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THE SOCIETY'S NEW FIELD CHECK CARD

Since its founding 15 years ago, the Hawaii Audubon Society has been very fortunate in having the loyal support and leadership of Miss Grenville Hatch. As a charter member and elected officer of the Society, and as leader and chief recorder on field trips, hers has been the guiding voice during Hawaii's most turbulent and eventful period. In appreciation of her devoted service, and because her knowledge of Oahu birds and her determination to keep field records were unmatched in the Society, this check card is most gratefully dedicated to Grenville. Although she is now in Southern California, the best wishes of the Society go to her, and with them the hope that she may soon come back and use this card in the manner in which she would have so enjoyed doing in times past.

The Hawaii Audubon Society is pleased to announce publication of a Field Check Card for Hawaiian birds, a copy of which is enclosed with this issue of the Elepaio. The card is designed to serve two purposes: (1) to provide a convenient and standardized form for recording birds observed on field trips, and (2) to give beginners and newcomers some idea of the birds they may reasonably expect to see here. Additional cards may be purchased from the Society or from the Bishop Museum at 5¢ each or 6 for 25¢. Mail orders for less than \$1.00 should also include return postage.

Hawaiian names for the birds have been given preference on the card wherever possible, but other commonly used names are also shown. A common name in quotation marks indicates that the bird is not related to the mainland birds of the same name. Spaces for date and localities visited have been arranged so as to be easily read when the cards are filed in a standard 4x6 inch file box.

The card lists all species known to occur regularly in the Hawaiian Islands, including the leeward islands of the northwest chain. Only full species have been considered, except in the case of the Hawaiian and Laysan Mallards, whose subspecific status is still not satisfactorily settled, and which are readily separable in the field in any event. Amadon's classification of the native species has been followed exactly.

The guiding principle in compiling this list has been to show conditions as they exist at the present time. An attempt has been made to indicate the status of each species on each of the main islands--- an ideal that may only be approached through intensive up-to-date field work on each island. Although the compiler has had opportunity for recent extensive field work on Oahu, his personal experience elsewhere in the Territory has been confined to 3 days on Molokai and periods of one to four weeks each on

Kauai, Maui and Hawaii. Other persons who have recent first-hand experience in the islands have been consulted personally whenever possible, particularly the following whose generous assistance is very gratefully acknowledged: Miss Grenville Hatch for Oahu birds; Dr. Frank Richardson for a critical examination of the seabird listings and many helpful suggestions; Mr. Joseph Medeiros of the Territory's Fish and Game Division for Molokai, Lanai and Maui birds; his colleague, Mr. Dick Woodworth, for the game birds throughout the islands; Mr. Joseph King of Honolulu; Mrs. Helen Baldwin of Hawaii; and Miss Myrna Campbell of Kauai. Since it is now virtually impossible to visit Niihau, the listings for that island have been based on the 1951 article by Fisher, and are presented here for general interest only.

It should be emphasized that the listings are merely the compiler's judgment of the consensus of opinion, and they should be considered provisional and subject to change as new information is brought to light and as conditions change on the various islands. Persons with recent field experience or general knowledge are earnestly requested to make suggestions and comments to the Society for use in future revisions.

Information on the more recent status of birds in Hawaii may be found in the following books and articles which have been consulted in the compilation of the check card. References to older works which describe distribution in historical times may be found in Munro, pp. 12 and 13, and in the extensive list of literature contained in Amadon.

General:

- 1944 Munro, G.C., Birds of Hawaii. Honolulu, Tongg Publishing Co.
- 1950 Amadon, D., The Hawaiian Honeycreepers. Bull. Amer. Mus. Nat. Hist., vol. 95, pp. 155-262.
- 1941-42 Bryan, E. H., Jr., Check List of Birds Reported from the Hawaiian Islands. Publ. serially in the Elepaio (vol. 1 no. 12, April 1941 to vol. 2, no. 12, June 1942).

Specialized:

- 1954 Richardson, Frank, Report on the Two Native Passerines of Nihoa, Hawaii. Condor, vol. 56, p. 224.
- 1953 Baldwin, Paul, Annual Cycle, Environment and Evolution in the Hawaiian Honeycreepers. U. of Calif. Publ. in Zoo., vol. 52, pp. 285-398 (Distribution on Hawaii I.)
- 1953 Richards, L.P. and Paul Baldwin, Recent Records of Some Hawaiian Honeycreepers. Condor, vol. 55, pp. 221-222.
- 1951 Fisher, Harvey I., The Avifauna of Niihau Island, Hawaiian Archipelago. Condor, vol. 53, no. 1.
- 1950 Richardson, Frank and Harvey I. Fisher, Birds of Moku Manu and Manana Islands off Oahu, Hawaii. Auk, vol. 67, pp. 285-306.
- 1949 Richardson, Frank, The Status of Native Land Birds on Molokai, Hawaiian Islands. Pac. Sci., vol. 3, pp. 226-230.
- 1949 Schwartz, C. W. and E. R. Schwartz, A Reconnaissance of the Game Birds in Hawaii. Honolulu, Bd. of Commissioners, Agriculture and Forestry, T. of Hawaii.
- 1946 Fisher, Harvey I., War and the Birds of Midway Atoll. Condor, vol. 48, no. 1.
- 1944 Baldwin, Paul H., Birds of Hawaii National Park. Audubon Mag., vol. 46, pp. 147-154.
- 1944 Bryan, E.H., Jr., and J. C. Greenway, Jr., Contribution to the Ornithology of the Hawaiian Islands. Bull. Mus. Comp. Zool., vol. 94, no. 2, pp. 77-142. (Includes known records of accidental species)
- 1944 Blackman, T. M., Birds of the Central Pacific Ocean. Honolulu, Tongg Publishing Co.
- 1933 Caum, E. L., Exotic Birds of Hawaii. Ocnl. Papers Bishop Museum, vol. 10, no. 9. (Summary of known information on introduction of foreign birds)

1928 Alexander, W. B., Birds of the Ocean. New York, Putnam.

Good color plates of the more common Oahu birds are contained in:

1940 Northwood, J. D'A., Familiar Hawaiian Birds. Honolulu.

Excellent color plates of most of Hawaii's fresh water birds and shorebirds may be found in:

1947 Peterson, R. T., A Field Guide to the Birds. 2nd edit., Boston, Houghton Mifflin Company.

A WHITE TERN IN CAPTIVITY

By Grenville Hatch

On December 26, 1953, I received a telephone call from Paul Breese, the Director of the Honolulu Zoo, asking if I would like to take a couple of "borders" for a few days -- two white terns, one adult, one immature, which he had acquired on Necker Island on the 21st, hoping to put them in the zoo. Their beauty and appealing, gentle ways made them a most desirable exhibit, but their food habits made them a problem.

The white, or as it is often called, the fairy tern, is of all birds that I have seen, the most beautiful and appealing. It is a small tern, the adult measuring only 11", but with delicate, pointed wings extending for some 28". The adult plumage is pure white, with a satin-like sheen, produced by the very soft, finely divided character of the feathers. The black eyes are unusually large, appearing even larger because they are surrounded by a narrow ring of fine black feathers, with a larger dot of black at the inner corner of the eye. The eyelids are fascinating. The eyelid itself seems flecked with translucent white dots; the edge of the lid has a row of tiny white feathers, within which lies a row of delicate black feathers. The bill which appears entirely black at a distance, actually has a deep blue base. It is long for the size of the bird, measuring $1\frac{3}{4}$ " in the adult, and is narrow, with the lower mandible a fraction of an inch longer than the upper. The black and white color scheme is further carried out by the black skin of the body. The short legs are steel blue, the webs of the feet delicate pink.

The young tern, whose age we guessed as about one month, was 9" in length, with a wing span of 25". The bill, which was entirely black, was only $1\frac{1}{4}$ " long. He never attained the proportions of the adult, being after five months time, 10" long, with a wing span of 27", and a beak measuring slightly over $1\frac{1}{2}$ ". The immature plumage was tinged with brown, and grayish-brown down was still evident over the body and wings. The down gradually disappeared, the last vestiges noted about five weeks later. The blue of the bill began to be seen clearly about the same time. The change in the length of the bill, which seems slight on paper, was the most marked change in his appearance, aside from the loss of down. The shape of the head seemed altered to a small head, with a large bill.

The birds had been on board a coast guard ship for three days, where the only available food was chopped fish, which both birds refused. It seems likely that fish without scales cannot be swallowed, since at no time were we able to persuade them to take cut fish. On reaching the zoo, the birds were given mosquito fish which they took from the hand. By this time the young tern was so weak that his survival seemed doubtful, which brought about the telephone call resulting in their transfer to my care. Happily this came during the Christmas vacation, so that I was able to devote much time to them for the following week.

Bringing two terns in a fairly large (and odorous) cage into a tiny apartment has its drawbacks. Had I known as much about terns then as I do now, I would have released both of them in the house immediately, for they are apt to choose the highest perch

possible, then sit, with occasional wing exercises, and a rare flight now and again. The adult was kept in a cage until his release, although the young tern was given the freedom of the house almost immediately, being at this time unable to fly.

The young tern for some days shivered almost incessantly. I put him in the sun, sometimes in front of an electric heater. Part of the time he walked away from the heater, sometimes he seemed indifferent, but occasionally he stretched himself luxuriously, in obvious enjoyment. It would be most interesting to know whether such shivering is a characteristic of the young terns. I feel that possibly the shivering was, at least in part, a symptom of nervousness, for after the first few weeks it stopped, except for an occasional bout.

We (the Zoo caught fish for the project during most of the entire five and one half months) fed the two birds live mosquito fish for several days. This had its problems. I had not yet learned how to keep the fish alive and was constantly running out of fish. Only fish of a certain size would be accepted. Anything less than 1" was refused, over $2\frac{1}{2}$ " were also refused. Occasionally certain fish would be rejected by both, for no apparent reason. Both birds ate readily from the hand. One day's intake for the adult was 66; for the young, 42. As it seemed too difficult to keep the birds in live fish -- little did we think that we would be catching fish for months -- we shifted to freezing the fish as soon as caught. They took the frozen fish as readily as live ones, if whole. Anything with protruding entrails was discarded. The adult took a few fish from a dish of water, but not enough to sustain life, so that it remained necessary to feed both by hand. The young bird begged from the adult on the few times that they were together in a cage, but was always repulsed.

After a week, we decided that the birds could never be zoo exhibits. It would be impossible, without building a huge cage containing a large pool, to provide a situation where they could duplicate normal feeding procedure, since they swoop down on the wing, and catch small fish as they jump from the surface of the sea. Too many man hours would be required to hand feed them, so Mr. Breese decided that release was the best answer. On New Year's day, I took the adult to the makai side of the ponds at Kaneohe Marine Corps Air Station. Lifting it from the box, I held it on my hand, arm extended. There it sat, flapping wings occasionally, looking the situation over, until I could no longer keep my arm in the air. I placed it on the sand, where it continued the same procedure for nearly five minutes. At length I began to wonder if it were injured, took one step forward, bent over the bird, upon which it rose, made a half-circle in the air, then flew so high it was a mere speck in the clouds, and headed in the direction of Diamond Head. He doubtless sped back to Necker, for he was never seen again in that area.

The day following, January 2d, the immature tern, little Alba, suddenly refused all food. He would snap at a proffered fish, then either turn away indifferently, or take it, only to drop it immediately. A few drops of water were received. The situation was perplexing. Why did he suddenly refuse the food which he had accepted eagerly before? It was not the removal of the adult, for the two had been separated most of the time. The fish were in good condition. During the next five days, only six small fish were eaten. The shivering became extremely pronounced, and I expected momentarily that the little fellow would die. In desperation, I procured live fish, of which he ate ten the first day, 15 the next, 50 the next. From then on, our only problem was to keep him in live fish. Never again did he accept a frozen fish, or a dead fish of any variety, except very rarely, at the beginning of a feeding, when he was caught unaware, and hungry. I might add at this point, that from early January on, Alba was not fed from early morning until I returned from school in the afternoon. He did not like to eat early in the morning, so it was with difficulty that he could be persuaded to take more than 5 or 6 fish then. He was hungry by the time I arrived in the afternoon, and would eat up to 20 at a time, then in another hour would take more. The normal intake during a day was about 40 fish, if fairly large, 2 - $2\frac{1}{2}$ ". If smaller, the take naturally was larger. Before the end, he was taking quite large fish, up to 3" in length, provided the head was not more than $\frac{1}{2}$ " in diameter.

During the time the little tern was with us, the streams and pools at the Zoo were pretty well stripped of mosquito fish. The Zoo attendants caught fish for him three days a week, while I supplemented their catch by fishing in the Moiliili quarry pool, coming home with beautiful sword tails. A kindly landlord offered no objections to the laundry tubs being constantly full of fish, nor to the odor of fish that permeated the garage.

Fish were taken into the bill, manipulated, turned, and swallowed headfirst. With large fish, occasionally the bones of the head would be audibly crushed. Several curious habits developed. Frequently Alba would swallow a fish, then lay his head down against the upholstered back of the chair which he had chosen as his own, and move his head from side to side so rapidly one could scarcely follow the movement, sometimes accompanying this with rapid wing beats. As he approached the limit of his capacity, he often would accept a fish, but hold it in his beak for some minutes, perhaps waiting until the rest of the fish had time to settle. At other times, it was a comical sight to see him stretch his neck up as far as possible, then bring his head down cork-screw fashion, as though to compress the fish, as perhaps, it did!

All this talk of the tern's "accepting" fish sounds much more simple than it actually was. Fish are slippery, and many a fish landed on the floor half a dozen times before reaching its final destination. By the middle of March Alba was catching part of his own fish from a proffered bird's bathtub. I attempted then to have him catch them from a large pan on the floor. He watched the fish intently, but that was all. When set on the edge of the pan he flew, apparently frightened. After I took him to the Zoo, at the beginning of April, he learned to catch more and more fish from a dish, flapping his wings as he did so. This gave us hopes that he would survive when released, feeling that instinct was teaching him that he should catch fish on the wing.

Since I was away from home most of the day, it is hard to determine just when the first flight occurred. On January 23d, I saw him fly from the floor to the couch. A week later he managed to fly to the back of a platform rocker, which was henceforth the accepted perch. Only rarely was there evidence of a flight around the room, so I instituted training flights daily by taking him repeatedly to the end of the room, so that he would fly to the chair.

By the end of the second month of his residence with me a perceptible change took place. Flight was good. He became much more alert, watching movement, such as a fly crawling, with great interest. He showed sensitivity to noise, to sudden light, or rapid movement, and while not apparently afraid, jumped violently when such things happened. I do not know when he began to make a distinction between persons, but long before this date he was able to recognize me. He was completely unafraid of me, but my callers made him a little nervous. He permitted them to approach him closely, and even pick him up, but not happily.

Usually he spent the night in the bathroom, perched upon a rock brought in for that purpose, but on two occasions he remained on the chair back close to my bed. They proved restless nights. He moved continually from one side of the chair to the other, flapped his wings, and was generally restless. It seems to me from my very limited observations of sooty and noddy terns at night that this is typical tern behavior, yet I could never see that he moved from his rock when left in the bathroom.

On April 11th I took little Alba to the Zoo, where he was placed in a cage, not on exhibition, but where he had plenty of sunshine, the lack of which had been of considerable concern to me. By this time he probably was about four and one half months old, and doubtless would have been on his own had he been left on Necker Island. All the down had disappeared by the middle of February, the bill began to show a slight, definite blue at the base by February 7th, but did not appear to be as blue as the adult's until the first of May. Undoubtedly his progress was slow, due to abnormal living conditions, and lack of sunshine. There never had been a decided moult. The down seemed to wear off, and only an occasional feather was lost. On February 2d, I noted that he had lost most of his tail

feathers, but three weeks later he had developed a perfect forked tail. The plumage looked a little brown when taken to the Zoo, and to my horror, I found it was because he was not perfectly clean. I had used a bulb syringe to bathe him, since he had been greatly frightened when I put him into bath water, although frequently he would thrust his head into the water in which I offered the fish, shake it violently, fluttering his wings the while, like a canary about to take a bath. The first day at the Zoo the sprinkler was on for a long time, he stayed in it perforce, and came out a spotless, gleaming white.

Alba's entrance into the Zoo had been timed for spring vacation, so that I would be able to be with him for considerable periods of time during the first week. He was obviously nervous, and would permit no one but myself to approach or feed him. In a few weeks he permitted one of the Zoo attendants to feed him, then two of them, finally he would accept food from almost any one. During the first few days he was better content to sit upon my hand than anywhere else, feeling safer there, apparently. During the time that I had had him, I never before had been able to see that he had any affection for me. He had been completely unafraid, completely gentle, but apparently indifferent to me. After he was taken to the Zoo, he watched for my arrival, flying, as though to greet me, sometimes directly to me, once, indeed, landing upon my head, sometimes toward me, then back to his perch, uttering little cries of welcome. Once or twice, as I left, he cried, as though in protest. Alba had always been remarkably silent, going for days without making a sound. If frightened, he would cry a little, or when extremely hungry he sometimes uttered a little sound. When young, the call and voice was more like that of a passerine, but as he matured, the voice became more guttural, although never harsh, as is the voice of most sea birds.

We now became faced with the urgent need of solving the problem of his eventual disposal. Would he be able to fend for himself, or starve to death? I was so deeply attached to him that the idea of turning him loose to starve was abhorrent. We feared to release him at Kaneohe where the adult had been released, not being at all sure that there is the proper food for a white tern in our waters, since only occasionally do white terns come to Hawaii, and then apparently they do not remain for any length of time. It was thought that if he could be released on Midway, chances of survival would be much better. There he could watch others of his kind fishing, perhaps learn to imitate them, and certainly there would be no shortage of proper food. Eventually, through the good offices of Paul Porter, arrangements were made to take him on a CAA plane, on June 8th.

A box was prepared, with openings for fresh air. I went to the Zoo very early that morning, so that there would be time to feed him well. The time arrived when little Alba had to be placed in the box. Two of the Zoo attendants came into the cage with me, in case I should have trouble. I hesitated, hating to put him into the box. One of the attendants reached up to take him. Instantly, sensing that something was about to happen, Alba disgorged fish in a silver stream - nearly all, I fear, that I had coaxed him to take. I reached for him, he came to me readily, and crawled, as was his habit, toward my shoulder. It was a difficult task to take the little fellow, fold his wings, and place him in the box. He uttered only one little cry, then was silent for the rest of the time while I took him to the airport.

The pilot had been asked to release him in any clump of trees. Unfortunately I had written ahead to the commanding officer of the naval base at Midway, asking if anyone could be found to feed him upon arrival, feeling that the chances for survival would be better with at least one good meal before release. My letter was misinterpreted, Alba was turned over to a family as a pet. According to the letter received later from the commanding officer, he was given the freedom of the house, appeared well, and ate well, but on Sunday morning, June 13th, after only five days, he appeared to droop a little, and by that evening he was dead.

Alba's death seemed difficult to understand. The bird was in perfect condition when he left the Zoo. Even though it is possible that he was not given enough fish, he had lived for five days practically without food when in down, with no ill effects, and

short rations as an adult should not have caused death. White terns are often unable to catch fish during storms, and are so constituted that they can endure it. I fear that it was the shock of the change which proved too much for him. Knowing how nervous he became at noise, and changes, it seems entirely possible that this last great change was more than he could endure. I shall long grieve over the untimely death of this lovely, gentle little creature, for whom I had wished a normal happy life.

BIRD NOTES:

First returning plover seen in Kapiolani Park by George C. Munro was three in the morning of August 24. Mrs. Munro counted eleven in the evening of the 25th at their evening gathering place in the polo field. They gradually increased and settled on their various areas until by September 5 there was no confusion and there was a bird on each section except one and on the 9th it had returned. All or nearly all are almost certainly the same birds as occupied the areas from the end of October 1953 until the end of April 1954.

George C. Munro

OCTOBER ACTIVITIES:

FIELD TRIPS:

On our first walk of the month, October 10, we plan to go again to the Kaneohe Marine Air Corps Station to observe water and shorebirds. As decided at our last meeting, we will gather at the Library at 8:00 A.M. instead of the former earlier hour. Transportation - 25¢.

October 24: A walk on the Aiea Trail has been planned for our second trip of the month. Al Labrecque reported that he was on the trail a short time ago and he was interested in the number of birds observed, for in the past, birding has tended to be poor on this trail. Let us hope the lilikoi will be juicy and ripe. Meet at the Library of Hawaii, at 8:00 A.M. Transportation - 25¢.

MEETING:

October 18: Our new meeting place will be at the new Aquarium at 7:30 P.M. at which time we will show the Audubon bird slides. Many of our new members have not seen these, and our older members are looking forward to seeing them again.

HAWAII AUDUBON SOCIETY OFFICERS:

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