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CARE OF INJURED BIRDS

By Jack L. Throp
Director of Honolulu Zoo

We are occasionally called on to minister to injured birds. It may be of some help to have a little information on treating the worst cases. Mynah birds seem not always adept at getting out of the way of cars, so they are the most common patients in our "kitchen infirmaries." The first step is an appraisal of the injury. A difficult decision is usually required; are the damages repairable? Will the bird, once it is healed, be able to carry on adequately and compete with his own kind for food and shelter? Obviously the bird must be able to fly. If the wing is broken either at the joint or so close to the body that the ruptured bones can't be brought together properly, then the humane thing is to dispatch the bird in as effective a way as possible. Other injuries can be just as detrimental to survival of the bird. The inspection must be realistic in judgment. If it is found the damages are too severe, then have the courage to kill the bird. A small cardboard box with cotton thoroughly soaked in chloroform will do the job, other methods are just as effective but may not appeal to many in doing the deed "nicely."

A broken wing can be easily repaired if the fracture is in the "lower arm" or in the "hand" of the wing. "Upper arm" breaks are more difficult. The first service is to cut the primaries and secondaries as close as possible. This relieves the weight from the wing so that the muscle will be able to support it in a normal position. If we pull the feathers, some additional damage may be caused. After the wing is healed, pull out the cut feather stubs and the new feathers will begin to grow immediately. If any of the flight feathers are sheathed (still growing, blood filled), then these must be pulled. The bird can easily bleed to death from a cut sheathed feather, but by pulling it the feather is detached from the blood supply and there will be no bleeding. The fractured bones are then brought together with the wing folded in a normal attitude. In many cases no bandaging is necessary. If the wing should droop abnormally, then a loose binding using cellophane tape is used. Adhesive tape works as well, but when it is finally removed, many small feathers are also pulled. The bird should be placed in a semi-darkened cage in a quiet area. Put the food and water in a convenient location and the perches near the cage bottom, so that there will be little disturbance to the wing, when the bird moves about. The break should be completely healed in three weeks.

In a case of a fracture in the fleshy part of the leg or in the upper arm of the wing, negative treatment is the best. Put the bird in a quiet area and disturb it as little as possible. A fracture of the lower leg can lend itself to an amateur "Kildare" or "Casey." A splint made of a feather quill of a proper size is used to set the leg. Split the quill down the length, so that it can slip over the leg and cover both ends of the break. A thin cotton layer may be used under the splint, but if the quill fits well enough, the cotton should be dispensed with.

When damage is too extensive to a foot or lower leg for healing, then don't hesitate to save the bird through amputation. Birds can generally survive quite successfully in such cases. It was once my experience to amputate the badly crushed leg of a Brown Pelican. The bird behaved from that moment as though he were born in that condition. Later he was released, and for several months was known to be competing successfully in Pelican society.

A tear in the skin is remedied with needle and thread. Bring the edges of the skin together by drawing the cut closed. An application of a healing cream such as White's A-D Ointment will keep the edges soft and encourage mending. Wounds do not become infected easily with birds because of their high body temperature, but if infection is present or occurs, then the best procedure is to see a veterinarian. We have an obligation to our interest in birds to do what we can, when one is in trouble. Some of our most memorable moments in the avian world can occur under such circumstances.

HAWAIIAN BIRD SURVEY

By Walt Donaghho

Kauai, August 6-15, 1965

Na Pali Coast, August 6-8: White-eyes, Ricebirds, Linnets, and Cardinals, all exotics, were along the Kalalau Trail. Koa'e (white-tailed tropic bird) were seen flying against the cliffs in the various valleys. I heard two 'A'o (Newell's shearwater) in the Waiahuakua Valley during the night. Families of Chinese thrush were in Kalalau Valley. There is a large colony of Noio (Hawaiian noddy tern) in the cave at the east end of the east beach at Kalalau. It contains more than 100 birds. Noio also nest in the Wet Cave at the west end of the west beach.

Gray-backed terns were flying along the coast about a hundred yards offshore, while I waited for the helicopter on the west beach.

Kilauea Point, August 6: Booby chicks were from half grown young to flying immature birds, mostly the latter. I examined several Wedge-tailed shearwater burrows and found them empty. There was one Meadowlark flying over the grassy area of the light-house. Four Koa'e were flying about the cliffs on both sides of the point. Frigate birds were resting among the boobies on Mokuaeae Islet offshore.

August 17: Went with Gerry Swedburg to four reservoirs and other favorable areas to count waterfowl and shore birds. The count was as follows:

Koloa Reservoir: Four Coot, one 'Auku'u (black-crowned night heron).

Hanapepe (or Port Allen) Salt Pan: Three Sanderlings, one Turnstone.

Lihue Plantation Settlement Basin: Eight Gallinule, three Koloa (Hawaiian duck)(one pair and one sitting out on the mudflat), one 'Auku'u, one Pacific golden plover.

Ahukini Reservoir: Ten Turnstones, eight Golden plover, one Tattler. Are these the first arrivals of the Golden plover?

Three Mockingbirds were seen near the Spouting Horn.

Miscellaneous: Counted seven Meadowlarks on the Wailua Golf links from on and near the highway.

Koaie Region, Alaka'i Swamp: I made five censuses in the Koaie Region from August 11 to 15. These include from the Mohihi River to the Koaie Cabin in Koaie Canyon, August 11; the Koaie-Waialae Trail, August 12 and August 14; from the cabin to the Wainiha rim, traveling up the west side of Koaie Canyon, August 13; and the trip out to Mohihi on August 15.

Most spectacular observations were of one 'O'o 'a'a on the flat just at the summit of the trail out of the canyon, on the east rim, which I could call 'O'o Flat; and one Nukupu'u not far beyond on the same day. The latter was creeping all over the limbs of an 'Olapa (Cheirotendron) tree, now and then pausing to hack at the

stump of a limb. The 'O'o was also acting like a creeper, creeping over the upper branches of Ohia and other trees, frequently hanging upsidedown, and feeding from the mossy covering. I could not discern what it was eating, but I believe it was insects.

The Kama'o (Kauai thrush) still sings sweetly along the Kawaiiki Ridge! Seventeen birds were counted, most of them high atop their singing perches at the tipmost top of a dead limb above a dead Ohia tree. I saw one fly up, then soar down as it poured out sweet flute-like song to the world below.

Seven Puaiohi (small Kauai thrush) were seen, six counted, the seventh being seen as I wandered through the forest trying to find my way out again. Three were young birds, one with its parent, which once perched within a foot of a Kama'o, giving me a good chance to compare the two. The Kama'o is bigger and fatter, while the Puaiohi is slender and more streamlined.

In general, the birds were mostly silent, with very little song. Even the Chinese thrush sang half-heartedly. Most were with immature young, and birds in the first nuptial plumage. 'Apapane and 'I'iwi were seen in various degrees of development to the red plumage.

Many 'Apapane and 'I'iwi were down in the underbrush, with many feeding off the foliage of the 'Olapa. I saw birds gleaming from the leaves, presumably insects or leaf scales.

A tabulation of the five-day censuses is as follows:

Koaie Region	'Mohihi River-'Koaie-Waialae'		'Wainiha Rim		'Koaie-Waialae'		'Koaie Cabin-'		'Mohihi River	
	'Koaie Cabin		Trail		Trail		Trail		Trail	
	August 11	August 12	August 13	August 14	August 15	August 16	August 17	August 18	August 19	August 20
SPECIES	'No.	Con-	'No.	Con-	'No.	Con-	'No.	Con-	'No.	Con-
	'Seen	stancy	'Seen	stancy	'Seen	stancy	'Seen	stancy	'Seen	stancy
	(5 sections)	(5 sections)	(5 sections)	(5 sections)	(5 sections)	(5 sections)	(5 sections)	(5 sections)	(6 sections)	(6 sections)
'Apapane	39	5	83	5	69	4	120	5	69	5
White-eye	48	4	25	3	32	3	8	4	12	4
'Elepaio	10	3	28	5	19	4	26	5	22	6
'Anianiau	10	4	14	5	10	2	13	5	20	6
'Akikiki	4	3	37	5	4	3	23	4	5	2
'O'u-holo-wai	3	2	6	4	1	1	5	3	2	1
'Amakihi	4	3	9	4	-	-	3	3	2	2
'I'iwi	2	2	10	4	4	3	3	2	5	2
Laceneck Dove	10	4	-	-	-	-	2	1	11	3
Chinese Thrush	5	3	-	-	2	1	2	2	2	1
Ricebird	5	1	-	-	-	-	-	-	10	2
Koa'e	3	1	-	-	2	1	-	-	3	1
Jungle Fowl	-	-	-	-	-	-	1	1	2	1
Kama'o	-	-	9	4	-	-	8	4	-	-
Puaiohi	-	-	3	2	-	-	3	2	-	-
'O'o	-	-	1	1	-	-	-	-	-	-
Nukupu'u	-	-	1	1	-	-	-	-	-	-

The constancies, based on one mile sections, give an idea of the distribution of each species. One can see that the Kama'o and Puaiohi do not range to the west of the Koaie Canyon. In 1936, I found the Kama'o not uncommon on the Kohua Ridge. It was also around the Waialae Cabin. I do not recall it there in 1941. Now, its range, along with the 'O'o, Puaiohi, Nukupu'u, 'O'u, and 'Akialoa is bounded by the Koaie to the west and the Olokele Canyon to the east. They might range through the Hanapepe watershed to the east. The north-south range is not more than three miles. When these birds, which have been steadily retreating, are pushed from this area, they will become extinct. How to preserve their primeval habitat? Leave them ALONE! Obnoxious exotic plants such as the raspberry could be eradicated to prevent their taking over the forest, but NOTHING should be planted.

The following table gives the total numbers of the birds seen. The density is the proportion of the list taken up by one species, i.e., of 876 birds 380 were Apapane or 44.6%. The frequency is the number of days a species shows up, in the case of the Apapane 5 days or 100%. The constancy is based on 25 one-mile sections.

TOTAL COUNT, KOAIE REGION

	<u>Number Seen</u>	<u>Density</u>	<u>Frequency</u>	<u>Constancy</u>
'Apapane	380	44.6%	100%	23
White-eye	125	14.4	100	19
'Elepaio	105	11.9	100	23
'Akikiki	73	8.3	100	17
'Anianiau	67	7.8	100	21
'I'iwi	24	2.7	100	13
Laceneck dove	23	2.6	60	8
Kama'o	17	1.9	40	8
'O'u-holo-wai	17	1.9	100	11
Ricebird	15	1.7	40	3
Chinese thrush	11	1.1	80	7
Koa'e	8	0.9	60	4
Puaiohi	6	0.6	40	4
Jungle fowl	3	0.3	40	2
'O'o 'a'a	1	0.1	20	1
Nuku-pu'u	1	0.1	20	1
Total Individuals:	876			
Total Species:	16			

Editor's note: Although the 'u'ina (hamzah) has not been consistently used in previous writings, since this glottal closure is a consonant which forms an essential part of the words in which it is found, and since its presence or absence in Hawaiian words marks distinct terms, e.g., 'Ou is Bulweria bulwerii (Bulwer's Petrel) and 'O'u is Psittacirostra psittacea (Hawaiian Honeycreeper), whenever it is possible, 'u'ina will be indicated for future writings.

An interesting paragraph from a book by Queen Liliuokalani (Margaret Titcomb's contribution)

LILIUOKALANI HAWAII'S STORY BY HAWAII'S QUEEN Boston, 1898 pp. 196-197

On this visit (to Kauai) I made careful inquiries as to the success of Mr. Gay's efforts to raise the "Oo" bird on this island...I had succeeded in getting from Hawaii, the largest island, some specimens expressly for their island. Twenty pairs had been brought as far as the island of Oahu. Of these, three pairs originally were sent to Kauai, but on making inquiry I found that only one pair was now known to be living there. These seemed to be thriving. Perhaps one cause of their content was a shrub or bush of the mimosa family growing near to the house, which bore fragrant blossoms very similar to those of the lehua, from which, in its own native island, this bird sucks the honey on which it subsists. They are true Hawaiians; flowers are necessary for their very life. This single pair of birds kept near to the house, and were often seen on this fragrant mimosa-tree. Ten years have flown since I had the pleasure of looking at them there; but it is to be trusted that they have been thriving, laying their eggs year by year, and have by this time a flourishing colony. There is a bird on Kauai very similar in some points to the Oo, but they have a white feather under the wing instead of the much-prized yellow tip from which the celebrated leis and cloaks are made.

In July, 1960, Dr. Frank Richardson and John Bowles sighted 'O'o at Kokee, Kauai,

for the first time since 1900.

A*L*O*H*A

William V. Ward, bird-song recorder, is picking up his family and other possessions and transporting them to New Zealand for a year, starting off next month. (September, 1965)

His possessions include all the necessary appurtenances for recording bird song. He expects to see Drs. Falla, Peterson, and Pettingill down under at some time. He will soon get acquainted with all other bird scientists in New Zealand, and he intends to see- and listen to- a great deal of the country and its songs. We hope to get bulletins of his activities; we wish him well. Many of us must be envious.

Magaret Titcomb

BUSH SYMPHONY ABOVE THE CITY'S ROAR by Allan Barnes (Margaret Titcomb's contribution from an Australian newspaper)

Above the din and roar of Sydney, English diplomat Donald Trounson has discovered and recorded the beautiful music of the Australian native birds.

In Hyde Park, among the city skyscrapers, he can detect the chirp of the yellow robin, the cry of the fig-bird and the screech of the peewit.

Among the flats and home units of Point Piper, where he lives, Trounson hears the tinkling bells of the blue wren and the raucous call of the currawong. And in the reed beds of Centennial Park he has heard a song he finds as beautiful as his beloved English nightingale--the call of the tiny Australian reed warbler.

So obsessed has Trounson become with Australian birdlife that he has already recorded on tape nearly 100 of their calls...He says, "Most Australians don't realize what a glorious collection of birdlife this country has. There are 750 species of birds in Australia--almost double the number we have in England--and every one has its individual call. It struck me the very first night I arrived here six years ago...I remember to this day the lovely rich flute-like call of the bull-bulls. It was fascinating."

In the sandhills at Kurnell he found and recorded the elusive tailorbird; in the bush at National Park the lyrebird; and at Avalon he taped the strange ping-pong call of the bellbird.

In one memorable day, out of Griffith, in the Murrumbidgee Irrigation Area, Trounson made three of his most prized recordings: the rarely heard Gilbert whistler, whose call sounds like a boy whistling a dog, the spiny-cheeked honey eater, which is confined to inland Australia, and the weebill, the smallest bird in the country.

Proudly Trounson told the author that the three calls had been included on an L.P. disc of Australian bird calls which the Gould League of Bird Lovers has made to help educate Australians on their native birds.

He said, "I find tremendous excitement wandering around the Australian bush. There's a new experience of sound and color around every corner. Where else could you see the glorious sight of 500 sulphur-crested cockatoos or great flocks of pink and grey galahs in flight? And what more evocative sound could you hear than the cry of the magpie? It is the very essence of the Australian countryside, something you never forget. I know I won't."

Announcement from Cornell University, Laboratory of Ornithology, 33 Sapsucker Woods Road, Ithaca, New York 14850, July 22, 1965:

The North American Nest Card Program is winding up the 1965 nesting season, and many cards have already been returned. There are still many cards in the hands of the individual recorders, however, and these should be returned to us as quickly

as they are completed...Regional Centers may determine for their members whether their cooperators should return the cards to the center first, in order to complete local records, or whether they may be sent directly to us as they are completed.

Minutes of the Meeting of the Hawaii Audubon Society, July, 1965.

...The speaker of the evening was Dr. Andrew Berger, lately returned from India. He was in the west and southwest portions of India and his slides showed a desolate, dry country; the people therefore poor, and living very difficult indeed.

There have been few studies of birds of India, so far. In India itself there are probably very few ornithologists, an exception being the Maharajah of Baroda.

Dr. Berger photographed many birds and caught some of them soon after they hatched from the eggs....

FOR JUNIOR MEMBERS:

Have you seen a MASKED BOBWHITE? If yes, when? where? how many? and what happened? In other words, this month's bird is rare! It resembles the common species in its call and general habit.

Leon A. Hansman in ILLUSTRATED ENCYCLOPEDIA OF AMERICAN BIRDS, page 506, describes the bird as follows: Adult male upper parts finely mottled with black, buff, and cinnamon brown. Face and throat with a black mask. Hind neck very finely streaked with white. Under parts reddish brown. Adult female lacks the black markings. Upper parts a mixture of black, white and brown. Throat patch tawny brown, as is also a line over the eyes. A marked chest band, and heavy barrings on the abdomen. Length about 10 inches. He says that the male bird is a strikingly handsome cavalier, with his deep reddish chestnut breast proudly out as he stalks through the long grass of the mesas and valleys where these birds are chiefly found. The "bob-white" call is loud and clear, and like the call of the Eastern form is uttered from a post, rock, bush, or hummock.

This handsome bird was once common in southwestern Arizona, but unable to cope with the extensive agricultural methods of man, it is now found only in northern Mexico.

James C. Greenway, Jr., in EXTINCT & VANISHING BIRDS OF THE WORLD, page 203, says, "Probably the birds had disappeared from the northern part of their range in the mountains of southern Arizona between 1907 and 1914. The last specimen was taken in 1885. The reason for extirpation in Arizona is said to have been the destruction of its grass habitat by drought and by introduced cattle."

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On 14 August 1965, Eben McMillan of Cholame, California, generously contributed the following article on the White-tailed Kite. Thank you for sharing your experiences with the other members.

WHITE-TAILED KITE

By Eben McMillan*

In response to the call for information regarding the white-tailed kite, in the August issue of THE ELEPAIO (Vol.26, No.2, p.17), I am happy to furnish the following brief account of this bird's history, and present status, here in the state of California...I contribute this note in an effort to assist you good people in promoting an environmental conscience among the citizenry of your beautiful land.

Unlike most other species of wildlife that frequented the lowland fields and marshes of California the white-tailed kite seemed incapable of adjusting to environmental problems that were introduced to this area when civilization moved

west. The teeming numbers of wintering waterfowl here brought forth legions of hunters most of whom were more intent on "filling the sack" than on filling the need for recreation. To this dramatic change the waterfowl soon adjusted. But not so with this beautiful little hawk. Soon as a result of this misguided bombardment, the kite, prone not to distrust the man with a gun, and offering itself as an enticing target by flying in and hovering, as they are wont to do when hawking for mice, above the marsh blinds of the hunters, fell behind in its ability to replenish its numbers in relation to those that were being shot. Consequently, by the year 1920 white-tailed kites were rarely seen in California.

I saw my first kite in 1937. It was early morning. I was motoring along a roadway on the east side of San Francisco Bay when the bird was first seen hovering, in the characteristic manner peculiar to this species, over a field in which a farmer was at work with a plow. Even though a first for me, the bird was, nevertheless, unmistakable as it remained stationary over a certain area with the early morning sunlight glinting through the drooping, spread, pure-white tail, while the sun's rays were also flashed off and on from the gently undulating light-colored wing feathers as were a mirror being rotated back and forth to reflect the sunlight in my direction. The buoyancy of this bird as it remained aloft could only be likened to a spider suspended in mid-air by an invisible strand of its webbing. I was late at my destination that morning, and offered no excuse. In my book, none was needed.

Throughout the 1920's and 30's the white-tailed kite, in California, virtually held onto the ragged edge of nothing. Few were seen, and many of those that were seen ended up as stuffed specimens in taxidermy shops or gracing the den of some un-intelligent hunter. Laws were passed to protect this rare bird, but laws without public support become meaningless. The Audubon Society organized in defense of kites, but with only a ripple upon a huge wave of exploitation. Mostly the white-tailed kites did little better than hang on until the coming of World War II.

When America entered this great struggle, factors beneficial to the kites came about in California. The military took over large areas of land in the lowlands and marshes for training purposes. Livestock grazing, farming practices, and public trespass within these lands were prohibited. As a result of this change field mice multiplied in the grass-grown fields and soon were at peak numbers. Ammunition and gasoline were rationed, while free time and leisure were frowned upon. All these things conspired towards freedom from want and persecution for the remaining white-tailed kites. By 1945, the late Egmont Rett, Curator at the Museum of Natural History in Santa Barbara, reported eight pairs of kites nesting on Camp Cook Military Reservation (now Vandenberg Air Force Base where satellites are sent aloft). Kites were reported nesting at Goleta Air Base north of Santa Barbara, at Fort Ord near Monterey, and at Travis Air Force Base north of San Francisco. Their numbers continued to climb spectacularly.

Then, when the shouting and the tumult of the great war finally subsided, it soon became apparent that a new concept in patriotism had been born among the people of our state during the struggle. Ingots of iron, bales of cotton, wheels within wheels, and the defense of privileges were not all we had fought to preserve. Rather, the right to bear witness; the right to bear responsibility; to defend aesthetic values, wilderness, wildlife and the soil of our land became of equal importance. In short, environmental responsibility became of age.

Last year, in September, Mr. and Mrs. Paul Squibb of Cambria counted in excess of seventy kites concentrated in a small watershed. They were feeding on a local build-up of meadow mice there. This spring Peter Churchward of Dunes Lakes estimated that at least fifty kites fed for a week on mice that frequented a field of sugar beets a few miles east of Pismo Beach. White-tailed kites now nest on the golf course near Paso Robles and within the campus grounds of the University of California at Santa Barbara. It does appear that these beautiful and valuable birds are not only coming back; they are here! And, I feel that our land and our

people are much the richer for this fact.

I doubt that kites have adjusted to man. Rather, it appears that man has adjusted to kites, wildflowers, constructive thinking, and most encouraging of all-- a love for the land that sustains him.... Without kites, we might as a nation endure. But, without people who would save kites, never.

* ...By way of introducing myself, I am one of the McMillans who with Dr. Alden Miller, Director of the Museum of Vertebrate Zoology at the University of California, Berkeley, recently conducted a two-year study of the present status of the California Condor. The results of this research have just been published as Research Report No. 6 of the National Audubon Society. Needless to say, we found the condor still involved with the man with a gun. Unfortunately, big-black birds in the hinterland are still shot. There is, nevertheless, a solid movement now afoot to stop this wanton shooting of one of America's rarest wild creatures. We are firmly convinced, following our study of the bird, that condor will live with man if only they are allowed to do so.

Field Notes:

Have you heard that call? Yes, the golden plover is back. They are thinner and wary and many of them are transient, but very soon your plover will be back feeding, so watch very carefully. Have you noticed how they establish feeding areas? They don't mind feeding with mynahs, sparrows, and doves, but no other plover can come near a set boundary. They not only chase away any intruders but also tell them off. All of the birds are still wearing the black belly feathers; some have more than others, so note when your bird changes completely into winter plumage.

The first plover reported back was heard by Mrs. Ruth R. Rockafellow during the evening of August 6 in Wakiki.

The following notes were taken at Hickam Air Force Base:

August 11, 7:00 a.m.: A plover was feeding around the flagpole, but by noon--gone.
 August 23: Two plover were resting among the mynahs, but by noon they were also gone.
 August 24: Three plover were establishing feeding areas, but they were unsuccessful and were gone.
 August 27: Of the three plover looking for feeding areas, one was successful, and at 5:00 p.m. it was busily feeding among the mynahs and sparrows.

August 28: A plover was busily feeding at the King Street side of the Library of Hawaii grounds, and another was resting on the strip of grass in front of the City Hall.

A plover made Lois Taylor's column on About People in the HONOLULU STAR-BULLETIN, August 28, 1965, page A-8. Have you seen that artistic photograph by Warren Roll of the golden plover "surveying the scene from the roof of the Pacific Club" illustrating her article? She says that he varies his diet of insects with an occasional peanut or potato chip.

If you have any such interesting information, please write to me. Also, the next month's bird is the Whooping Crane.

Kojima, 725-A 8th Ave, Honolulu, Hawaii 96816

READERS' NOTES

HONOLULU STAR-BULLETIN, August 27, 1964, page 12, Birds to Carry Radio Transmitters, Navy Scientists to Track Gooneys. Boulder, Colo. (AP)

Every spring thousands of albatrosses or gooney birds migrate from Midway to destination unknown, and in September a new flock returns after an absence of three to seven years.

This year, for the first time, scientists under Dr. Sidney R. Galler of the Office of Naval Research are going to equip 25 goonies with tiny, very high frequency, long-range radios to try to find out the birds' destination on their long

flights. This means of tracking animals and birds and studying their habits by means of radio transmitters--or other devices--which are attached to the subject under study is called bio-telemetry.

The transmitters used on the goonies will operate on 140 megacycles and will have a range of about 2,500 miles. Since these high frequencies radio signals travel in straight lines--directly out into space, scientists will have to follow the birds to within a few hundred miles.

Dr. Galler said that more than 300 U.S. flag vessels are expected to take part in the project, and technicians with sensitive radio receivers and other laboratory equipment will be sent aboard U.S. merchant ships to track the birds. This project is expected to take several years, and \$100,000 is budgeted for the Navy Research Agency's use.

The reason for this project is that these birds have a highly sophisticated bio-electronic system, which we with all our sensitive navigational and communications equipment have not been able to duplicate. The scientists want to find out how the goonies with keen sense of navigation are able to find their way to distant targets with apparently a high degree of accuracy and how they are able to distinguish one target from another.

HONOLULU STAR-BULLETIN, December 10, 1964, page C-10: Smithsonian to Study Rare Newell's Shearwater.

According to Dr. Charles Ely this is primarily a distribution and ecology study--to determine where the bird goes when not nesting, what it does when it gets there, and why it does what it does.

"The shearwater is a wedge-tailed, tern-like bird resembling a miniature albatross. It grows between 12 and 15 inches in length, is pure black topside and pure white on its bottom. It was once a common bird in the Islands, nesting on Hawaii, Molokai, Maui, and Kauai. But over the years the shearwater population dwindled until, at one time, it was said there were only a scant seven in existence.

"There were two explanations for its extinction. The early Hawaiians named the bird the "Ao," because of its eerie ao-ao-ao like cry, and considered it an omen of death. The natives, therefore, killed the bird at will and it was considered good food. The bird was also easy prey for the mongoose, which attacked the young during nesting, destroyed the eggs or killed the parents....

"It prefers nesting in the burrows at the foot of cliffs between the 500- and 1,000-foot elevation. The nesting period begins late in summer and ends early in the fall--the remainder of the time the shearwaters disappear out at sea. They've been sighted hundreds of miles from shore and may spend months without approaching land. They have webbed feet--like most sea birds--which enable them to swim. And their long, slightly curved beak permits them to dive for squid and fish and other sea life.

"During nesting, they inevitably return to the spot where they were born.... Though it was once believed they existed in large quantities near Puuao, Hawaii, considered an original nesting place, not until recently have shearwaters been discovered in the Islands. No one is known to have ever seen a shearwater nest, because they are inaccessible. However, Gerald Swedberg of the State Department of Fish and Game on Kauai, has reported sightings in this area.

"One of the strangest characteristics of the little bird--one which often leads to its death--is its unpredictable pattern of flight. One minute the shearwater will be flying peacefully through the air, the next it will drop like a plumbob to the ground.

"Dr. Ely speculates the bird might become confused in fog or other severe weather conditions. 'Often they fly into lighthouses or into cars on the highway, both young birds that just leave the nests and adults do this,' he said. These incidents usually occur late in the nesting season, which might possibly have some connection or during a heavy rain or fog.

"The shearwater was not discovered in Hawaii until around 1900 when a missionary named Brother Mathias was given one by the natives. He passed the bird on to W.H.

Henshaw, an ornithologist, who promptly named the new discovery 'Newell's' Shearwater.

"No one really knows its origin. Some reports indicate it might have come from the Atlantic Ocean, others speculate it migrated to the Islands from the coast of Mexico.

"The Mexican theory is the most credible said Dr. Ely, for the bird much resembles Townsend's Shearwater which inhabits that region."

HONOLULU STAR-BULLETIN, May 1, 1965, page B-16: The Wonderful World of Animals by Dr. Miller.

Under the heading, "Support for the Birds," Dr. Miller says, "Varicose veins are not common in canaries or parakeets. However, these birds may have trouble with circulation in the feet and legs. Organic disease may be a basic cause, but often sluggish circulation is a factor....The first obvious sign may be ominous darkening of the toes as gangrene develops....The doctor may save life or limb, and sometimes a bird will even recover spontaneously. But prevention is obviously to be preferred. One of the most helpful measures is to provide perches of varying diameters. These give the grasping foot of the bird flexibility and improved blood vessel tone. Ideally, all perches should vary in size from one end to the other. This way, even the lazy bird who sticks mostly to one perch gets some healthy toe-stretching."

ALOHA to our new members:

Regular: Charles Christian, 1442 Victoria St, Apt 7, Honolulu, Hawaii 96822.
Carroll A. Rieck, Route 7, Box 485-A, Olympia, Washington.
Junior: Erin Casey, 3363 Anoa Place, Honolulu, Hawaii, 96822.
David Taira, 1454 Kinau St, Apt 12, Honolulu, Hawaii 96822.

CONGRATULATIONS: Name: William Allen
Weight: 8 pounds 7 ounces Length: 21½ inches
Date arrived: August 24 at 11:54 a.m.
PROUD PARENTS: Meredith & Mike Ord.

MAHALO NUI LOA: Many thanks to Janet Bell and Miriam Sinclair for the tremendous work on the annual and five-year indexes.

The MYNAH is still busily chattering, but before the year is over, we hope to share our experiences with you.

OCTOBER ACTIVITIES:

October 10 - Field trip to study shore birds. Bring lunch, water, and if possible, your car. Transportation cost (\$1.00) to be paid to the drivers. Meet at the Library of Hawaii at 8:00 a.m.
Leader: Mike Ord, telephone: 256-320.
October 11 - Board meeting at the Honolulu Aquarium Auditorium at 7:30 p.m.
Members are always welcome.
October 18 - General meeting at the Honolulu Aquarium Auditorium at 7:30 p.m.
Program for the night: Mr. Russell K. LeBarron of Hawaii State Division of Forestry will talk on "The Future of Hawaii's Forest Reserves."

HAWAII AUDUBON SOCIETY EXECUTIVE BOARD:

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DUES: Regular - \$3.00 per annum, Regular out of State - \$2.00 per annum,
Junior (18 years and under) - \$1.00 per annum, Life - \$50.00