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THE HAROLD J. COOLIDGE EXPEDITION TO LAYSAN ISLAND, 1961

By Miklos D. F. Udvardy [1]

In July 1959 an expedition of four members (G.D. Butler, Jr., Charles W. Daniel, Richard E. Warner and myself) visited Laysan Island in the Leeward Hawaiian Chain. Entomological study, survey of the flora and vegetation, census and observational work of monk seals, and bird studies were the principal tasks during eight days of stay. While the expedition members decided that the scientific results should be jointly published, it also soon became apparent that more research in a different season would be very advantageous. The opportunity came with the calling of the 10th Pacific Science Congress to Honolulu; from among the many specialists already gathering in the Mid-Pacific, it seemed that an appropriate group could be easily recruited. Dr. H.J. Coolidge, the General Secretary of the Congress adopted the idea of a special, post-Congress expedition to Laysan, and through laborious correspondence cleared the transportation problems that always face scientists who wish to visit these remote islands. The 4th U.S. Coast Guard District, as in earlier years, generously provided our transportation. For the practical preparations and for leading the expedition, Dr. Coolidge mandated Rick Warner who also organized and led the above mentioned 1959 undertaking, and participated in two earlier expeditions (Warner 1958, 1959).

On the afternoon of September 2, 1961, we were ready to board the airplane which the U.S. Coast Guard generously provided, together with all further vehicles of transportation. The expedition consisted of the following members:

Dr. George D. Butler, Jr. (University of Arizona, Entomologist)
Edward C. Jestes (University of Hawaii, Geologist)
Dr. Charles H. Lamoureux (University of Hawaii, Botanist)
Dr. A. Starker Leopold (University of California, Vertebrate Zoologist)
Dr. Miklos D.F. Udvardy (University of British Columbia, Vertebrate Zoologist)
Dr. William Usinger (University of California, Entomologist)
Dr. Martin J. Vitousek (University of Hawaii, Geophysicist)
Ronald L. Walker (Hawaii, Game Biologist)
Richard E. Warner (University of California, Vertebrate Zoologist)
David Woodside (Hawaii, Game Biologist)

This assemblage was to become, during the next few days, a closely knit company of friends and collaborators, and those who did not already know each other had their first opportunity to get acquainted, while the swift plane flew us out over Kauai, Niihau, and Nihoa, all of these islands in clear view, to French Frigate Shoal, i.e., to Tern Island.

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1) University of British Columbia, Vancouver, Canada. The author's participation was financed by a research grant of the National Research Council of Canada.

This sand bar has been completely transformed into an airfield. Natural and adventitious vegetation covers only a 100-150 foot wide strip on the perimeters, where the sand is not packed and cemented together. The sea birds did not land at all on the island; a brown booby, a sooty and a fairy tern were the only ones sighted. A dozen or so plovers used the runway, and about twice as many turnstones were in the sparse vegetation and the open sandy rim. That the original inhabitants still make desperate efforts to utilize their former domains was shown by the carcass of a hatching sea turtle that lay on the runway side. The entomologists and the botanist were happier than we vertebrate people and the geologist. Not having much to do on this devastated island, we transferred ourselves into motor boats and boarded the U.S.C.G. Cutter "Ironwood". This lay at anchor at a safe distance from the coral reef and already housed the heavy gear and equipment of the expedition, which we had previously loaded on board in Honolulu. Captain Stewart Beckwith welcomed us on his ship and we soon made ourselves at home among the officers and sailors, whose hospitality and care we were to enjoy for the coming nine days.

We proceeded to Laysan in excellent, bright weather the following day, and on the morning of September 4 landed on the island according to plan. The usual campsite near the single ironwood tree, where the guano mining settlement once stood, was now occupied by four men, belonging to the Military. I must confess that we were not at all pleased to see a camp raised on this treasure island of the naturalist. Laysan is one of the very few uninhabited, coral islands in the mid-Pacific which harbours a unique fauna and flora, to a great extent consisting of endemic species, which may be endangered by the fortuitous introduction of enemies, parasites or competitors. Whatever lands here, without man as a carrier, will become a natural part of the island biotic community. One of the important tasks of our expedition was to gather data on how the island fared after having once been almost totally devastated by an invasion of introduced domestic rabbits. Among such circumstances every landing has its hazards, and every human disturbance might alter the succession of recovery processes of Laysan. Furthermore, as we learned, no fumigation or similar quarantine measures have been taken in the past. The blame falls not upon the people who use the island - they were sympathetic to our goals, and after our explanations, kept their interference with the island biota to the necessary minimum. The blame falls on those who are administering Laysan, but who are probably not aware of their important duty to preserve this nature sanctuary as intact as possible.

On September 4th camp was established and exploratory walks were made, especially by those six members who were enjoying their first visit to Laysan. Four of us, in two groups, walked around the beach to census the rare Hawaiian monk seal at noontime when the majority were loafing on the beach. I was fortunate to see the only adult Laysan albatross which was still visiting the island; six or seven more fledgings were seen but these had been completely abandoned, and died during our stay. The game biologists who covered the east side of the island sighted two sea turtles, but no nest was found in spite of repeated searches. We saw turtles, one of them a half-sized youngster, on three later occasions. The seals kept away from the landing beach for the most part, where they have seen human traffic during the last four months. This first census counted 225 seals, adding another remarkably stable figure to the previous ones. In the spring of 1957, 233 seals were counted from the air by Kenyon and Rice (L.c.); in the spring of 1959 Smythe (L.c.) found 224 seals hauled out around the island; in June 1959 our two total counts resulted in 212 and 234. One question is, of course, whether a number of seals are likely to be fishing in the water at the time of the censuses: the establishment of their total number is a task which the scientific papers, resulting from this expedition, will tackle.

Those who ventured across the beach crest, towards the interior of the island, noticed that a large lake occupies its centre. The strongly saline "lagoon" is surrounded first with a belt of Sesuvium portulacastrum (akulikuli), then with Cyperus rushes and other vegetation which indicates non-saline conditions. The 65 year old German monograph of the island, by Schauinsland (L.c.) tells of brackish-water ponds from which the onetime settlers got their drinking and kitchen water supply. These

were absent in 1959; now in 1961 several such ponds were found, and the water level of the lagoon was also higher, indicating a wetter period some time between 1959 and 1961. Some other changes were also noticeable in the vegetation, especially the fact that the low, round mats of Nama sandwichensis now grow on the majority of the big, open sand dunes at the North and Northeast of the island, which still in 1959 were almost completely bare of any vegetation. Nama binds the loose sand, and some signs were seen that this pioneer plant also enables the bunch-grass to get a foothold where the Nama mats grow closely together. But only future visits will show whether this marked change is an ephemeral phenomenon, due to the fluctuations of climate, or whether it is a true successional step in the revegetating process of Laysan. Either way, it is an indication that these sand barrens can be and are vegetated naturally. This is a good reason for not "improving" the vegetation of Laysan, as some would wish, in order to harbour more albatrosses, so that a compensation for the inevitable breeding losses of Midway Island might occur. Laysan does not need, and never should be allowed, any such interference; if it is left alone, it will maintain a large enough natural population of the Laysan albatross to save the species from extinction. Its black-footed population is also fairly substantial, as counts of the 1950's indicate.

Between the 5th and 9th of September each of us was busy with the study of the island. New projects, such as geological study and geophysical exploration were started. Vegetation mapping proceeded. A new species, the Messerschmidtia tree - here a small bushy individual - has been added to the list of 21 plants collected in 1959. The native bird fauna and the seals were censused several times. Dr. Usinger found the endemic bugs which he described and named from earlier collections decades ago, and now was able to study them from several angles. George Butler and he were the busiest fellows during the day and for most of the night, since the insect fauna is quite rich even at such a lonely place, and they could never be sure when a new, hitherto uncollected or even unknown form would turn up in the light of their collecting lamps, in their nets, catchers, umbrellas or even in the tents of innocent bird watchers or seal catchers. Martin Vitousek had a vacuum-cleaner-sized and shaped, white enamel instrument, so heavy that only a giant like himself could carry it, and this was soon nicknamed Dr. Vitousek's fifth "$10,000 baby" (the fourth, a real one, was born the night before the expedition started): with what care and caution did he carry this sensitive balance, mostly on his own shoulders, along the beach or up the sandy beach crests, to take a measurement here or there! He was searching for the volcanic core of Laysan Island which is buried under the coral sand, or perhaps under the thundering reefs, the existence of which had been already surmised by Schauinsland, and we now hoped that the "baby" might pinpoint its real existence and location.

The bird-study focused around the Laysan duck or "teal", as this small-sized, oddly-coloured endemic mallard has been called popularly. Rick Warner spent his nights during the 1959 trip watching the nocturnal feeding of the ducks in the heavy Boerhaavia belt near the lagoon. He and Dr. Leopold now concentrated on the conspicuous tameness of these birds. Usually the ducks were the first in discovering the observers and headed straight towards them, sometimes only stopping at a distance of 20-25 feet. Other life history aspects were clarified, at least partly, during our stay. The ducks were previously not known to undertake flights across the island; they were also taken as weak flyers. Yet Ed Jestes, the geologist, reported on the second evening that, as he was hammering at some coral rocks on the southwest beach, a flock of ducks flew overhead and landed nearby. This place became a favorite observation post of the duck workers, since up to 45 birds visited the tidal puddles regularly every afternoon and loafed there, the mated drakes chasing others from the vicinity of their mates. Excellent opportunities for photography arose. When a yearling seal, awakened by the whirring of my camera, crawled down the beach among the ducks the latter showed no special concern.

Field work on Laysan is quite strenuous. The swarms of flies were now a trifle less troublesome than in June 1959; the sun was equally baking from 7 A.M. to 7 P.M.

One needed a great amount of self-discipline to work constantly in the middle of the day; if note-writing or other excuses presented themselves, the lofty tent of the game biologists became crowded with exhausted scientists. We also ate our lunches there. Dinner was heated on a Coleman-stove (we lived on combat-rations), with the disappearance of the flies at sun-down. After a chat, exchange of experiences and the reading of pertinent details of Schauinsland's old account, night work started. The checking of shearwaters and petrels which crowded noisily around their innumerable burrows; the catching of ducks, and plovers by flashlight for banding; the emptying of the insect traps around the glowing mercury-vapor lamp, which cast its light a couple of hundred yards around. We admired the eery sight of hundreds and hundreds of Bonin-island petrels and wedge-tailed shearwaters, which were swarming in the blue-green light, acquiring a phosphorescent appearance and steadily groaning, moaning, shrieking and crying. These activities only subsided about midnight. It was then that Dr. Vitousek finished his daily conversation on the short-wave radio with his family in Honolulu, and shut off the generator, extinguishing all lights in camp. There was left only the flickering remote flashlight-shine of some of us who, delayed far away and now heading home, were meandering around the shearwater holes, now and then breaking through kneedeep into that unsuspected and unavoidable one which lurked at every twenty or thirty steps.

On the morning of September 10th, the "Ironwood", which had lain at anchor outside the reef during the preceding days, blew its horn, and sent a beach party to retrieve us. Laden with experiences, sunburnt and enthusiastic for the paradise of scientists which we had been fortunate enough to explore, we left, reluctantly. For a short while we felt in the seventh heaven, having shade of a covered deck, and a cool breeze around us, cold drinking water, civilization.....but soon the scientists gathered in the officer's mess, to plan and divide the task of writing up our experiences. We were soon to disperse into at least four different parts of the North American continent. While we were together, we decided on printing all available information about Laysan in the form of a monograph. Not the least task will be to point out the scientific value of this unique island, and to offer concrete recommendations for its maintenance while it is not too late.

Between September 12th and the 14th our party stayed on Kure Island, the furthest west of the Leeward Hawaiian Chain, to await our transportation home. Kure is a small island which used to be overgrown with a dense naupaka thicket and tall bunchgrass. The improvement of this island for an albatross nesting ground was suggested so that a population reservoir might be created to compensate for the losses on Midway. As a matter of fact, albatross "runways" were bulldozed back and forth across Kure a couple of years ago, and the increase of the "gooneys" was awaited with great expectation. However, all this has now gone. One third of the island has been converted into an airstrip; the other part has in its centre a 600 foot-high aerial tower - the holding cables of which present a serious hazard for the navigating sea-birds. The ground is partially cleared under the cables, so that the native habitat exists only along the beachcrest of Kure. The new buildings and modern facilities of the Loran station made our stay very comfortable: a radio, air-conditioned hall, pool and table-tennis games, hot and chilled beverages....what a contrast to "roughing it" on Laysan! -- Yet, I would have preferred to see even this island in its unspoiled condition. Now only the Leeward islands to Laysan, Lisiansky, Nihoa and Necker can be considered to have escaped more or less the ruining effect of 20th century civilization.

While on Kure the scientists were busy again, collecting plants, insects, magnetic data and making observations on the island birds. Almost all of the Laysan sea birds of this season were found on Kure: three boobies, two shearwaters and a Bonin island petrel, large numbers of frigate birds, Hawaiian and common noddies, fairy terns (rare) and red-footed tropic birds. Some golden plovers, tattlers, many turnstones, and several bristle-thighed curlews, representing the wintering avifauna, were recorded. The seals on the remote beaches of Kure were as bold as those on Laysan. It became evident that the curious habit of climbing to the beach-crest in the early afternoon

is common to seals of both Laysan and Kure Islands. Scaevola grows to more than six feet here and the seals sleep in its deep shade where they are protected from the flies! Scaevola grows to a height of only 2 - 3 feet on Laysan, but the habit must have originated when this island also was covered with higher Scaevola thicket.

These were the impressions of one man of the Laysan team. Every one of us might have viewed things slightly differently, and become impressed by different wonders of nature. However, we all had developed a common love for these hot, glaring, wild, and remote islands, where nature still has the upperhand, and man can study how plants and animals fit together to form a primitive biotic community, similar to those in early times when plants and animals evolved the means of living together in those hot and barren ancient continents.

References

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Smythe, W.R., 1960. Elepaio 20: 78.
Warner, R.E., 1958. Elepaio 19: 8.
Ibid., 1959 20: 16.

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A HEARTY WELCOME TO OUR NEWEST MEMBER, Mrs. Margaret C. Johnson, 229 Paiko Drive, Honolulu

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DECEMBER ACTIVITIES:

December 11 - Board Meeting, at 3653 Tantalus Drive, at 7:30 p.m. Members are always welcome.

December 18 - Annual Meeting, at the Honolulu Aquarium Auditorium at 7:30 p.m. Business will consist of election of officers, discussion of increase of dues, re-publication of "Hawaiian Birds", and completion of arrangements for the Christmas count. All members are urged to be present for this important meeting.

December 31 - CHRISTMAS BIRD COUNT

The annual Christmas bird count will be held this year on Sunday, December 31st. This is an event to which we look forward with keen interest, always hoping to better our record in the number of species and individuals. It is great fun: there is room for all to participate. You can take an easy trip, or a hard one; one that lasts all day, or only part of a day. Look over the areas listed below, choose the one you would like, and telephone to the leader to find when and where to meet. Participants whose names appear in the Audubon Field notes are asked for a fifty-cent contribution to help defray the cost of printing -- that is a cheap day's entertainment. Grenville Hatch is chairman; call her for general information.

Group A: Leader, Michael Ord, Tel. 587-328. Areas: Ulupau, Kaneohe Marine Air Base, Kaelepulu, Salt Lake, Sand Island.

Group B: Leader, Blanche A. Pedley, Tel. 982-924. Areas: Manoa Falls, University Campus, Paiko Lagoon, Kuliouou Beach, Kuapa Pond.

Group C: Leader, Al Labrecque, Tel. 983-104. Areas: Tantalus Trail, Punchbowl Memorial Cemetery.

Group D: Leader, Ann Halstead, Tel. 982-438 (Evenings). Areas: Aiea Trail.

Group E: Recruiter, Irma Botsford, Tel. 99-0811. Residential Areas. Those who can't spare the time, or feel disinclined for a long count, please take a walk around your own neighborhood, and swell the count of residential birds. We will mail you the simple report form.

Time and place of the dinner following the count will be announced at the December meeting or call Grenville Hatch, Tel. 727-251.

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