but a few feet, or inches perhaps, to decidedly hot material below the surface.

On two other islands of the Tongan group I scraped away less than two inches of surface covering to encounter soil too hot to handle.

On Fauna Lei Island three separate colonies of sooty terns nest close by the smoking crater and the red-footed boobies raise their young with the sulphurous fumes blowing across them day and night.

On the leeward side of one smoking vent I noticed three bird skeletons and wondered if they had been suffocated in flying through the smoke.

On this island I had a possible explanation of a story repeated by several natives at widely separated islands of Polynesia, to the effect that the little black rail lives in holes in the ground.

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I was struggling along the top of a ridge, frequently breaking through the soft soil into burrows of an absent species of shearwater when suddenly, from the mouth of one burrow I crashed into, out popped a little rail, legging it with surprising speed to some more distant hiding place. No sign of a nest was visible and the bird had retired there, no doubt, for a few hours' rest.

Since watching several of these little rail disappear in the distance from a starting point near me, I am willing to wager that from a standing start, they will cover twenty yards on foot quicker than a tern, booby, tropic bird, or a frigate bird will fly the same distance, from a similar start.

Besides its smoking crater, this island of Fanua Lei interests one because of its extensive rookeries of the sooty terns, the largest one covering nearly thirty acres with a compact mass of birds.

In one little depression a few feet wide in this colony I counted over a hundred young birds walking up the hill to keep out of my track.

The other two colonies were much smaller than this one but each contained over a thousand birds.

The continually amazing thing to me, when at sea near one of these large seabird colonies is the inconsequential number of birds one is able to see from the ship. Of the sooty terns from these colonies two dozen or so were seen together one hundred and fifty miles north of the island, one day before a heavy blow, while less than a dozen would cover the number seen on any one of several days that we were nearer the island.

Though much less in area than Fiji the Tongan Islands afford nesting sites for a much greater number of seabirds than does the

larger archipelago.

Colonies of sooty terns nest on at least three islands, the fairy tern nests on several, the red-tailed tropic bird nests on two at least, the blue-faced booby is well established on one, the greater frigate bird was seen on four and the slender-billed shearwater nests on several while the small-billed shearwater nests on two.

Of these seven species only a few fairy terns were seen as nesting birds on the one hundred islands that we collected in Fiji, and one of the colonies of sooty terns on Famua Lei Island contains more individuals than the entire number of seabirds seen in Fiji.

The volcanic island of Famua Lei, besides having the commonest bird of Tonga also was the stopping place of the rarest, a migrant pintail duck, one fat specimen being taken on the small lake in one of the old craters.

Two small islands in the southwest part of Tonga are resorted to by several species of seabirds also. Only in good weather can they be landed on with safety. It was a fine morning in July when our boat pulled in toward one of them (Hangatonga) to look for a landing place.

Heavy waves were rolling in to break on the piles of rock that had fallen from the cliffs which surround the entire island, but at one spot we noticed an enormous fallen boulder that, at the crest of the swells, was but a couple of feet above the water. Here the boat was slowly worked in until we could jump ashore at the proper moment and scurry up over the slippery surface to safety.

Climbing over and around fallen boulders we soon reached a grassy slope over which thousands of sooty terns were circling.

Downy young birds were cheeping and running about in the grass or stumbling over the rocky spots to find a shelter where their heads, at least, might be hidden. A heavy mortality among the young birds of this colony was noted, many but a day or two old being seen lying about dead. The cause I could not determine.

Wherever the soil was a foot or more in depth we found it honeycombed with shearwater burrows and a mummified specimen picked up by one burrow indicated that probably the diggers were a species that spends the northern summer about the coasts of Japan and Alaska while using the summer months of the southern hemisphere to reproduce its kind on this seldom visited island.

Though less than forty miles from the capital of Tonga it is doubtful if this island is visited once in ten years by any of the natives. Though there are a few scattered cocoanut trees growing on the west side no sign of recent visitors was found. There is no anchorage as was evidenced to us by a couple of whales moving slowly along the shore well inside the France as we sailed close by the west side of the island, sounding for a spot to drop the anchor.

A half-mile beyond the principal part of the tern colony, several circling red-tailed tropic birds suggested nests under the thick pandanus trees which formed a part of the forest we were approaching.

Parting the low over-hanging branches on the outer edge of the grove we heard the cackle of a tropic bird and looking around soon located several nests. In some the young birds were but a few days old while other nests held fledglings nearly

ready to fly.

Although the red-tailed tropic bird will often remain stupidly on its nest even while one plucks the two long central tail feathers, it does have intelligence enough to seek a shady spot for its home.

This is more than can be said for the boobies although occasionally one may see a common booby that has selected a sheltered site rather than the usual one out in the intense heat of the sun.

On the precipitous hillside a short distance above the red-tailed tropic birds' nests, red-footed and common boobies were building nests, the former in low trees while the latter, as always, picked a suitable ground location. Every few minutes, along the face of the cliff above the nesting boobies, a shearwater would whirl ~~along~~ on set wings and when later I climbed to the top of the ridge a couple of them swung back and forth past me, darting within a few feet of my head, and inspecting me as closely as any small bird would.

On Hangahapai Island, a few hours previously, we had found several nests of this species, all of them being on top of the ground, a mere hollow in the loose earth by the side of a boulder or sheltered by a thick bunch of grass from the rays of the sun.

I identified this species tentatively as one that we found nesting abundantly on Ducie Island, some three-thousand miles east of Tonga, in 1922, and was greatly interested to observe that here in Tonga the specimens were all of one type while at Ducie the color scheme of the plumage ranged from very dark

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brown to practically white on the underparts.

This same style of dichromatism occurs in other species of the tubinares here in the Pacific and it is interesting, as well as decidedly puzzling for a collector, at one of these large colonies, with a few specimens selected from hundreds sitting around on the ground, trying to decide from a key, just which species the specimen in hand should be referred to.

Possibly the type specimens of the species came from islands thousands of miles apart, or, mayhap were collected on the ocean thousands of miles from their nesting place. With one dark brown specimen and one light-breasted the describer had little difficulty in forming a satisfactory description for two different species. But when one finds, as on Ducie, a dark-brown bird and a light-breasted one sitting together on the same nest, he concludes a larger series of them might be enlightening to the next serious student of the family and forthwith proceeds to gather a little of the abundant material which is spread before him.

One noticeable feature of the island bird life is the return, early in August, of the golden plovers and the wandering tattlers from the coasts of Alaska or Siberia.

On July twenty-eighth I was standing, in a strong southeast wind on top of Tofua Island, looking down at the beautiful lake in the central crater, when an adult golden plover hurtled past my head, quartering down the wind toward Kao Island, a few miles away. This was the first migrating bird noticed but within a few days both plovers and tattlers began to appear commonly on

of coral lying beside it revealed the vegetation below me and I
the beaches. The strip of beach is about 100 feet long.

These two species are as common here as they are on the is-
lands of French Oceania. The ruddy turnstone is also a common
visitor but the bristle-thighed curlew, the fourth of the regu-
lar migrant shore birds appears to call at Fiji and Tonga in
much smaller numbers than it does in the Marquesas or Tuamotus.

Throughout the South Pacific Islands these shore birds mi-
grate in small flocks as far as I have actually observed them in
passage from one island to another, but how they keep their course
when out of sight of land is beyond me.

Some writers talk of winds and ocean currents as directing
the birds but between Alaska, sixty degrees north of the equator,
and Tonga twenty degrees south, the winds blow from many differ-
ent directions and the ocean currents also have, with their vary-
ing temperatures, variable moods and directions. The sun is one
object which can usually be depended on in the central Pacific,
but even without the sun, in a low fog, over a hundred miles off
the California coast I have seen numerous single shearwaters wing-
ing their way steadily southward toward breeding grounds in the
South Pacific.

When forty or fifty enthusiastic bird banders have been re-
cruited from the inhabitants of the Pacific Islands we may learn
something about ocean migration. While wandering about in the
forests of Tonga we occasionally encountered evidences of the
early inhabitants of the group.

On the top of one small uninhabited island I stumbled over
a large rock and noticed a hole close by me. A triangular piece

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of coral lying beside it revealed the sepulchre below me and I clambered down into the cavity finding it about ten feet long and five feet high lined on all sides with great slabs of coral rock.

It had been rifled long before and contained nothing noticeable to me except its walls. On mentioning the find to our Tongan mate who met me at the boat landing, he pointed to the sloping beach just under the water, and said "There is where the slabs came from." Sure enough, plainly visible to anyone were several square-cut holes in the coral rocks. Similar coral formation occurs on many of the island shores in Tonga and elsewhere and it seems likely that the easily-cut stone was used extensively in olden days.

The weatherworn Trilithon, which is one of the notable sights of Tongatuba Island, being easily reached by motorcar from Nukulofa, the capital of Tonga, is composed of two immense pillars and a great slab of the same material. The burial places of the old kings are also walled about with enormous squares of chiselled rock.

The homes of many of the present-day natives of Tonga are quite distinctive in shape, especially in their avoidance of square corners anywhere in the building. Even some of the churches have concave roofs and walls. Imported lumber and galvanized iron are used in construction to a surprising extent on most islands.

The interior, however, of the humblest thatched domicile may contain as many well-made native mats on the floor and as many yards of artistically painted tapa cloths the more preten-

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tious dwellings. For over a month during our stay in Tonga but very little rain fell and copra making was in full swing. Women and girls were seen at this labor nearly as often as the men and boys.

Tapa making and mat weaving are the principal occupations of the women while the men do most of the field work, open spaces in the cocoanut groves being planted to yams, taro, manioc, corn, etc.

Fat pigs are abundant about the villages of many islands. I counted twenty-six pigs, old and young, and seven dogs about our seated group under the trees at one island, watching us demolish a couple of boiled chickens and a few deliciously cooked breadfruit that his relatives had hurried, to be cooked for our universally known mate.

As in other South Pacific Islands previously visited, when the Tongan chiefs understood our desires they were always interested and invariably gave us permission to go where we wished, frequently sending a guide along to direct us to the particular trail which led to the wilder parts of their island.

This material assistance often helped us to work an island more quickly and thoroughly than we could have done had we tramped off on our own, for often well-worn trails led us through tangled weeds and abandoned holdings to some out of the way patch of taro or yams from which we would find it easier to retrace our steps than to break a trail through the luxuriant growth that always springs up in the cut-over lands when they are left uncultivated.

On account of their names to identify

On account of their nearness to steamship ports, less than forty miles, the Tongan seabird islands will likely be visited in the future, by those interested in tropical seabirds, more often than they have been in the past. There will always be a spice of danger in landing there due to the necessity of jumping from an unstable boat to the slippery water-worn rocks that line the shores of the several islands.

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Vol. 3

Suva, Fiji, June, 1925

No. 17

FIJI

The Colony of Fiji consists of a group of about 250 Islands (about 80 of which are inhabited) situated in the Southern Pacific Ocean between Latitude 15 degrees and 22 degrees South and between Longitude 177 degrees West and 175 degrees East.

The total area of the group is about 7,400 square miles or about the size of Wales and larger than the Hawaiian Islands. The area of Viti Levu, the largest Island, is about 4,100 square miles. The second Island is Vanua Levu with an area of about 2,400 square miles.

Suva, the capital and seat of Government, is situated on the Island of Viti Levu and is distant 1,743 miles from Sydney (Australia), 1,140 from Auckland (New Zealand), and 5,213 from Vancouver.

Missionaries arrived from Tonga in 1835. In this year the first European town or settlement was established at Levuka, on the island of Ovalau, the first capital of Fiji, which is still an island seaport of considerable consequence.

Owing to circumstances too detailed for narration in this summary, claims amounting to about 45,000 dollars were made by the United States upon Cakobau, the King or ruling Chief of Fiji, who disputed the justice of the claims and in any case was unable to meet them. The matter led to a conditional offer by the King and Chiefs, of the cession of the Islands to Great Britain in 1858. British Commissioners appointed to examine the proposal reported unfavourably and the offer was declined by the British Government in 1862. In 1874 the ruling Chiefs again offered the Group to Great Britain, this time unconditionally; the offer was accepted and British Sovereignty was proclaimed by Sir Hercules Robinson Governor of New South Wales. A few months later, in 1875, British Administration was established under Sir Arthur Gordon, the first Governor.

Population and Chief Towns.

The total population by the Census of 1921 was 157,266, made up of 3,878 Europeans, 84,475 Fijians, 60,634 natives of India, 1,564 Polynesians, 2,781 Rotumans, Half-castes, Chinese and others.

The chief Towns and Ports are Suva, Levuka, and Lautoka. Suva is the capital and seat of Government, with a white population of about 1,400, and a coloured population of some thousands. The other towns have small white populations and several hundreds of natives and half-castes.

Government and Constitution.

Fiji is a Crown Colony, the affairs of which are administered by a Governor with a Legislative and an Executive Council. The Legislative Council consists of the Governor and ten Official Members, one Indian representative, seven European elected Members and two nominated native Fijian members.

Physical Features.

The most important Islands are largely hilly and mountainous, rising more or less abruptly from the coast-lands, often to heights of upwards of 4,000 feet. The lower country and much of the hill lands are timbered and fertile, the low lying lands especially having deep soil rich in humus and easily worked.

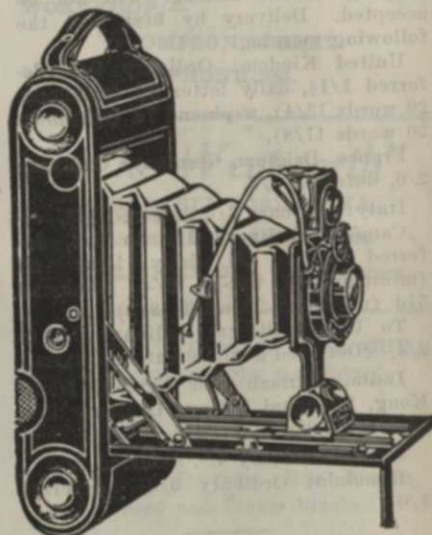
Fiji is a well-watered country with fine rivers and rich in harbours, most of the Islands being surrounded by a barrier reef through which numerous openings lead to safe anchorages protected by natural breakwaters. Many of the rivers are navigable for considerable distances for boats and shallow draught steamers.

Forests.

The forests of the Colony cover about 2,000,000 acres, chiefly mountainous and contain valuable timbers only awaiting systematic exploitation, for house construction, boat building and cabinet making. For the last purpose the timber known as Yaka is much esteemed as a fine furniture and cabinet wood.

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Climate, Rainfall and Health.

The average minimum shade temperature is about 69 degrees F, the average maximum 84 degrees F, rarely exceeding 90 degrees F. The average annual rainfall for Suva (in the wet zone) is about 110 inches, while in the dry zone it averages about 75 inches. The wet season extends from December to March, but even in the dry zone there is rarely a month without rain.

The climate is much cooler than the geographical position of the Islands would lead one to anticipate, and the fevers, and kindred ills, so prevalent in other tropical countries, are noticeably absent in Fiji. These favourable conditions are attributed to the fact that these Islands lie right in the belt of the cool South-east-trade-winds.

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Contains a fine collection of Island curios, etc. Admission free. Hours—Tuesday, Wednesday, Thursday, Friday, 10 a.m. to 5 p.m.; Sundays, 3 p.m. to 5 p.m. Open at daylight when mail boats in port.

HOTELS.

Grand Pacific. Tariff 18/6 per day; suites by arrangement.

McDonald's, 12/6 per day.

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Melbourne, 10/6 per day.

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LEVUKA: Polynesian, Tariff 13/6 per day. Royal, Tariff 10/6 per day.

LAUTOKA: Shamrock, 10/- per day.

BA: Ba Hotel, 10/- per day.

NAVUA: Navua Hotel, 10/6 per day

REWA: Rewa Hotel, 10/6 per day.

BOARDING HOUSES.

Wentworth House, near Girls' Grammar School. Tariff, 10/- per day.

Viti House, Forster Street, 6/- per day.

Bay View, Victoria Parade, 6/- per day.

Waimanu Mansions, Waimanu Road, 8/- per day.

Bougainvillea, Suva Street, 6/- per day.

Waverley, 10/- per day.

CURRENCY.

Under Ordinance XXX of 1913 the Fiji Government issues Currency notes of the following denomination—£20, £10, £5, £1, 10s, and 5s.

The metallic coins are the same as England.

THE FIJI GOVERNMENT OFFICIAL PHOTOGRAPHS

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FIJI TIMES AND HERALD OFFICE.

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Hundreds of beautiful photographs of Fiji are on view at the Tourist Bureau. No charge made for inspection. Don't miss seeing them.

FISHING.

The Fiji waters abound in fish and offer excellent sport. Launches or boats may be hired for any length of time and at reasonable rates. Apply Bureau.

FIJI AS A TOURIST RESORT.

The wonderful attractions of Fiji are inducing an increasing number of tourists to visit these beautiful Islands of the Pacific. It is probably the healthiest tropical country in the world. Malaria is unknown. Fanned by all the winds of heaven, the climate is perfect, and especially during the winter months, May to October, when it may be aptly called "The Riviera of the Southern Seas." Australians and New Zealanders find the Fiji Group an ideal winter resort, for in a few days they are able to transport themselves from the inclement winter season to a land of glorious sunshine and beauty. The climatic conditions make a visit to Fiji enjoyable at any time of the year, but the period already mentioned is the best. Facilities for reaching Fiji are very good. The Union S.S. Co. of New Zealand, the Oceanic Steamship Co. and the A.U.S.N. provide a quick and frequent service of first-class steamers. This Gazette will enable you to form some idea of the places worth visiting. Write or call at the Tourist Bureau for all information required.

SHIPPING.

ARRIVALS.

	June
Ventura, from Sydney	8
Suva, from Sydney	10
Sierra, from San Francisco	11
Niagara, from Sydney and Auck.	12
Aorangi, from Vancouver	18
Tofua, from Auckland	25
Sierra, from Sydney	29
	July
Sonoma, from San Francisco	2
Tofua, from Tonga and Samoa	7
Aorangi, from Sydney and Auck.	10
Sonoma, from Sydney	20

DEPARTURES.

	sails
	June
Ventura, to San Francisco	8
Suva, to Sydney	12
Sierra, to Sydney	11
Niagara, to Vancouver	12
Aorangi, to Auck. and Sydney	18
Tofua, to Tonga and Samoa	26
Sierra, to Vancouver	29
	July
Sonoma, to Sydney	2
Tofua, to Auckland	7
Aorangi, to Vancouver	10
Sonoma, to San Francisco	20

Scientific people find many interesting features in the Fiji Group, and for many years has been frequently visited by geologists, ornithologists, botanists and other scientists.

IMPORTANT NOTICE TO TOURISTS

This publication is intended to help you enjoy your stay in Fiji with a minimum of trouble and inconvenience. Should you fail to find in its pages any information you require referring to travel in Fiji, you are cordially invited to call at the Tourist Bureau, and every assistance possible will be freely given. The Bureau is situated on Victoria Parade, in the Club Hotel Buildings, Suva. Manager, Mr. J. Herrick, Telephone 395, P.O. Box 92. Cable Address: "Tourist," Suva. Codes A.B.C. 5th Ed. and Bentley's.

SPORT IN FIJI.

Visitors to Fiji are made welcome by all sporting clubs. In Suva and other centres horse racing, golf, tennis, cricket, bowling, hockey and football may be enjoyed. The Tourist Bureau will give all assistance to visiting sportsmen.

VISITORS IN FIJI.

Visitors to Fiji have frequently expressed their pleasure and surprise at the size and quality of the trading establishments in Suva and throughout the group. The direct steamship service from England and the Colonies, and the comparatively low tariff for Empire goods, enable the merchants here to supply all requirements at prices that compare favourably with those charged in larger centres of commerce. A glance through the advertisements in this "Gazette" will prove that all your needs are catered for, and visitors may rely on fair treatment and reasonable charges.

INTER-ISLAND & OTHER TRIPS.

Detailed itineraries covering one day to one month or more may be obtained at the Bureau.

Launches for long or short trips may be hired by the day or the trip from £2/10/- per day, according to number of party and distance travelled.

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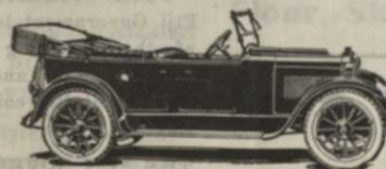
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No. 9.

FIJIAN CANOE.

The Fijian is quite as much at home either in, or on the water, as on land. The native children learn to swim as quickly as they learn to walk. They are fine sailors and are very skilful whether on a large cutter or a small canoe. In by gone days long journeys were made in dug out canoes with outriggers, and to-day there is no more attractive picture than a fleet of native canoes with quaintly shaped sails made of mats, speeding over the blue waters of the tropics seas.



FIJIAN CANOE.

FIJIAN PRINCESSES.

The Fijian race is one of the finest in the Pacific. Tall, well built, and muscular, they are very striking and handsome in appearance and both sexes possess a wonderful stately deportment. They take great pains with their hair wearing it in a well combed bushy style, and as they do not wear hats, their hairdressing becomes a very prominent feature. They have a keen sense of humour and are a very happy people being true children of the sun.



FIJIAN PRINCESSES.

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Frequent and regular Steamer Service to all parts of the Group

TEN DAYS' TRIP TO VANU LEVU	£9 0 0
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FULL ITINERARIES ADVERTISED IN THE LOCAL PRESS.

FURTHER PARTICULARS ON APPLICATION TO THE SECRETARY.

LEVUKA.

The Old Capital of Fiji under British rule; distance about 60 miles from Suva. Regular weekly service by Fiji Shipping Co.'s S.S. "Ad. Keva," leaving every Tuesday. Fare one way 17/6.

The "Sir John Forrest," S.S. "Motusa," S.S. "Suva," and other boats and launches go to Levuka, but they have no regular time-table.

HOTELS: "Royal" and "Polynesian," the tariff at both hotels is 10/6 per day, or £3/3/- per week. There are no by-laws regulating motor car fares, but the charge is about 1/- per mile. There are 17 miles of road, north and south of Levuka, running along the coast. The Lovoni Valley is well worth a visit. Launches can be hired, also the ocean-going aux. "Ovakau" for trips to the many islands within easy distance of the town. Further detailed information may be obtained from Mr. Houghton, Polynesian Hotel, or Mr. Cyril King, Royal Hotel.

NADARIVATU.

This is the Summer Hill Station, situated 2750 feet above sea level, in the midst of beautiful scenery, and is reached from Suva by taking boat to Tavua or Ba and thence by road to Nadarivatu. The journey from Suva occupies about three days. There is a commodious Rest House, where visitors may stay at a charge of 15/- per week for bed, table linen, use of kitchen and free firewood. Requisite supplies may be obtained from a store near by. The cost of travelling to Nadarivatu and return is about £3 per head. For further details enquire at the Tourist Bureau.

LAUTOKA.

Lautoka is 180 miles from Suva. Weekly service leaving Suva every Tuesday. Fare £3/2/6 one way. Once a month the A.U.S.N. S.S. "Suva"

calls at Lautoka for Suva direct, the fare being £2/2/6. Lautoka is in the dry zone with fine climatic conditions. There is one hotel, The Shamrock, tariff, 10/- per day or £3 per week; and also a Rest House near the mill, rates 2/- per meal and 2/- bed. The Colonial Sugar Refining Company have one of the finest sugar mills in the world at Lautoka, and tourists will be greatly interested in inspecting it, also the railway service, which is free to passengers. Golf and tennis can be indulged in and a good motor car service is maintained. Trips to Ba for £3/10/-, and to Nadi £2/10/- are worth taking, and pass through splendid country.

Cutters and Auxiliary Cutters sail to Savu Savu, Labasa, Sigatoka, Dreketi, Kadavu and other places. Particulars re time and fare on application to Bureau.

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THE MAIL STEAMERS

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"Sonoma"

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Maintain a regular three-weekly service between Sydney and San Francisco, calling at Suva, Pago Pago, and Honolulu both ways en route.

Full particulars will be supplied on application to the Company's Agents:

SUVA: MORRIS, HEDSTROM, LTD., Thomson St.

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SYDNEY: V. A. SPROUL Mng. Agent, 12 Bridge St.

SAN FRANCISCO: General Agents: 2 Pine Street.

REWA RIVER.

Most enjoyable excursion may be made from Suva to various points on this fine river. A launch leaves daily at 9 a.m. for Nausori, where visitors may inspect the sugar mill belonging to the Colonial Sugar Refining Co. and crossing the river, will find a visit to the Methodist Mission Schools of great interest. Return to Suva may be by boat, arriving Suva about 5 p.m.; or by motor car.

A launch leaves Nausori daily for Viria, giving a four hours' trip through splendid country. The night may be spent at Viria, and next day a visit to the N1 Samu waterfalls is worth while, or the visitor may proceed a further stage up the river on the mail launch to Tai-Vou, where accommodation can be got for as long as desired. Thus a day or a week or more may be spent on this delightful waterway.

Particulars as to cost and accommodation may be obtained at the Bureau

BA.

Ba is on the northern coast of Viti Levu and about 2 days journey from Suva. The S.S. "Adi Keva" and the launch "Adi Cakau" leave Suva for Ba every Tuesday. Ba has excellent golf links and visitors have no difficulty in being made visiting members on payment of a small fee. There is a good tennis club, with first-class courts. The tennis club also controls a bowling green. Visitors can be made members on payment of a nominal fee. Several motor cars ply for hire, and there is no difficulty in getting around the district which has many places of interest worth seeing. The licensee of the Ba Hotel will be pleased to give visitors every information about excursions.

NAVUA.

Distance about 20 miles. Just over two hours by launch from Suva. Daily service there and back; fare, 5/6 each

way. Time for leaving Suva depends on the tide.

Hotel tariff, 10/- per day. Attractions are a beautiful river and a fine stretch of fertile country.

HOW TO SPEND A DAY IN SUVA.

If you are passing through Suva and have only a few hours to spare you want to make the best use of your time, so we suggest the following:—

1. Take a motor car trip. There are at least a dozen different trips to choose from.
2. Stroll round the town and do your shopping. You can buy anything in Suva.
3. Take a car or walk along the Victoria Parade, and visit the Library, Botanical Gardens and Museum.

Suva has several First Class Hotels. Refreshment and Tea Rooms. Your requirements will be well catered for.

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**"Royal" Aerated Waters
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BEACH STREET, LEVUKA.

First-class Accommodation.
Absolutely the best Liquors.

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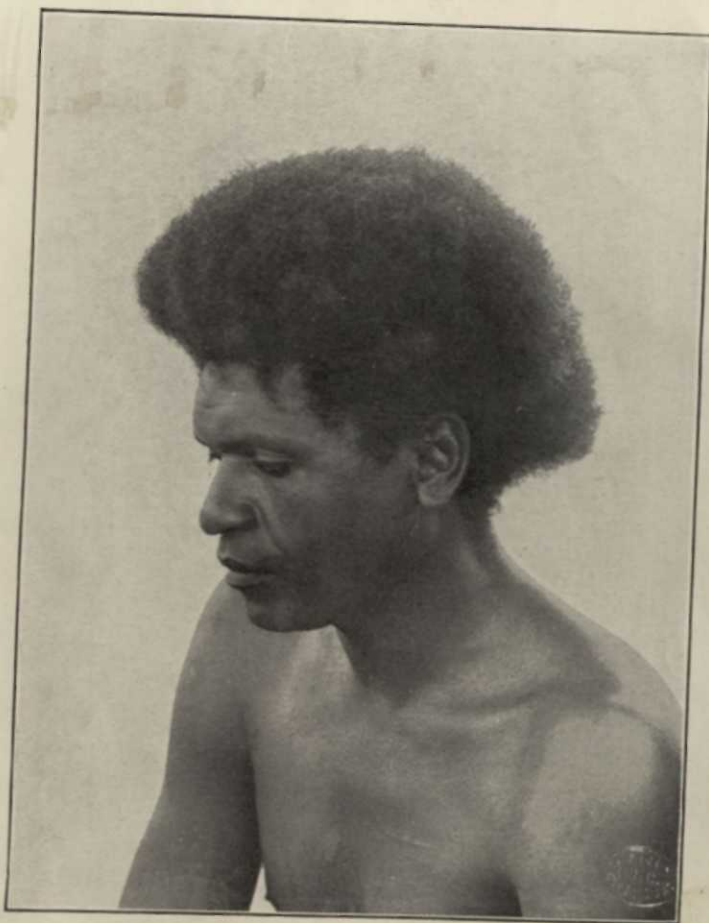
review".

"Ocean-level," *Geol. Mag.*, Vol. 51, p. 261.)

ly neighbours, 114 miles apart, and uninhabited, the one and inhabited, the one canic, are southern. What their geological impossibility to say. few in the Central and Pitcairn islands cturally to the sub- samotu or Low ar-

raphical Review.

FIJI



BRITISH EMPIRE
EXHIBITION, 1924

Pitcairn and Henderson Islands.

These islands lie on the great circle track, half-way between the Panama Canal and Auckland, New Zealand, and, with the exception of Hood Island in the Galápagos, are the only land to be seen over the entire distance. I had opportunity of observing them under favourable conditions from the S. S. *Tekoa* on August 3rd, 1924. The vessel passed within a couple of miles of the north side of Henderson Island about 9 a.m. in very clear weather, while Pitcairn was sighted in the afternoon, a stop of one hour being made within a mile of the shore between 5 and 6 p.m. The vessel was making a great circle course from Balboa to Auckland, and her position at noon on that day was longitude 28° 52' W., latitude 24° 29' S.

Pitcairn Island (longitude 130° 5' 55" W., latitude 25° 4' 0" S.) is well known owing to the romantic story of its occupation by the mutineers of H.M.S. *Bounty*, but apart from the story little is heard of the place. The plan and sketches of the island which appear on Admiralty Chart No. 1113 are from a very old survey, but the physical description in the sailing directions (Pacific Islands, Vol. 3 (Eastern Groups), 4th edit., Hydrographic Dept., Admiralty, London, 1909, pp. 112-114) is good, though little can be deduced from it concerning the physiography or geology of the island. It states: "Pitcairn Island is about 2½ miles long east and west and one mile wide; the entire circuit of the island, with one or two exceptions, is perpendicular. The highest point being about 1000 feet above the level of the sea renders it visible 40 miles distant. The soil is very rich and fertile but porous; a great proportion is decomposed lava, the remainder a rich black earth. The island is thickly clothed to the summit with luxuriant verdure, terminating in lofty cliffs, skirted at their base with thickly branching evergreens." The appearance of the island in approaching it from the north-east is very striking. The cliffed coasts truncate a well developed topography most abruptly, evidently on all sides. Seen from the northeast the cliffs on the southern end of the island attain a height of about 450 feet, while those on the northern end are about 250 feet. The cliff faces are straight and make an angle of about 70 degrees with the horizontal. There are a few low pinnacles and stacks flanking the island close inshore. Above the level of the cliffs the habitable surface sweeps in verdant folds up to the summit. The cliff exposures show a pronounced stratification of the material, which

judging from its colour, a bright reddish brown, its comparatively fine bedding, and the geological feeling about a place seen from a distance, is tuffaceous. It evidently weathers rapidly. The dip ranges from 25 to 40 degrees, in a north-northeasterly direction. Solid rock appears to outcrop in places, especially around the base of the cliffs in Bounty Bay, and there is some appearance of dikes. This structure prevails around the northern corner of the island. It indicates that Pitcairn is not itself a dissected volcano but merely the dissected flank of one. It resembles Gebel Zebayir, off Zukûr in the Red Sea, and the remnants of Krakatoa.

Adamstown, the settlement, occupies a gentle ledge at the top of the cliffs on the middle of the northeastern side. Thirty-eight buildings were counted from the deck of the *Tekoa*, all surrounded by luxuriant cultivation, some of them quite substantial and attractive in appearance. Sixty-eight of the islanders came out to the vessel, in three boats, and all but the women clambered on board.

They bartered sub-tropical fruit (mainly bananas and oranges) and curios—which reveal an interesting fusion of European and Polynesian culture—for wood, old tools, nails, flour etc. They are a healthy, simple, though by no means dull-witted people and reported themselves to be contented and prosperous and between 150 and 160 in number. There is a great diversity of types, a few (especially women) being dark skinned and Polynesian in appearance. One man had straw-coloured hair, but most of them would pass for Europeans. The majority were barefooted but otherwise well clad. They sell and barter their goods to emigrant vessels, for money, clothes, and other necessities; and some of them are saving money. A few men have been away from the island as far as England. They would like to attract a little new blood to the settlement. They are not illiterate and have postal arrangements, though no stamps, and a wireless receiving set of limited range (about 200 miles) which can receive at the rate of ten words a minute.

These people are dependent upon passing vessels for staple necessities of life. They are fortunate in being situated on a main highway of the sea, and they realize it. Nearly all the ships going that way make a call at the island, if only to check their chronometers; but, owing to the difficulty of landing, very few strangers ever go ashore. The population receives no additions from outside. We have here an absolutely isolated group of people whose ancestry is traceable from their earliest occupation of the island, a mixed ancestry of British mutineers and Tahitian women. They should form an important subject for genetic research, and it is hoped that they will not escape the attention of students. Were the direct route abandoned in favour of an outward passage via Tahiti and a homeward one via Easter Island, alternatives that offer slight advantages of wind and current, the standard of life on Pitcairn would return to a much more primitive level.

Henderson Island (longitude 128° 18' 30" W., latitude 24° 24' 45" S., plan on Admiralty Chart No. 1176) is uninhabited and is a dependency of Pitcairn. It is said to be visited occasionally for copra. The sailing directions "Op. Cit." pp 111-112" describe it as follows: "The island is five miles long north and south, 2½ miles wide near the northern end, but tapering off to a point towards the south, and has a flat surface nearly 80 feet above the sea. On all sides except the north it is bounded by perpendicular cliffs about 50 feet high, composed entirely of dead coral, which are considerably undermined by the action of the waves. It appears to be steep to at a short distance all round." Other passages suggest that the whole island consists of rough coral rock and that it is waterless, except for small pools of rain water. Some sheds were erected on the northern side a few years ago. Rockets and detonators were fired from the *Tekoa*, but a close examination with telescope and binoculars revealed no signs of life, nor were the sheds observed. The cliffs overhang in places. The marked under-cutting attains a height of about eight feet above the surface of the sea. Above this, at a height of about 20 feet above sea level, there is a marked level in the cliffs, to be seen even in those that curve inland behind the beaches on the north side. This level is so well defined, and the caves are so unlike the results of wave action (their floors are level and concordant), that they suggest a former relation to ground-water level and a negative movement of the strand, of the kind required by Daly's hypothesis. (See R. A. Daly: "A General Sinking of Sea-Level in Recent Time, Proc. Natl. Acad. of Sci., Vol. 6, 1920, pp. 246-250, and idem: "A Recent Worldwide

Sinking of Ocean-level," *Geol. Mag.*, Vol. 5, 1920, pp. 246-261.)

These two lonely neighbours, 114 miles apart, the larger low, flat, and uninhabited, the smaller high, rugged, and inhabited, the one coralline, the other volcanic, are southern outposts of Polynesia. What their geological relationship may be it is impossible to say. Soundings are regrettably few in the Central Pacific, but Henderson and Pitcairn islands would seem to belong structurally to the submarine platform of the Tuamotu or Low archipelago.

"Geographical Review".

Vitu Levu, Fiji
April 23, 1925.

In afternoon up pipeline and see parrots, and paroquets and hear a couple of thrushes and wrens, as well as kekows. Swifts common, and bulbuls in flocks along river; some or many are young birds. Only four years have bulbuls been around Suva, though introduced at Sigatoka some years ago. Eat mulberries in town, also lantana seeds. Young kingfisher taken, not many noticed. White-eyes common and robin seen in flat base of mountains where tide runs in.

Suva,
April 24.

Out pipeline to intake and hear several golden doves along river. See small flock of strawberry finches feeding along trail and in a patch of high thick grass. Get a male. Swifts common. Several barking pigeons seen. A Chili pigeon flew across native village and lit close by. Twelve bulbuls seen in one flock, common in flat but seldom in forest. Thrushes heard but seldom seen, - lost last two shot at.

April 26. At Martins' house five p.m. Four green paroquets lit in tree in gulch, flew away and returned in twenty minutes; larger than common, long tail. Sixteen seen yesterday.

Nandarivatu
May 1

Arrived last night and rainy all day today. Out at 8:30 till 4 p.m. Got few birds. Heard a paroquet or two singing and saw bird high in tree. Shot it and picked up the long-tail, red-chinned paroquet. Shot three more birds in

Nandarivatu, Fiji

May 7.

205

Thrushes sing some. Chili pigeons feed in bushes along roadside; see three or four daily. Got two small paroquets.

May 8. Shower in P.M. Got two more small paroquets, have to pick them out of tree tops. Have found them in three different trees 100 yards apart. Can tell them from the warblers by their sharp tails. There are three to five of the latter feeding in leaves to one of the paroquets crawling over the blossoms. Small paroquets make mouse-like squeaking while feeding, lower voiced than large ones, but in some calls I am not sure which bird it is. All feeding is above one series of small trees, and I can see but a small clump of end of limbs through holes in foliage. Kleinschmidt's finches birds of heavy forest.

May 11-13. Out along Ba Road and get couple of paroquets on 13th, miss a couple the 12th, and see none on the 11th. Got a Kleinschmidt finch on 13th when I called up a fantail or two. Yellow-bellies seem to have young still feeding, as I hear them calling. Got two long-bills on 13th, none other days. A pair of broadbills seen on edge of forest at 2500 feet, but hear none in forest where cap flycatchers occur. Woodswallow sings nicely in low tones, sitting alone on dead tree, while misty drizzle falls. Rain every day. Two days in fifteen without rain. Brood of young firetail finches along roadside. See but one redbreast parrot, but plenty of yellow ones.

May 14. Out Ba Road few miles; rainy at times. Paroquet taken at 4 P.M. Lay neck back on shoulders to look straight up thru the 40 foot tree to the leaf and blossom clump 20 feet above where the bird is swaying.

May 18. Saw young plumaged duck hawk along stream with flock of dozen chili pigeons. Pair small paroquets flew over also.

May 19. To Ba. Cane and rice fields; flocks of minahs and bulbuls along road; swifts common over cane fields. Single wood swallows on telephone wires along Tavua Road. Thrushes sing in good weather, also other birds. Cosmos plants wild along road. thick and tall brush our faces as we go through them in patches. Sugar cane cut before ripe, stalks dropped into furrow, and Indian cuts stalk into pieces a foot long as it lies in furrow. Mauritiass peas are sused for green maring crop ten months or so between cane growing and return to cane. Rice ripening, is cut with sickle in bundles and these are taken to central spot few rods away and flailed over small table with small sticks. Crevices in table top permit grains to fall below. Under a roof is log with pointed block at one end working on a pivot which works up and down. Women with brush and hands keep rice in center and it is thereby husked. Corn and sugar cane do as well as rice, which has heavy heads. An Indian school, with a dozen children, home covered books, and an Indian teacher was visited. Benches and table in galvanized iron building 10 x 12 feet, only few rods from children's homes. Goats and cattle and few dogs about homes. 120 inches of rain in four months, 45 inches in March at Nandarivatu. At Ba cuckoo on fence in front of hotel. Broadbills common, white-eyes, shrikes and woodswallows about, but minahs and bulbuls commonest. Minahs on goat and cattle backs. Indian men sit around Ba stores as whitemen used to do in U.S.A. about saloons. Lots of silver on Indian women. Houses of grass and rice straw, as well as galvanized iron. 100,000,000 feet of lumber under Fiji Kauri Lumber Co. lease. 20 years since whistling ducks were seen.

Duck of the Rock - duck hawk

Suva, Fiji
June 11

207

Out to wireless station, and in mangrove there I saw three or four long-tailed paroquets. Boy said they roosted in dead tree stub 50 feet high. One bird came over and I saw three others in dead tree farther in mangroves.

June 12. Out again and a single bird flew toward the tree stump, lit also on top of mangrove tree. Shot one flying past. They hang about mangroves. Dozen Java sparrows sitting on fence by rice field; shot five, all young. A little later three adults flew up into coconut tree, and #10 shot got all three. Strawberry finches and families, as well as pairs, are more common than firetail finches.

June 16. Rainy last few days and do not go out. Out to Bau and look for Sasa, but natives on Viwa Island say none remained. Bulbuls and minahs common.

New Zealand
January 14, 1926.

Hen and Chicken Islands

Out in boat after supper. Three or four schools of fish foot or more in length thick on top of water, pursued by big fish, small gulls; gavia shearwaters light on edge of school and swim around with fish. Shot several fish and hurt them. Big fish took one floating dead on top of water. Carneipes at dark circles around island; mile off at sunset, gradually approach shore as darkness comes. Shags swim into rocks and seek shelter when wounded. Light from Moko Hinau is very plain as darkness falls, and carneipes begins to circle higher from water and along cliffs. Weak light on Chicken Island.

Vila, New Hebrides
June 12, 1926.

Wheet wheet wheet is call of warbler at Vila.

Two species of swifts patrol road along waterfront.
Kingfisher, yellow-eyes, warblers, and swifts about hotel.
English sparrow nest forty feet from hotel veranda. Fantail
also in lemon trees, and a rail seen forty yards away. The
rail is said to take hens' eggs here as it does in Samoa.

Pauama Island
August 12

Longtail dove calls wucwah wucwah wucwah.

Shrike comes to tree with small yellow berries every
few minutes and gets six or eight. Cuckoo comes a little while
after I call first time. Thrush and honeysuckers also come.
Red-capped dove drops swiftly into tree and sits looking around
several minutes before feeding.

Efate Island
June 23

Green doves in banyan tree, 300 feet up. Cukuk cukuk
cukuk steady low conversational tone as feeding and resting at
noon. Cuook cuook cu ook, green doves.

Trip from Rabaul to Samarai
February 7

Leave Rabaul at dark and steam out to Pt. Gazelle

Feb. 8. No birds seen on water. Anchor near Ebers
Bay, north side wide bay, for water at noon and ashore to collect
while boys get water. I go up to small village 1000 feet up,
three miles, and all natives run away when I appear before them.

Not a bird secured till I return to beach and get a white-eared kingfisher flying past when I shot at a golden plover on beach. Saw what I took to be creamy pigeon and saw a Finsch's pigeon also. Small birds scarce.

Feb. 9. Past Cape Orford, south side Wide Bay. A large flock young and old sooty terns fishing few miles off; several streaked and sooty and wedgetail shearwaters seen also, and a frigate bird with them. Calm and engine going in daytime.

Feb. 10. Light wind in A.M. and start engine at sunup. Light fair wind during night.

Feb. 11. Light winds and smooth sea. Few birds. Sooty terns.

Feb. 12. Squalls from NW and rain; thirty miles from Normandy Island at dark.

Feb. 13. At Normandy in morning and see small islands scattered ahead. Many small clearings on low slopes of hills along shore. A canoe and native sail passed astern in afternoon. Anchored as rain came at dark near Basilask Island.

Feb. 14. Up anchor at daylight and in to Samarai at 10 A.M. Stop a couple of hours and over a couple of miles to slip where we wait a day for another boat.

Feb. 15-25. At slip, and sometimes get a little time to go in the bush short way and shoot a few birds. Found a nest of black wren in grass near mangroves, bird flushed as I passed. Saw several of these little birds. Of five doves shot four species taken. Birds of paradise are common, but none noticed with plumes. This is the common kind with bunch of golden plumes. Crows caw with drawl at end of forth or

fifth caw. Birds much commoner than at New Britain where I went inland three miles.

Feb. 27. Sent France to Hamlin at Kieta and I returned to Rabaul.

March and April

Collect around Rabaul and finish up with Whitney Expedition, leaving Rabaul and reaching Sydney on May 4, 1928, where I await letter from Museum re another collecting trip.

Since leaving California in September 1920, on Whitney South Sea Expedition have collected for the American Museum of Natural History over 30,000 bird skins from the South Pacific, this total including all those collected by associates on the trip.

